NONPARAMETRIC TEST FOR NONDECREASING ORDER ALTERNATIVES IN RANDOMIZED COMPLETE BLOCK AND BALANCED INCOMPLETE BLOCK MIXED DESIGN

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The supervisory committee certifies that this dissertation complies with North Dakota State University's regulations and meets the accepted standards for the degree of

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ABSTRACT

Nonparametric tests are used to test hypotheses when the data at hand violate one or more of the assumptions for parametric tests procedures. The test is an ordered alternative (nondecreasing) when there is prior information about the data. It assumes that the underlying distributions are of the same type and therefore differ in location. For example, in dose-response studies, animals are assigned to k groups corresponding to k doses of an experimental drug. The effect of the drug on the animals is likely to increase or decrease with increasing doses. In this case, the ordered alternative is appropriate for the study.

In this paper, we propose eight new nonparametric tests useful for testing against nondecreasing order alternatives for a mixed design involving randomized complete block and balanced incomplete block design. These tests involve various modifications of the Jonckheere-Terpstra test (Jonckheere(1952), Terpstra(1954)) and Alvo and Cabilio's test (1995). Three, four and five treatments were considered with different location parameters under different scenarios.

For three and four treatments, 6,12, and 18 blocks were used for the simulation, while 10, 20, and 30 blocks were used for five treatments. Different tests performed best under different block combinations, but overall the standardized last for Alvo outperformed the other test when the number of treatments and number of missing observations per block increases.

A simulation study was conducted comparing the powers of the various modification of Jonckheere-Terpstra (Jonckheere(1952), Terpstra(1954)) and Alvo and Cabilio's (1995) tests under different scenarios. Recommendations are made.

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DEDICATION

I dedicate this dissertation to my late grandmother, Abena Dankyi and my mother, Gifty Dankyi. Without their your endless love and encouragement I would never been able to be where I am today. I love you both and I appreciate everything that you have done for me.

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1. INTRODUCTION

Most people from different disciplines who use statistics are more familiar with the techniques and interpretation of parametric analyses than nonparametric analysis. The most commonly used parametric tests are t-test, analysis of variance, and linear regression. These parametric tests are mostly used when we have interval/ratio level of measurements. For example, the t-test procedure for testing the difference between two means assumes that the data follows a normal (bell) shaped distribution. The data for parametric tests are required to have complete records (no missing observations). Linear regression also relies heavily on this assumption. However, parametric tests can perform well with skewed and nonnormal distribution, when the data is nonnormal continuous data with large sample size. Also the parametric test performs well when the spread of data for each group is different. Lastly parametric tests have more statistical power than nonparametric tests if the assumptions for parametric tests are met.

However, when the data fails the assumptions and requirements for a parametric analysis, we can use the two methods in statistics to correct this situation namely, using data transformation or using nonparametric statistics. Data transformation is mostly used in hopes of achieving normality of the error (residuals) and constant variance in linear regression. One of the most popular ways to perform transformations is by using Box-Cox Transformation. However, not in all cases that transformations can correct the data to satisfy the assumptions and requirements for a parametric analysis.

Another way, is to use nonparametric analysis when the assumptions and requirements for a parametric analysis fails. This method of statistical analysis is based on fewer assumptions, that is, it does not assume the outcome is approximately normally distributed. It is also known as **distribution free**, which means it does not rely on the assumption that the data are drawn from a given parametric family of probability distribution. It is often used when the area of research is better represented by the median (especially when the data is skewed), when you have a very small sample size, and when you have ordinal data, rank data, or outliers that can't be removed (outliers not due to errors). Below are some of the advantages of using nonparametric analysis :

1. They have few assumptions about the underlying population distribution.

2. It enables the user to obtain the p-values for tests and coverage probabilities for confidence intervals without relying on the assumptions of the underlying populations are normal.

3. They are often easier to apply than the parametric analysis, but not always.

4. They are also easier to understand and compute.

5. They are less efficient than the parametric analysis when the underlying population is normal, but they are slightly or more efficient than the parametric analysis when the underlying population is not normal.

6. They are not sensitive to outliers.

7. They can be used for rank data , rather than the actual magnitude of the observations which the parametric analysis requires.

8. The availability of high-speed computing to carry out time-consuming or difficult computation has enabled nonparametric analyses to come into its own field in statistics.

9. They can applied to different treatments with different samples sizes and or with missing observations .

Fortunately, the most commonly used parametric analyses have a nonparametric counterparts. This can be very helpful when the assumptions of parametric analyses are violated simply because you can choose a nonparametric alternative as a backup to perform the analysis. For example, ANOVA can be used to assess the difference in a continuous dependent variable between two or more groups. It's nonparametric alternative will be to use the Kruskal-Wallis test. Mann-Whitney is the nonparametric alternative for two sample t-test and Wilcoxon Sum Rank test is the nonparametric alternative for paired t-test. In this research, nonparametric analyses approach was used for both complete and incomplete (with missing) data. Below are some of the basic terms of experimental design used in this research.

1.1. Introduction to Experimental Design

Experimental design in research is any research conducted with a scientific approach by laying out, details of the experimental plan in advance of doing the experiment. During the process of the design, some variables are kept constant while the other set of variables are being measured as the subject of the experiment. An experiment deliberately imposes a treatment on a group of objects or subjects in the interest of observing the response. It is very important to note that, an experiment is different from observational study, which involves the process of collecting and analyzing data without changing existing conditions. Designing and planning an experiment properly is very important in order to ensure that the right type of data and a sufficient sample size and power are available to answer the research question of interest as clearly and efficiently as possible. Experimental design has become one of the important tools in scientific and engineering world for improving the product realization process which entails new manufacturing process design and development, and process management. The techniques in experimental design used in process development can lead to: an improved process yield, reduced variability and closer conformation to nominal and target requirements, reduced development time, and reduced overall cost. The order of complexity of designs used in experimental design can range from simple, less rigorous designs to more complex and technically challenging designs. Any experimental problem has two parts namely: the design of the experiment and the statistical analysis of the data. The use of modern day technology and software has made Experimental design to become one of the most important design tools used across various disciplines and fields of study. Below are some basic experimental design terminologies used across disciplines:

- **Response Variable**: outcome of an experiment.
- **Experimental Units**: are the objects which receive treatments. It is sometimes referred to as subjects, participants, elements, cases or plots. Experimental units are often the same as **observational units** (especially in clinical trials), which are the objects on which the response is measured.
- **Factors**: are the different kinds of treatments which the experimental unit can assume or simply variables that affect the response variable. Factors are often quantitative variables but with discrete levels used in the design.
- **Treatment levels**: are different values that a factor can assume. Sometimes one treatment level is assigned as the "control group" and the other treatment levels are compared to this control

- **Effect**: is the change in response caused by the change in the factor level. There are different types of effects in experimental design namely fixed effect and random effect. We can also have three ways to think about the effects of factors, which are simple effect, main effect and interaction effects.

- **Design**: is the number of experiments, the factor levels and the number of replications for each experiment.

Example: An experiment is done to see whether folic acid supplementation helps humans grow bigger. Ten humans each are randomly assigned to each of four groups. The humans in the first group receive 0 mcg folic acid supplement, the humans in the second group receive 10 mcg, the third group 20 mcg and the fourth group 30 mcg.

- The experimental units are the individual humans.
- The factor is folic acid supplementation.
- The levels of the factor are 0 mcg (control), 10 mcg, 20 mcg, and 30 mcg.
- The effect is, whether folic acid supplementation helps humans grow bigger.

A lot of problems can arise if care is not taken during an experimental design and analysis. One main problem is what is called Confounding effect, which occurs when the experimental control do not allow the experimenter to reasonably eliminate plausible alternative explanations for an observed relationship between independent and dependent variables. In our example above, confounding will occur if all the males received the folic acid supplements and the females didn't receive any folic acid supplement (O mcg) thus making it impossible to say whether the drug was effective or not. Blocking, which is a design technique can be used to improve the precision with which comparisons among the factors of interest are made. That is males and females could be randomly and equally assigned to treatments. One group could receive the control and if the other treatment group receiving the folic acid supplements had increase in body size, it would be reasonable to conclude that the supplement was effective in helping them get bigger. Most of the times blocking is used to reduce or get rid of the variability transmitted from nuisance factors- that is, factors that have some influence on the experimental response but in which we are not directly interested.

It is very essential for the researcher or anyone involved in the experiment to have a clear idea in advance as to what is being studied and understand how the data are to be collected and analyzed. The following recommended guidelines below in statistics can lead to a successful design and analysis: understand the statement of the problem or research question, select the response variable, choose the factors, levels and ranges, choose the experimental design to use, perform the experiment, run a statistical analysis of the data collected, and draw conclusions and make recommendations.

1.2. Some Types of Experimental Designs

1.2.1. Completely Randomized Design (CRD)

This is one of the simplest designs in experimental design, in which treatments are allocated to the experimental units in a completely random order, in such a way that each experimental unit has the same chance of receiving any one treatment. CRD best fits experimental designs with homogeneous experimental units because the difference among experimental units receiving the same treatments is considered to be the experimental error. A simple example using CRD would be, to compare effectiveness of these two pain medicines, namely Ibuprofen and Tylenol. We will recruit subjects with headaches, let say 100 of them. Our factors would be Ibuprofen and Tylenol. The 100 subjects will be divided into two, with 50 subjects being randomly assigned to Ibuprofen and the other 50 taking Tylenol using simple random sampling method by labeling the subjects from 0 to 99 and using a random number generator (either a calculator or a computer software) to select the first 50 subject and omit repeats. The first 50 subjects are assigned to take Ibuprofen and the rest are assigned to take Tylenol. We can now compare results from these two groups. Some advantages of using CRD are; it has an easy layout, completely flexible to use because any number of treatments and replications for each treatment can used, all experimental materials can be utilized in the design, it has maximum degrees of freedom for experimental error, it has a sample analysis of data as compared to any design, and lastly can be used even if we have missing values. However, some disadvantages of using CRD are; its less accurate then other designs, and its very difficult to find homogeneous experimental units which makes its not suitable for field experiments as compared to other experimental designs.

1.2.2. Randomized Complete Block Design (RCBD)

This is an improvement on Completely Randomized Design. Blocking is used here to group together experimental units that are similar or homogeneous. By blocking, the variability within each group is reduced allowing us to detect differences caused by treatments clearly. In RCBD treatments are randomly assigned within blocks of adjacent subjects, where each treatment appears once per block; the number of blocks represents the number of replications; and treatments can be adjacent to other treatments, but not to the same treatment within a block. In RCBD each treatment is used once in every block, but when each treatment is replicated and used the same number of times in every block, then the design is **Complete Block Design**. Some advantages of using RCBD are; you can have any number of treatments and blocks making it very flexible design which is easy to construct, gives more accurate results than the CRD due to blocking, and its fairly easy to use in a statistical analysis even with missing data. Some disadvantages of using RCBD are; it is suitable for small number of treatments because the experimental units within a block must be homogeneous, it is not suitable when blocks have large variability since large variability tend to increase the error term which makes it difficult to detect treatment differences, and treatment effect on the response variable must be the same from block to block.

1.2.3. Incomplete Block Design (IBD)

This design is similar to that of RCBD, just that in IBD each block receives only some of the selected treatments and not all the treatments. When the treatment levels are more than the experimental units or when the block size is less than the number of treatments, then we can use the IBD because it retains the desired number of blocking factors, but as mentioned before, it does not allocate all treatments to every block. In this case CRD and RCBD are not suitable because they require large number of experimental units to accommodate all the treatments. Some advantages of using IBD are; small blocks are more homogeneous than large blocks making the experimental error to be lower, it is suitable when there is variability with larger blocks, and it is suitable for increasing precision. Some disadvantages of using IBD are; it requires a fixed number of treatments or a fixed number of replications or both, more replications are needed, and it can make the analysis to be complex.

1.2.4. Balanced Incomplete Block Design (BIBD)

BIBD is a special kind of IBD, but in this case the number of replications for all pairs of treatments in the design is the same. All pairs of treatments are compared with the same level of precision although differences between blocks may be large. In BIBD each block contains the same number of subjects, the treatments occur the same number of times, and each pair of treatment occurs together the same number of times. The advantages and disadvantages of BIBD is the same as that of IBD.

1.2.5. Latin Square Design

This design is used to control the random variation of two factors or in other words, this design is used when we have two blocking factors. This design has equal number of rows and columns, so that all possible combinations of values for the two variables can be tested multiple times. The number of rows and columns corresponds to the number of treatment levels. The Latin square designs allows the researcher to remove the two sources of error variations due to the two blocking effects. The advantages of using Latin Square designs are, it can be used to tackle cases with several nuisance factors and we either wish to separate or cannot combined them into a single factor, and it can be used if we have smaller number of runs. The disadvantages of using Latin Square design are, the number of treatment factors has to be the same as the number of each blocking variable, and it also assumes there is no interaction between blocking variables or between the treatment variable and blocking variable. A Latin square with 3 blocking factors is called Graeco-Latin Square.

There are also other types of designs that can be explored in experimental designs, namely, parallel design, Split-Plot design, etc. In this research we will focus on Randomized Complete Block Design and Balanced Incomplete Block Design.

1.3. Hypothesis Testing

Hypothesis testing is based on an assumption about a population parameter, which may or may not be true. The procedure involved in hypothesis testing is done to determine that the probability of a given hypothesis is true or not. In statistics since its often impractical to determine whether a statistical hypothesis is true on the entire population, statisticians use a random sample from the population. If the sample is not consistent with the statistical hypothesis then the hypothesis is rejected. There are two types of hypotheses, the null hypothesis and the alternative hypothesis.

1.3.1. Null Hypothesis

In this paper our null hypothesis will be that, there is no difference in treatment effects or there is no difference in the locations among k populations, which is written as

$$H_0 : \tau_1 = \tau_2 = \cdots = \tau_k \tag{1.1}$$

1.3.2. Alternative Hypothesis

In this paper our focus will be on ordered alternatives, especially non-decreasing (or increasing) ordered alternatives, which is written as

$$H_1 : \tau_1 \leq \tau_2 \leq \cdots \leq \tau_k \textit{(where at least one of the inequalities is strict).} \tag{1.2}$$

The other ordered alternative is the non-increasing (or decreasing) ordered alternative, which can be written as

$$H_2 : \tau_1 \geq \tau_2 \geq \cdots \geq \tau_k \textit{(where at least one of the inequalities is strict).} \tag{1.3}$$

There is also another alternative hypothesis called Umbrella alternative which deals with treatment effects increasing with increasing levels, but at some higher level it tends to decrease. In the Umbrella alternative, the treatment effect has a monotonic increasing trend and when it gets to the peak, its starts to decrease. It can be written as

$$H_3 : \tau_1 \leq \tau_2 \leq \cdots \leq \tau_{p-1} \leq \tau_p \geq \tau_{p+1} \geq \cdots \geq \tau_{k-1} \geq \tau_k \tag{1.4}$$

where p represents the peak and $p = 1, 2, \cdots, k$.

The non-decreasing (or increasing) order alternative is a special umbrella alternative with a peak at k.

Lastly, there is a two-tailed alternative which states that not all τ_i's are equal, that is at least one of the τ_i's is different, which can be written as

$$H_4 : \textit{at least one of the } \tau_i \textit{ is different} \tag{1.5}$$

1.4. Motivation

1.4.1. Case Study 1

In a dose response study, individuals are assigned to k groups corresponding to k doses of experimental drug. The effect of the drug on the individuals is likely to increase or decrease with increasing doses. To avoid a nuisance factor, blocking is done on the patients. Every treatment level is applied to every block. However due to limits in research funds, or some patients dying or some patients not continuing treatments or not enough homogeneous experimental units in the blocks to be able to apply all of the treatments, we might then end up with some missing data. The data for this design will be a mixture of RCBD and IBD (but we consider BIBD, which is a special case of IBD when the number missing observation is the same for each block).

1.4.2. Case Study 2

Consider a scenario that is common at the workplace. The general wellness of employees has become an issue of interest. Companies offer wellness packages and education to their employees following studies that claim improved health and wellness lead to improved productivity (NCSF). In light of such statements a company may choose to test its wellness program. Employees will participate in the program and then have their low-density lipoprotein (LDL), cholesterol measure, checked over 6 month followups. Productivity will be measured by number of tasks completed in 6 months. Since changes in productivity and LDL will be tracked on individual employees this then resembles an RCBD. However, employee turnover, sickness or injury along with lack of diligence can cause data to be incomplete. So the final data set will be a combination of RCBD and IBD (but we consider BIBD, which is a special case of IBD when the number missing observation is the same for each block).

In this research we will focus on mixed designs for Randomized Complete Block Design and Balanced Incomplete Block Design with nondecreasing (or increasing) order alternative. Chapter 2 discusses some literature review related to this research. Chapter 3 introduces the four main test for RCBD and BIBD seperately. Chapter 4 discusses the eight different tests proposed for the mixed design and the Alvo test. Chapter 5 provides details of how the simulation study was conducted to compare the different powers for the proposed tests. Chapter 6 presents the results from the simulation study, and chapter 7 talks about the conclusions.

2. LITERATURE REVIEW

In this chapter, we will first present some nonparametric tests that have been developed for various experimental designs for nondecreasing order alternative. These tests all have the assumptions, that we have k random samples, that the population distributions are of the same type, and that the only thing that possible differs in the population distribution is the location parameters. These tests assume that if the location parameters differ, they follow a nondecreasing pattern. Later in the chapter, we will present some nonparametric tests for nondecreasing order alternative in a mixed design.

2.1. Pages

In 1937 and 1940, Milton Friedman developed the Friedman test which uses the magnitudes of the ranks associated with the response variable for each treatment (that is, sums of column ranks). The process involves ranking response variable in each row (or block), then the ranks by columns is considered. In order to use Friedman's test for a given RCBD, these assumptions have to be followed, namely; the data has to have mutually independent blocks, the observations are independent within and among samples, the response variables have to be continuous, observations maybe ranked within each block (that is it does not require combining data across groups before assigning ranks), and there is no interaction between treatments and blocks. However, the alternative hypothesis for Friedman's test is, there are differences in treatments but not ordered alternative.

For non-decreasing ordered alternative, Page's test developed by Page (1963) is well known to have a higher power than the Friedman's test. To compute the Page (1963) statistics L, ranking within each block is done and the Friedman treatment sum of ranks $R_1, R_2, \ldots, R_k$ are computed. The Page statistic L, is the weighted combination of the Friedman treatment sum of Ranks. The Page's (1963) statistic can be written as

$$L = \sum_{j=1}^{k} jR_j = R_1 + 2R_2 + \cdots + kR_k. \tag{2.1}$$

To test H_0 (1.1) against H_1 (1.2) at the specified level of significance, α. Under H_0, the asymptotic distribution of Page's test statistic, L, is normal with mean and variance,

$$E(L) = \frac{bk(k+1)^2}{4} \tag{2.2}$$

and

$$var(L) = \frac{bk^2(k+1)(k^2-1)}{144}, \tag{2.3}$$

respectively, where b is the number of blocks and k is the number of treatments. The standardized value of L is,

$$Z_{page} = \frac{L - E(L)}{\sqrt{var(L)}} = \frac{L - \frac{bk(k+1)^2}{4}}{\sqrt{\frac{bk^2(k+1)(k^2-1)}{144}}}. \tag{2.4}$$

The null hypothesis is rejected when $Z_{page} \geq Z_\alpha$; otherwise we fail to reject where Z_α is the $(1-\alpha)100$ percentile of the standard normal distribution. Under H_0, the asymptotic distribution of Z_{page} is normal with mean 0 and variance 1.

2.2. Jonckheere-Terpstra

Terpstra (1952) and Jonckheere (1954) were the first to independently proposed the same test for ordered alternative with at least one strict inequality following all the centers (same as Eq. 1.2) in the k-sample case for the completely randomized design. For example, an agronomist studied the effect of mowing height on the phosphorus content of a certain species of prairie grass. He postulated that phosphorus levels would tend to be lower in plants that have been mowed at greater heights. Therefore, we can test H_0 (1.1) verses the ordered alternative H_1 (1.2) at the specified level of significance, α. The test statistic for Jonckheere-Terpstra, J, can be written as

$$J = \sum_{i<j} U_{ij}, \tag{2.5}$$

where U_{ij} (Mann-Whitney (1947))is the number of pairs of observation (X_{ia}, X_{ib}) in which $X_{ia} < X_{ib}$, X_{ia} is the ath observation in the ith treatment sample, $a = 1, 2, \cdots, n_i$ and X_{ib} is the bth observation in the jth treatment sample, $b = 1, 2, \cdots, n_j$. Under the null hypothesis, H_0, the test statistic J has an asymptotic normal distribution with mean,

$$E_0(J) = \frac{N^2 - \sum_{j=1}^{k} n_j^2}{4} \tag{2.6}$$

and variance,

$$Var_0(J) = \frac{N^2(2N+3) - \sum_{j=1}^{k} n_j^2(2n_j+3)}{72}, \tag{2.7}$$

where N is the total sample size of all the treatments, and n_j is the sample size of the j treatment. The standardized test statistic of J, Z_{JT}, can be written as

$$Z_{JT} = \frac{J - E_0(J)}{\sqrt{Var_0(J)}}. \tag{2.8}$$

At α level of significance, we reject H_0 if $Z_{JT} > Z_\alpha$; otherwise we do not reject where Z_α is the $(1-\alpha)100$ percentile of the standard normal distribution. The statistic Z_{JT} has approximately a standard normal distribution under H_0 (Hollander and Wolfe, 1999).

2.3. Alvo and Cabillio

Alvo and Cabilio (1995) generalized the Jonchheere's (1954) and Page's (1963) test to the situations where there is one or more missing observations from one or more blocks. Alvo's and Cabilio's test is rank based just like Page's test. Alvo and Cabilio assigned average rank to any missing observation appearing in that particular block. Alvo and Cabilio (1995), calculated the rank of treatment j or average rank $\frac{(k_i+1)}{2}$ if treatment j is missing (i.e., not ranked) for each block i. μ_{ij} was used to denote either the rank for treatment j or the average rank for that missing observation in that block. k_i represents the number of treatment j appearing in block i. Each of the ranks (including the missing observations with average ranks) appearing in block i were multiplied by weights $\dfrac{(k+1)}{(k_i+1)}$, and therefore making the sum of ranks for block i with missing data to have a sum,

$$\sum_{j=1}^{k} \frac{(k+1)}{(k_i+1)}\mu_{ij} = \frac{k(k+1)}{2} \tag{2.9}$$

for block i with no missing observation. Alvo and Cabilio test statistic was calculated by summing $\dfrac{(k+1)}{(k_i+1)}\mu_{ij}$ in each treatment over all blocks i and multiplied by the treatment, that is

$$Alvo = \sum_{j=1}^{k}\sum_{i=1}^{n} j\frac{(k+1)}{(k_i+1)}\mu_{ij}. \tag{2.10}$$

Alvo and Cabilio (1995) test has been proved to be asymptotic normal with mean and variance,

$$E(Alvo) = \frac{n \cdot k(k+1)^2}{4} \tag{2.11}$$

and

$$Var(Alvo) = \sigma_i^2 = n\frac{k_i \cdot (k+1)^2}{12 \cdot (k_i+1)} \sum_{j=1}^{k} (O_{ij} - \bar{O}_i)^2 \tag{2.12}$$

respectively, where O_{ij} is the expected rank for each treatment within a block i, and $\bar{O}_i$ is the mean of the expected rank in each block. The expected rank is zero for any missing observation. The variance σ_i^2 does not only depend on the value of k and k_i, but also where the treatments are missing in a particular block.

The standardized Alvo and Cabilio's test statistics has been shown to asymptotic normal distribution with a mean of 0 and a variance of 1 when the null hypothesis is true. The standardized Alvo and Cabilio's test statistics, Z_{Alvo}, can be written as

$$Z_{Alvo} = \frac{Alvo - E(Alvo)}{\sqrt{Var(Alvo)}} = \frac{\sum_{j=1}^{k} \sum_{i=1}^{n} j \frac{(k+1)}{(k_i+1)} \mu_{ij} - \frac{n \cdot k(k+1)^2}{4}}{\sqrt{n \frac{k_i \cdot (k+1)^2}{12 \cdot (k_i+1)} \sum_{j=1}^{k} (O_{ij} - \bar{O}_i)^2}}. \tag{2.13}$$

At α level of significance, we reject H_0 if $Z_{Alvo} > Z_\alpha$; otherwise we do not reject where Z_α is the $(1-\alpha)100$ percentile of the standard normal distribution.

2.4. Ndungu

Ndungu (2011) developed a test for testing nondecreasing order alternative for BIBD, by using similar ranking statistics as in Page's (1963) test, that is ranking within each block and finding the jth treatment sum and missing observations are assigned a rank of 0. The test statistics for Ndungu (2011), L, is given as

$$M = \sum_{j=1}^{k} jR_j = R_1 + 2R_2 + \cdots + kR_k \tag{2.14}$$

Ndungu (2011) considered six scenarios for the simulation to compare the powers, namely

- Three treatments with one missing in each block

- Four treatments with one and two missing in each block
- Five treatments with one, two and three missing in each block

Ndungu's test was asymptotic normally distributed with a mean, $E(M)$, and variance, $V(M)$. The mean, $E(M)$, and variance, $V(M)$ were the theoretical means and variance calculated for each treatment. Ndugu (2011) tested H_0 (1.1) against H_1 (1.2), using the standardized test statistic of M, M^*, which can be written as

$$M^* = \frac{M - E(M)}{\sqrt{V(M)}}. \tag{2.15}$$

The null hypothesis H_0 is rejected in favor of the nondecreasing order alternative H_1 if $M^* \geq Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of the standard normal distribution. Under H_0, the statitic M^* has approximately standard normal distribution. Ndungu (2011) showed through a simulation study that his test was more powerful than that of Durbin's (1951) test. Also, Cao (2009) compared the performance of Durbin test to that of Wilcoxon Signed Rank test in a BIBD which has two observation for each block. Cao (2009) found out that Wilcoxon Signed Rank test performed better than that of Durbin test. Alvo and Cabilio (1995) test is also very efficient when applied to a Balanced Incomplete Block Design.

2.5. Hollander

Hollander (1967) test used the Wicoxon (1945) signed-rank test statistic for testing the null hypothesis (1.1) against ordered alternative (1.2) in a randomized complete block design. For each pair of (u, v) treatments and each of $(1 < u < v < t)$, T_{uv} signed-rank statistic was defined as follows:

$$T_{uv} = \sum_{i=1}^{b} R_{uv}^i \psi_{uv}^i, \tag{2.16}$$

where $\psi_{uv}^i = \begin{cases} 1 & X_{iu} < X_{iv} \\ 1/2 & X_{iu} = X_{iv}. \\ 0 & X_{iu} > X_{iv} \end{cases}$

Here, T_{uv} is a measure of the difference between the uth and vth treatments. The Hollander's test takes into consideration the prior ordering of the treatments. The Hollander's test statistic, H, which depends on the statistic T_{uv} is shown below:

$$H = \sum_{u=1}^{t-1} \sum_{v=u+1}^{t} . \tag{2.17}$$

The test statistic, H, has an asymptotic normal distribution under H_0 with mean and variance given below:

$$E(H) = \frac{bt(t-1)(b+1)}{8} \tag{2.18}$$

and

$$V(H) = \frac{bt(b+1)(2b+1)(t-1)\{3+2(t-2)P_U^b\}}{}, \tag{2.19}$$

where P_U^b, depend on b, value of the correlation between Wilcoxon signed-ranked test statistics. The standardized value of H, Z_H, given below can be used as a test statistic:

$$Z_H = \frac{H - E(H)}{\sqrt{V(H)}}. \tag{2.20}$$

We reject H_0 when $Z_H > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution. Under H_0, the statistic Z_H has approximately standard normal distribution.

Pirie and Hollander (1972) introduced the normal score test for alternatives among k treatments in the RCBD. Pirie's and Hollander's (1972) test was similar to the standard Pages test when $k = 2$ or 3 but when $k \geq 4$, their test differs from standard Page's and is more efficient.

2.6. Best and Reyner

Best and Reyner (2009) developed the Modified Page's (MP) test for ordered alternative. They tested the null hypothesis in Eq. (1.1) against the alternative hypothesis in Eq. (1.2). Their test statistic, MP, is given below:

$$MP = \frac{CL^2}{\sum_{j=1}^{t} \lambda_j^2}. \tag{2.21}$$

This test statistic is obtained by using orthogonal trend contrast. Here, $L = \sum_{j=1}^{t} \lambda_j \bar{R}$ is the orthogonal trend contrast, λ_j is the linear coefficient, $\bar{R} = \dfrac{R_j}{b}$, b is the number of blocks, and R_j is the sum of rank values that assigned treatments. C and V terms can be defined as follows:

$$C = \begin{cases} \dfrac{b(t-1)}{tV} & \text{, ties} \\ \\ \dfrac{12b}{t(t+1)} & \text{, no ties} \end{cases}$$

and

$$V = \begin{cases} \left\{ \sum_{s=1}^{q} r_s^2 c_s \right\} - \dfrac{(t+1)^2}{4} & \text{, ties} \\ \\ \dfrac{(t^2-1)}{12} & \text{, no ties} \end{cases},$$

where r_s and c_s denote the sth ranking and its associate count, respectively. We reject H_0, if $MP > \chi_1^2$, otherwise we do not reject.

2.7. Gokpinar, Gul, Gokpinar, Bayrak, and Ozonur

Esra Gokpinar, Hasan Huseyin Gul, Fikri Gokpinar, Hulya Bayrak and Deniz Ozonur (2014) applied permutation version of Pages test to a RCBD. They took this approach because the normality approximation which is used for the Page test is not adequate for small sample sizes. Their algorithm for calculating p-value using the Permutation approach is outlined below:

1. Compute Pages test statistic in Eq. (2.1) for the original data.

2. Choose permutation resample from the data without replacement in a way that is consistent with the null hypothesis of the test and with the study design. By the same way, generate artificial sample a large number of times (say N times).

3. For each of these replicated samples, recalculate Pages test statistic in Eq. (2.1).

4. Let these recalculated Page test statistic values be $L_1^*, L_2^*, \cdots L_N^*$. So the permutation distribution of the test statistic is obtained.

5. Calculate the p-values as: $P - value = \dfrac{\#(L_i^* > L)}{N}$, $i = 1, 2, \cdots, N$. We reject the null hypothesis if the $p - value < \alpha$, otherwise we do not reject.

They compared the permutation version of Pages to Pages test, Modified Pages test and Hollanders test and found out that the permutation version was more powerful than the other test when the sample size and the number of blocks is small but the permutation version and the Hollander test had almost the same powers when the sample size and the number of block increases.

2.8. Magel and Terpstra

Magel and Terpsta (2003) developed a new nonparametric test for nondecreasing ordered alternative when there is uncencored data. Their test was designed to help alleviate some of the problems with high powers of a test when the assumed ordering among the parameters (e.g. nondecreasing) is incorrect. Magel and Terpstra believed that an ordered alternative test should possess the following three properties:

1. The power of the test should be approximately equal to the stated significance level when H_0 is true,
2. The test should have higher power than a general alternative test when H_1 is true, and
3. The test should have low power for any alternative that does not fit the profile given in H_1.

Now to test the null hypothesis in Eq. (1.1) against the alternative hypothesis in Eq. (1.2), the test statistic that was used is:

$$T = \sum_{i_1=1}^{n_1} \cdots \sum_{i_k=1}^{n_k} I(X_{1i_1} \leq X_{2i_2} \leq \cdots \leq X_{ki_k}) \tag{2.22}$$

where the indicator function in the above equation is one when there is at least one strict inequality. Under H_0, the test statistic, T, has an asymptotic normal distribution with mean and variance,

$$E(T) = \frac{n^*}{k!} \tag{2.23}$$

and

$$V(T) = n^* \left(\frac{1}{k!}\right)\left(1 - \frac{1}{k!}\right) + \sum_{i=1}^{k-1} v_i^2 \tag{2.24}$$

respectively, where

$$V_i^2 = \sum_{1 \leq l_1 < \cdots < l_i \leq k} n^* \left[\prod_{s=1}^{k} (n_s - 1)^{I(s \neq l_1) \cdots I(s \neq l_i)}\right] \left[\frac{C_{k-l_i}^{2(k-l_i)}}{(2k-i)!} \prod_{s=1}^{i} C_{l_s - l_{s-1} - 1}^{2(l_s - l_{s-1} - 1)} - \frac{1}{(k!)^2}\right].$$

The standardized value of T, Z_T, is given below:

$$Z_T = \frac{T - E(T)}{V(T)}. \tag{2.25}$$

We reject H_0 if $Z_T > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution. Under H_0, the statistic Z_H has approximately standard normal distribution. Magel and Terpstra noted a deficiency for JT and its modified version, that is, these tests frequently detected a trend when, in fact, one does not exist. However their proposed test does not suffer from this problem. Their test offered a built in protection for situations where a researcher falsely assumes an a priori increasing relationship. Lastly, their test performed better at satisfying P1-P3 simultaneously as compared to JT and its modified version.

2.9. Neuhauser, Liu and Hothorn

Neuhauser, Liu and Hothorn (1998) proposed a test statistics for nondecreasing order alternative by modifying Jonckheere-Terpstra's (1954, and 1952) test statistic in Eq. (2.5). The modification of the JT considered the distance between treatments. The test statistic for modified JT, T_{MJ}, can is written below:

$$T_{MJ} = \sum_{i<j} (j-i) U_{ij}, \tag{2.26}$$

where U_{ij} is the number of pairs of observation (X_{ia}, X_{ib}) in which $X_{ia} < X_{ib}$, X_{ia} is the ath observation in the ith treatment sample, $a = 1, 2, \cdots, n_i$ and X_{ib} is the bth observation in the jth treatment sample, $b = 1, 2, \cdots, n_j$. Under the null hypothesis, H_0, the expected values and variances can be calculated using the following equations (Tyron and Hettmansperger, 1973),

$$E(U_{ij}) = \frac{1}{2} n_i n_j, \ \forall i \neq j, \tag{2.27}$$

$$\begin{aligned}
Var(U_{ij}) &= \frac{1}{12} n_i n_j (n_i + n_j + 1), \ \forall i \neq j, \\
Cov(U_{ij}, U_{il}) &= Cov(U_{ji}, U_{li}) = \frac{1}{12} n_i n_j n_l, \text{ if all } i, j, l \text{ are different}, \\
Cov(U_{ij}, U_{li}) &= Cov(U_{ji}, U_{il}) = -\frac{1}{12} n_i n_j n_l, \text{ if all } i, j, l \text{ are different}, \\
Cov(U_{ij}, U_{lm}) &= 0 \text{ if all } i, j, l, m \text{ are different}
\end{aligned} \tag{2.28}$$

They found that their proposed test statistic has an actual type I error closer to the nominal level and is substantially more powerful than the JT in small sample sizes.

We will now present some nonparametric tests for nondecreasing order alternative in a mixed design. Not enough research has been done in this area of mixed design for nondecreasing alternatives.

2.10. Dubnicka, Blair and Hettmansperger

Dubnicka, Blair and Hettmansperger (2002) developed a rank-based procedure for parameter estimation and hypothesis testing when the data is a mixture of paired observations and independent samples to make inferences about difference in the mean responses. Their rank-based procedure used both types of data by combining the Wilcoxon signed-rank statistic and the Wilcoxon-Mann-Whitney statistics. To estimate the difference between treatments, and to make inferences about the parameter Δ, that is whether the new treatment is better than the old treatment. They tested

$$H_0 : \Delta = 0 \tag{2.29}$$

against

$$Ha : \Delta > 0. \tag{2.30}$$

The test statistic for the paired data, Wilcoxon signed-rank statistics, and for the two independent samples, the Wilcoxon-Mann-Whitney statistic is,

$$\begin{aligned} T^{+} &= S^{+}(\Delta) + U^{+}(\Delta) \\ &= \sum\nolimits_{i \le j} \sum I\left(\frac{D_i + D_j}{2} > \Delta\right) + \sum_{i=1}^{n_1} \sum_{j=1}^{n_2} I\big[(T_i - C_j) > \Delta\big] \\ &= \sum_{i=1}^{n} R\big(|D_i|\big) I\big(D_i > 0\big) + \sum_{j=1}^{n_1} R_j - \frac{n_1(n_1+1}{2} \end{aligned} \tag{2.31}$$

where $R(|D_i|)$ is the rank of $|D_i|$ among $|D_1|, |D_2|, \cdots, |D_n|$, R_j is the rank of T_j in the combined independent samples, T_i and C_j are observations from the two independent samples i and j respectively, and $I(A) = \begin{cases} 1 & \textit{if event } A \textit{ occurs} \\ 0 & \textit{otherwise.} \end{cases}$

Dubnicka, Blair and Hettmansperger (2002) test is asymptotic normal with mean and variance,

$$E_0T^+(0) = \frac{n(n+1)}{4} + \frac{n_1n_2}{2} \tag{2.32}$$

and

$$Var_0T^+(0) = \frac{n(n+1)(2n+1)}{24} + \frac{n_1n_2(n_1+n_2+1)}{12} \tag{2.33}$$

respectively. The standard test statistics of $T+$, Z_T, can be written as

$$Z_T = \frac{T^+(0) - E_0T^+(0)}{\sqrt{Var_0T^+(0)}} \tag{2.34}$$

Thus with a specified level of significance α,we reject $H_0 : \Delta = 0$ in favor of $H_1 : \Delta > 0$, if $Z_T \geq Z_\alpha$; otherwise we do not reject where Z_α is the $(1-\alpha)100$ percentile of the standard normal distribution. Under H_0, the statistic Z_T has approximately a standard normal distribution.

2.11. Magel, Terpstra, and Wen

Magel, Terpstra, and Wen (2009) also developed a test for mixed design (a combination of CRD and RCBD) for nondecreasing order alternative. To test the null hypothesis in Eq. (1.1) against the ordered alternative in Eq. (1.2), they proposed two versions of test for mixed design. Both versions use Page's and the Jonckheere-Terpstra test.

Their first proposed test for the mixed design, Z_{comb}, is given below:

$$Z_{comb} = \frac{Z_{page} + Z_{JT}}{\sqrt{2}}, \tag{2.35}$$

where the Z_{page} is the standardized version of Page's test given in (2.4) and Z_{JT} is the standard version of the JT test given in (2.8). Under H_0, the statistic Z_{comb} has asymptotic standard normal distribution since the asymptotic distribution of Z_{page} and Z_{JT} under H_0 are standard normal. We reject H_0 when $Z_{comb} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

Their second proposed test for the mixed design, Z_{combII}, is given below:

$$Z_{combII} = \frac{L + J - E(0)}{\sqrt{Var(0)}} \tag{2.36}$$

where

$$E(0) = \frac{bk(k+1)^2}{4} + \frac{N^2 - \sum_{j=1}^{k} n_j^2}{4}, \tag{2.37}$$

$$Var(0) = \frac{bk^2(k+1)(k^2-1)}{144} + \frac{N^2(2N+3) - \sum_{j=1}^{k} n_j^2(2n_j+3)}{72}. \tag{2.38}$$

Here, the L and J are Page's test statistics and the JT test statistics given in (2.1) and (2.5) of this chapter respectively. In their second proposed test, Page's test statistic and the JT test statistic were added first and then standardized while in their first proposed test, they were standardized first and then added. Under H_0, the statistic Z_{combII} also has asymptotic normal distribution. We reject H_0 when $Z_{combII} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution. The power for Z_{combII} dropped as the equal sample size, n, for each treatment in the CRD portion increases, and then the power increased again as the sample size of the JT continued to increase. When more weight was given to the JT test in Z_{combII}, the first proposed test version, Z_{comb}, was better. When more weight was given to the Pages test in Z_{combII}, then the second proposed test, Z_{combII}, was better.

2.12. Mathisen

Mathisen (2011) developed a mixed design (a combination of RCBD and BIBD) for nondecreasing order alternative. Mathisen (2011) focused on three, four and five treatments with various sample sizes and number of blocks. Mathisen's tests involved a combination of Pages (1963) test statistics for RCBD and Ndungu's (2011) test statistic for the BIBD. Mathisen proposed two version of test for the mixed design. The null hypothesis is the same as Eq. (1.1) versus the ordered alternative in Eq. (1.2).

The first version of their proposed test (Standardized First) for the mixed design, T_1^*, is given below:

$$T_1^* = \frac{Z_{page} + Z_{Ndungu}}{\sqrt{2}}, \tag{2.39}$$

where Z_{page} and Z_{Ndungu} are the standardized test given in Eq. (2.4) and (2.15) respectively. Under Ho, T_1^*, has asymptotic standard normal distribution since Z_{page} and Z_{Ndungu} have asymptotic standard normal distribution when H_0 is true. We reject H_0 when $T_1^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

The second version of their proposed test (Standardized Last) for the mixed design, T_2^*, is given below:

$$\textit{Standardized Last}: T_2^* = \frac{(L+M)-(E(L)+E(M))}{\sqrt{Var(L)+Var(M)}}, \tag{2.40}$$

Here, L and M are Page's test statistic and Ndungu test statistic given in (2.1) and (2.14) respectively. $E(L)$ and $V(L)$ are the mean and variance of the Page's test statistic. $E(M)$ and $V(M)$ are the mean and variance of the Ndungu's test statistic. Under Ho, T_2^*, has asymptotic standard normal distribution. We reject H_0 when $T_2^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

Mathisen (2011) concluded that in cases where the number of blocks for the two designs are the same with fewer number of treatments per block, standardized last performed better than standardized first. However, standardized first performed better when there were more incomplete blocks and Standardized last performed better when there were more complete block in most scenarios.

3. PROPOSED TESTS FOR RCBD AND BIBD

In this chapter, we propose four tests that will be used to test for nondecreasing order alternative separately in a RCBD or BIBD designs. Three of these tests are modification of the JT and MJT test statistics mentioned in Chapter 2. The other test will use the Alvo and Cabilio's test in Chapter 2 when we have RCBD or BIBD design. We will then propose our new tests for the mixed design in Chapter 4 in two different cases. The nondecreasing order alternative is tested using the following hypotheses throughout this chapter.

$$H_0 : \tau_1 = \tau_2 = \cdots = \tau_k \tag{3.1}$$

against the ordered alternative

$$H_1 : \tau_1 \leq \tau_2 \leq \cdots \leq \tau_k$$

with at least one of the inequalities is strict, where τ_i is a location parameter of the ith sample.

3.1. Jonckheere-Terpstra for RCBD

As mentioned in Chapter 2, JT test is used for testing nondecreasing order alternative in a completely randomized design. We seek to modify the application JT to a RCBD design by using row comparison and using Mann-Whitney (1947) U_{ij} to do the calculation. The regular JT compares observations in all pairs of samples. That is each observation in the first sample in the pair of samples with each observation in the second sample in the pair, and if the observation from the first sample is less than the observation in the second sample, a score of 1 is recorded and 0 otherwise. But since we are doing row comparison for RCBD design, we go through each block and compare the k treatments in that block and sum the overall JT test statistic over all the block. As mentioned in Chapter 2, we will use equation (2.5) and let's rename it as,

$$JT_{RCBD} = \sum_{a=1}^{b} \sum_{i<j} U_{aij}, \tag{3.2}$$

where U_{aij} is the number of pairs of observation (X_{ai}, X_{aj}) in which $X_{ai} < X_{aj}$, X_{ai} is the ith treatment sample in block a, X_{aj} is the jth treatment sample in block a, $a = 1, 2, \cdots b$ and b is the total number of blocks. $U_{aij} = 1$ if $X_{ai} < X_{aj}$, otherwise 0. Under the null hypothesis, H_0, the test statistic JT_{RCBD} will follow an asymptotic normal distribution with mean, $E(JT_{RCBD})$, and variance, $Var(JT_{RCBD})$, because JT already proved it, where $E(JT_{RCBD})$ and $Var(JT_{RCBD})$ are the theoretical mean and variance respectively.

3.1.1. Expected Value, $E(JT_{RCBD})$ and Variance, $Var(JT_{RCBD})$

Since we are doing a modification of the original JT test statistic by applying it to a RCBD design, then the expected value and variance has to be calculated in order to calculate the standardized test statistics. We will use the row comparison method to calculate the test statistics, JT_{RCBD} for each block.

3.1.2. Example: Three Treatments

For three treatments RCBD design, the table below shows the different arrangements we can have.

Table 3.1. Three Treatments Possible Arrangements for RCBD

Block	Trt1	Trt2	Trt3
1	1	2	3
2	1	3	2
3	2	1	3
4	2	3	1
5	3	1	2
6	3	2	1

We can start by finding the U_{aij}'s for each block by comparing the pairs treatments values per block, that is, for each block if Trt1 is less than Trt2, then $U_{a12} = 1$, else $U_{a12} = 0$. This process is continued until all the U_{aij}'s are found for each block, where $i < j$ and $i, j = 1, 2, 3$. In this case, since we have 3 treatments, then, we have six unique blocks ($3! = 6$). For any k treatments, the number of unique blocks is equal to $k!$. Below are the calculations of U_{aij}'s for each block in Table 3.1.

$$JT_{RCBD} = \sum_{a=1}^{6}(U_{a12} + U_{a13} + U_{a23})$$

For Block 1: $U_{112} = 1, U_{113} = 1, U_{123} = 1$ *so* , $JT_{RCBD \text{ for block } 1} = 3$

For Block 2: $U_{212} = 1, U_{213} = 1, U_{223} = 0$ *so* , $JT_{RCBD \text{ for block } 2} = 2$

For Block 3: $U_{312} = 0, U_{313} = 1, U_{323} = 1$ *so* , $JT_{RCBD \text{ for block } 3} = 2$

For Block 4: $U_{412} = 1, U_{413} = 0, U_{423} = 0$ *so* , $JT_{RCBD \text{ for block } 4} = 1$

For Block 5: $U_{512} = 0, U_{513} = 0, U_{523} = 1$ *so* , $JT_{RCBD \text{ for block } 5} = 1$

For Block 6: $U_{612} = 0, U_{613} = 0, U_{623} = 0$ *so* , $JT_{RCBD \text{ for block } 6} = 0$

$$JT_{RCBD} = \sum_{a=1}^{6} (U_{a12} + U_{a13} + U_{a23}) = 3 + 2 + 2 + 1 + 1 + 0 = 10$$

The expected value and variance of JT_{RCBD} for three treatments can be calculated as

$$E(JT_{RCBD}) = \frac{3+2+2+1+1+0}{6} = 1.5 \text{ , } and\ Var(JT_{RCBD}) = 0.9167$$

The expected value and variance for three treatments with 6 unique blocks in a RCBD design are 1.5 and 0.9167 respectively. Therefore, if an experiment has 20 blocks for an RCBD design, the expected value and variance are:
$E(JT_{RCBD}) = 1.5 \cdot 20 = 30$ and $Var(JT_{RCBD}) = 0.9167 \cdot 15 = 13.7505$.
Table 3.2 provides a summary of computed expected values and variances outlined in Appendix A.

Table 3.2. Number of Unique Blocks, Expected Values and Variances

Cases	Number of Unique Blocks	$E(JT_{RCBD})$	$Var(JT_{RCBD})$
3 treatments	6	1.5	0.9167
4 treatments	24	3	2.1667
5 treatments	120	5	4.1667

We can also find the mean and variance using Neuhauser's formula for calculating the mean given in (2.27) and variance given in (2.28) for any k treatments in an RCBD design. We will illustrate how to calculate the mean and variance for three treatments with only one block (note: the sample size for each treatment is 1, that is $n_1 = 1$, $n_2 = 1$, and $n_3 = 1$). The JT test statistic for one block with three treatments is given as

$$JT_{RCBD} = U_{a12} + U_{a13} + U_{a23}$$

Using Eq. (2.27)

$$\begin{aligned}
E(JT_{RCBD}) &= E(U_{a12} + U_{a13} + U_{a23}) = E(U_{a12}) + E(U_{a13}) + E(U_{a23}) \\
E(JT_{RCBD}) &= \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{RCBD}) &= \frac{3}{2} = 1.5
\end{aligned}$$

Using Eq. (2.28)

$$\begin{aligned}
Var(JT_{RCBD}) &= Var(U_{a12} + U_{a13} + U_{a23}) \\
Var(JT_{RCBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{a23}) + 2Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 2Cov(U_{a13}, U_{a23}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1) \\
&\quad + 2 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 2 \times \frac{1}{12}n_1n_2n_3 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&\quad + 2 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 2 \times \frac{1}{12}(1)(1)(1) \\
Var(JT_{RCBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}$$

The expected value and variance are $\frac{3}{2}$ and $\frac{11}{12}$ respectively, which is the same values obtained when we used the row comparison calculation. Therefore, if an experiment has b blocks, then the expected value $= \frac{3}{2}b$ and the variance $= \frac{11}{12}b$. The expected value and variance calculation for four and five treatment for RCBD using Neuhauser's formula can be found in Appendix A.

The standardized test statistics for JT_{RCBD}, $Z_{JT_{RCBD}}$, can be written as:

$$Z_{JT_{RCBD}} = \frac{JT_{RCBD} - E(JT_{RCBD})}{\sqrt{Var(JT_{RCBD})}}. \tag{3.3}$$

The statistic, $Z_{JT_{RCBD}}$ has an asymptotic standard normal distribution under H_0. We reject H_0 when $Z_{JT_{RCBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

3.1.3. Example 3.1

Different types of farm machinery have different effect on the compaction of soil and thus may affect yields differently. The table below shows yield data from a randomized complete block design in which four different types of tractors were used in tilling the soil. The blocking factor is location of the fields. Assume we anticipate that the yields will increase as we go from treatment 1 to 4.

Table 3.3. Yield Data for RCBD with Four Treatments and Six Blocks

Block	Treatments			
	1	2	3	4
1	128	122	207	120
2	125	137	120	132
3	160	201	199	181
4	142	177	164	139
5	157	181	155	177
6	179	138	218	195

To test H_0 against H_1 as in Eq. (3.1), we will start by finding all the U_{aij}'s for each block then sum it up to get the test statistic JT_{RCBD}. Table 3.4 below has all the U_{aij}'s for each block along with the calculated test statistic, JT_{RCBD} for each block.

Table 3.4. U_{aij}'s and JT_{RCBD} Calculations for Example 3.1

Block	Treatments				U_{aij}'s						JT_{RCBD}
	1	2	3	4	U_{a12}	U_{a13}	U_{14}	U_{a23}	U_{a24}	U_{a34}	
1	128	122	207	120	0	1	0	1	0	0	2
2	125	137	168	190	1	1	1	1	1	1	6
3	160	201	199	181	1	1	1	0	0	0	3
4	142	177	164	139	1	1	0	0	0	0	2
5	157	181	166	201	1	1	1	1	1	1	6
6	179	188	200	218	1	1	1	1	1	1	6
										Sum	25

Now since we have 4 treatments with 6 blocks, we can calculate the expected value and variance using Table 3.2 by multiplying the parameters by 6 (which is the total number of blocks for example 3.1). The theoretical mean, $E(JT_{RCBD})$ and variance, $Var(JT_{RCBD})$ can be calculated as:

$$E(JT_{RCBD}) = 3 \cdot 6 = 18 \text{ , } and\ Var(JT_{RCBD}) = 2.1667 \cdot 6 = 13.0002$$

The test statistics, $JT_{RCBD} = 2+6+3+2+6+6 = 25$. The standardized test statistics, $Z_{JT_{RCBD}}$, given in Eq. (3.3), can be calculated as:

$$Z_{JT_{RCBD}} = \frac{25-18}{\sqrt{13.0002}} = 1.94.$$

Since, the p-value=0.02619 which is less than 5% level of significance, we reject the null hypothesis, therefore there is enough evidence to support the claim that, the yield will increase as we go from treatment 1 to 4.

3.2. Jonckheere-Terpstra for BIBD

The same procedure explained in section 3.1 will be used for the calculation of the JT test statistics for the balanced incomplete block design (JT_{BIBD}). But since the balanced incomplete block design will have some missing observations in each block, 0 is assigned to the U_{aij} when either treatment i or treatment j or both are missing within a block. The test statistics is defined as follows:

$$JT_{BIBD} = \sum_{a=1}^{b} \sum_{i<j} U_{aij}, \tag{3.4}$$

where U_{aij} is the number of pairs of observation (X_{ai}, X_{aj}) in which $X_{ai} < X_{aj}$, X_{ai} is the ith treatment sample in block a, X_{aj} is the jth treatment sample in block a, $a = 1, 2, \cdots b$ and b is the total number of blocks. $U_{aij} = 1$ if $X_{ai} < X_{aj}$, otherwise 0. Under the null hypothesis, H_0, the test statistic JT_{BIBD} will follow an asymptotic normal distribution with mean, $E(JT_{BIBD})$, and variance, $V(JT_{BIBD})$, because we know JT test statistic has an asymptotic standard normal, where $E(JT_{BIBD})$ and $Var(JT_{BIBD})$ are the expected value and variance respectively.

3.2.1. Expected Value, $E(JT_{BIBD})$ and Variance, $Var(JT_{BIBD})$

Finding the general formula for the expected value and variance of the different cases in a BIBD design can be very challenging. For each case of k treatments with k_i appearing at a time, there are $\binom{k}{k_i}$. The $\binom{k}{k_i}$ is the minimum number of blocks required to form a BIBD. These are repeated to generate the required number of blocks in an experiment.

3.2.2. Example: Three Treatment with Two Treatments Per Block (or 1 Missing Observation Per Block)

For $k = 3$ and $k_i = 2$, there are $\binom{3}{2} = 3$ unique number of blocks that make the BIBD. The following tables shows how the different arrangements we can have with their corresponding U_{aij}'s, the tests statistics JT_{BIBD}, expected values and variances using the row comparison method.

Table 3.5. The Expected Values and Variance for Three Treatments with Two Observations Per Block

Block	Combination	Treatments			JT_{BIBD}	$E(JT_{BIBD})$	$Var(JT_{BIBD})$
		1	2	3			
1	1	1	2		1	0.5	0.25
	2	2	1		0		
2	1	1		2	1	0.5	0.25
	2	2		1	0		
3	1		1	2	1	0.5	0.25
	2		2	1	0		

The expected value and variance for the 3 blocks are $E(JT_{BIBD}) = \dfrac{0.5 + 0.5 + 0.5}{3} = 0.5$ and $Var(JT_{BIBD}) = \dfrac{0.25 + 0.25 + 0.25}{3} = 0.25$ respectively. Therefore, if an experiment is using 15 blocks for three treatments with two observations per block (or 1 missing observation per block), then the expected value and variance are:

$$E(JT_{BIBD}) = 0.5 \cdot 15 = 7.5 \text{ , } and\, Var(JT_{RCBD}) = 0.25 \cdot 15 = 3.75.$$

We can also use the Neuhauser's formula for calculating the expected value and variance given in Eq. (2.27) and Eq. (2.28) respectively. We will illustrate the expected value and variance calculation for three treatments with two observations per block (or 1 missing observation per block) and compare it to the one above. The calculation will be performed for one block, so the sample size for each of the three treatments is $n_1 = 1$, $n_2 = 1$, and $n_3 = 1$, but the sample size becomes zero if that treatment is missing. For example, let's say treatment 2 is missing, so the sample size for treatment 2 becomes zero, that is $n_2 = 0$. Below is the calculation for the expected mean and variance using Neuhauser's formula. The JT_{BIBD} test statistic for one block is given as:

$$JT_{BIBD} = U_{a12} + U_{a13} + U_{a23}.$$

The expected value can be written as:

$$E(JT_{BIBD}) = E(U_{a12}) + E(U_{a13}) + E(U_{a23})$$

Using Eq. (2.27)

When treatment 1 is missing.

$$JT_{BIBD} = U_{a23}$$
$$E(JT_{BIBD}) = E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = \frac{1}{2}$$

When treatment 2 is missing.

$$JT_{BIBD} = U_{a13}$$
$$E(JT_{BIBD}) = E(U_{a13}) = \frac{1}{2}n_1n_3 = \frac{1}{2}(1)(1) = \frac{1}{2}$$

When treatment 3 is missing.

$$JT_{BIBD} = U_{a12}$$
$$E(JT_{BIBD}) = E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = \frac{1}{2}$$

Therefore, the overall expected value for three treatment with two observations per block (or one missing observation per block) is:

$$E(JT_{BIBD}) = \frac{E(U_{a13}) + E(U_{a12}) + E(U_{a12})}{3} = \frac{1/2 + 1/2 + 1/2}{3} = \frac{1}{2} = 0.5$$

The variance can be written as:

$$Var(JT_{RCBD}) = Var(U_{a12} + U_{a13} + U_{a23})$$
$$Var(JT_{RCBD}) = Var(U_{a12}) + Var(U_{a13}) + Var(U_{a23}) + 2Cov(U_{a12}, U_{a13})$$
$$+ 2Cov(U_{a12}, U_{a23}) + 2Cov(U_{a13}, U_{a23})$$

When treatment 1 is missing.

$$JT_{BIBD} = U_{a23}$$
$$Var(JT_{BIBD}) = Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2+n_3+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = \frac{1}{4}$$

When treatment 2 is missing.

$$JT_{BIBD} = U_{a13}$$
$$Var(JT_{BIBD}) = Var(U_{a13}) = \frac{1}{12}n_1n_3(n_1+n_3+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = \frac{1}{4}$$

When treatment 3 is missing.

$$JT_{BIBD} = U_{a12}$$
$$Var(JT_{BIBD}) = Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1+n_2+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = \frac{1}{4}$$

Therefore, the overall variance for three treatment with two observation per block (or one missing observation per block) is:

$$Var(JT_{BIBD}) = \frac{Var(U_{a23}) + Var(U_{a13}) + Var(U_{a12})}{3} = \frac{1/4 + 1/4 + 1/4}{3} = \frac{1}{4} = 0.25$$

So if we have b number blocks in an experiment, then the expected value, $E(JT_{BIBD}) = \frac{1}{2}b$, and the variance, $Var(JT_{BIBD}) = \frac{1}{4}b$. We can see that the expected value and variance for both methods (row comparison calculation and using Neuhauser's formula) are the same.

The standardized test statistics for JT_{BIBD}, $Z_{JT_{BIBD}}$, can be written as:

$$Z_{JT_{BIBD}} = \frac{JT_{BIBD} - E(JT_{BIBD})}{\sqrt{Var(JT_{BIBD})}}. \tag{3.5}$$

The statistic, $Z_{JT_{BIBD}}$ has an asymptotic standard normal distribution under H_0. We reject H_0 when $Z_{JT_{BIBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

3.3. Modified JT for RCBD

As mentioned in Chapter 2 Modified Jonckeere-Terpstra (MJT) was first developed by Nehuhauser (1998) by adding weights to the regular Jonckheere-Terpstra test in a completely

Table 3.6. Number of Unique Blocks, Expected Values and Variances for JT in Balanced Incomplete Block Design

Cases	Number of Unique Blocks	$E(JT_{BIBD})$	$Var(JT_{BIBD})$
3 treatments with 2 observation per block	3	0.5	0.25
4 treatments with 2 observation per block	6	0.5	0.25
4 treatments with 3 observation per block	4	1.5	0.9167
5 treatments with 2 observation per block	10	0.5	0.25
5 treatments with 3 observation per block	10	1.5	0.9167
5 treatments with 4 observation per block	5	3	2.1667

randomized design. The weight is the distance between the treatment groups. Modified JT is more powerful than regular JT when we have small sample sizes. We will modify MJT test statistic to apply it to a randomized complete block design in a similar manner explained in section 3.1 (using row comparison). The test statistic for the Modified JT can be written as:

$$MJT_{RCBD} = \sum_{a=1}^{b} \sum_{i<j} (j-i) U_{aij}, \tag{3.6}$$

where U_{aij} is the number of pairs of observation (X_{ai}, X_{aj}) in which $X_{ai} < X_{aj}$, X_{ai} is the ith treatment sample in block a, X_{aj} is the jth treatment sample in block a, $a = 1, 2, \cdots b$ and b is the total number of blocks. $U_{aij} = 1$ if $X_{ai} < X_{aj}$, otherwise 0. Under the null hypothesis, H_0, the test statistic MJT_{RCBD} follows an asymptotic normal distribution with mean, $E(MJT_{RCBD})$, and variance, $Var(MJT_{RCBD})$ because we know that MJT test statistic by Neuhauser has an asymptotic normal distribution, where $E(MJT_{RCBD})$ and $Var(MJT_{RCBD})$ are the expected value and variance respectively. The calculations for the expected values and variances can be found in Appendix A. The standardized test statistics for MJT is:

$$Z_{MJT_{RCBD}} = \frac{MJT_{RCBD} - E(MJT_{RCBD})}{\sqrt{Var(MJT_{RCBD})}}. \tag{3.7}$$

The statistic, $Z_{MJT_{RCBD}}$ has an asymptotic standard normal distribution under H_0. We reject H_0 when $Z_{MJT_{RCBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution. The table below shows the number or unique block together with the expected values and variances for MJT in a RCBD design. Therefore, if an experiment has b number of blocks, the expected values and variances in Table 3.7 will be multiplied by b to get the theoretical means and variances to be used in the calculation of the standardized test statistics, $Z_{MJT_{RCBD}}$.

Table 3.7. Number of Unique Blocks, Expected Values and Variances for MJT_{RCBD}

Cases	Number of Unique Blocks	$E(MJT_{RCBD})$	$Var(MJT_{RCBD})$
3 treatments	6	2	2
4 treatments	24	5	8.3333
5 treatments	120	10	25

We will illustrate how to use the Neuhauser's formula for expected value and variance for MJT in an RCBD design with four treatments for for one block, so the sample sizes for each treatment is one (that is $n_1 = 1, n_2 = 1, n_3 = 1,$ and $n_4 = 1$).

$$MJT_{RCBD} = U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34}$$

Using Eq. (2.27)

$$E(MJT_{RCBD}) = E(U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34})$$

$$\begin{aligned}
E(MJT_{RCBD}) &= E(U_{a12}) + 2E(U_{a13}) + 3E(U_{a14}) + E(U_{a23}) + 2E(U_{a24}) + E(U_{34}) \\
&= \frac{1}{2}n_1n_2 + 2 \times \frac{1}{2}n_1n_3 + 3 \times \frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_3 + 2 \times \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{RCBD}) &= \frac{10}{2} = 5
\end{aligned}$$

Using Eq. (2.28)

$$Var(MJT_{RCBD}) = Var(U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34})$$

$$\begin{aligned}
Var(MJT_{RCBD}) = {} & Var(U_{a12}) + 4Var(U_{a13}) + 9Var(U_{a14}) + Var(U_{a23}) + 4Var(U_{a24}) \\
& + Var(U_{a34}) + 2Cov(U_{a12}, 2U_{a13}) + 2Cov(U_{a12}, 3U_{a14}) + 2Cov(U_{a12}, U_{a23}) \\
& + 2Cov(U_{a12}, 2U_{a24}) + 2Cov(U_{a12}, U_{a34}) + 2Cov(2U_{a13}, 3U_{a14}) \\
& + 2Cov(2U_{a13}, U_{a23}) + 2Cov(2U_{a13}, 2U_{a24}) + 2Cov(2U_{a13}, U_{a34}) \\
& + 2Cov(3U_{a14}, U_{a23}) + 2Cov(3U_{a14}, 2U_{a24}) + 2Cov(3U_{a14}, U_{a34}) \\
& + 2Cov(U_{a23}, 2U_{a24}) + 2Cov(U_{a23}, U_{a34}) + 2Cov(2U_{a24}, U_{a34})
\end{aligned}$$

$$
\begin{aligned}
Var(MJT_{RCBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + 9Var(U_{a14}) + Var(U_{a23}) + 4Var(U_{a24}) \\
&+ Var(U_{a34}) + 4Cov(U_{a12}, U_{a13}) + 6Cov(U_{a12}, U_{a14}) + 2Cov(U_{a12}, U_{a23}) \\
&+ 4Cov(U_{a12}, U_{a24}) + 2Cov(U_{a12}, U_{a34}) + 12Cov(U_{a13}, U_{a14}) \\
&+ 4Cov(U_{a13}, U_{a23}) + 8Cov(U_{a13}, U_{a24}) + 4Cov(U_{a13}, U_{a34}) \\
&+ 6Cov(3U_{a14}, U_{a23}) + 12Cov(U_{a14}, U_{a24}) + 6Cov(U_{a14}, U_{a34}) \\
&+ 4Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) + 4Cov(U_{a24}, U_{a34}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + 9 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) \\
&+ \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + 4 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + 4 \times \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&+ 4 \times \frac{1}{12}n_1n_2n_3 + 6 \times \frac{1}{12}n_1n_2n_4 - 2 \times \frac{1}{12}n_1n_2n_3 - 4 \times \frac{1}{12}n_1n_2n_4 \\
&+ 2 \times 0 + 12 \times \frac{1}{12}n_1n_3n_4 + 4 \times \frac{1}{12}n_1n_2n_3 + 8 \times 0 - 4 \times \frac{1}{12}n_1n_3n_4 + 6 \times 0 \\
&+ 12 \times \frac{1}{12}n_1n_2n_4 + 6 \times \frac{1}{12}n_1n_3n_4 + 4 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 \\
&+ 4 \times \frac{1}{12}n_2n_3n_4 \\
Var(MJT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + 4 \times \frac{1}{12}(1)(1)(1 + 1 + 1) + 9 \times \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&+ \frac{1}{12}(1)(1)(1 + 1 + 1) + 4 \times \frac{1}{12}(1)(1)(1 + 1 + 1) + 4 \times \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&+ 4 \times \frac{1}{12}(1)(1)(1) + 6 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) - 4 \times \frac{1}{12}(1)(1)(1) \\
&+ 2 \times 0 + 12 \times \frac{1}{12}(1)(1)(1) + 4 \times \frac{1}{12}(1)(1)(1) + 8 \times 0 - 4 \times \frac{1}{12}(1)(1)(1) + 6 \times 0 \\
&+ 12 \times \frac{1}{12}(1)(1)(1) + 6 \times \frac{1}{12}(1)(1)(1) + 4 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) \\
&+ 4 \times \frac{1}{12}(1)(1)(1) \\
Var(MJT_{RCBD}) &= \frac{100}{12} = \frac{25}{3} \approx 8.3333
\end{aligned}
$$

Therefore, if an experiment with four treatments has b number of blocks, then the expected value will be $E(MJT_{RCBD}) = 5b$ and the variance will be $Var(MJT_{RCBD}) = \frac{25}{3}b$ or $8.3333b$.

3.3.1. Example 3.1 Recalled

Let say we want to rework example 3.1 using Modified JT for the RCBD. Table 3.8 below shows the $(j-i)U_{aij}$'s values and the test statistics. Since we are considering the distances between pairs of treatments per block, we can use Eq.(3.6) to express the Modified JT test statistics as:

$$MJT_{RCBD} = \sum_{a=1}^{6}(U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34})$$
$$MJT_{RCBD} = 3 + 10 + 6 + 3 + 10 + 10 + 10 = 42$$

Table 3.8. U_{aij}'s and MJT_{RCBD} Calculations for Example 3.1

Block	Treatments				$(j-i)U_{aij}$'s						MJT_{RCBD}
	1	2	3	4	U_{a12}	$2U_{a13}$	$3U_{a14}$	U_{a23}	$2U_{a24}$	U_{a34}	
1	128	122	207	120	0	2	0	1	0	0	3
2	125	137	168	190	1	2	3	1	2	1	10
3	160	201	199	181	1	2	3	0	0	0	6
4	142	177	164	139	1	2	0	0	0	0	3
5	157	181	166	201	1	2	3	1	2	1	10
6	179	188	200	218	1	2	3	1	2	1	10
										sum	42

The expected value and variance are $E(MJT_{RCBD}) = 5*6 = 30$ and $Var(MJT_{RCBD}) = 8.3333*6 = 49.9998$ respectively. We can now use Eq. (3.7) to find the standardized test statistics for MJT_{RCBD} below:

$$Z_{MJT_{RCBD}} = \frac{42-30}{\sqrt{49.9998}} = 1.70.$$

We reject H_0 because the p-value = 0.045, which is less than 5% level of significance. We have rejected the Null hypothesis in both cases (using JT and MJT).

3.4. Modified JT for BIBD

The modified JT test statistics for BIBD design is similar to the MJT test statistic for RCBD mentioned in section 3.3. The only difference between the two test statistics is the design in which the test is being applied to. The Modified JT test statistics for BIBD design, can be written as:

$$MJT_{BIBD} = \sum_{a=1}^{b}\sum_{i<j}(j-i)U_{aij}, \tag{3.8}$$

where U_{aij} is the number of pairs of observation (X_{ai}, X_{aj}) in which $X_{ai} < X_{aj}$, X_{ai} is the ith treatment sample in block a, X_{aj} is the jth treatment sample in block a, $a = 1, 2, \cdots b$ and b is the total number of blocks. $U_{aij} = 1$ if $X_{ai} < X_{aj}$, otherwise 0. Under the null hypothesis, H_0, the test statistic MJT_{BIBD} follows an asymptotic normal distribution with mean, $E(MJT_{BIBD})$, and variance, $Var(MJT_{BIBD})$ because we know that MJT test statistic by Neuhauser has an asymptotic normal distribution, where $E(MJT_{BIBD})$ and $Var(MJT_{BIBD})$ are the expected value and variance respectively. The table below displays the summarized values of the expected values and variances under each k treatments with k_i observations per block scenario.

Table 3.9. Number of Unique Blocks, Expected Values and Variances for MJT in Balanced Incomplete Block Design

Cases	Number of Unique Blocks	$E(JT_{BIBD})$	$Var(JT_{BIBD})$
3 treatments with 2 observation per block	3	0.6667	0.5
4 treatments with 2 observation per block	6	0.8333	0.8333
4 treatments with 3 observation per block	4	2.5	3.3333
5 treatments with 2 observation per block	10	1	1.25
5 treatments with 3 observation per block	10	3	5
5 treatments with 4 observation per block	5	6	12.4999

The standardized test statistics for MJT in a BIBD design is:

$$Z_{MJT_{BIBD}} = \frac{MJT_{BIBD} - E(MJT_{BIBD})}{\sqrt{Var(MJT_{BIBD})}}. \tag{3.9}$$

The statistic, $Z_{MJT_{BIBD}}$ has an asymptotic standard normal distribution under H_0. We reject H_0 when $Z_{MJT_{BIBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

3.5. Squared of Modified JT for RCBD

We now consider modifying the Modified JT test statistic by squaring the distance between any pairs of treatments being compared per block in the RCBD design. The test statistics for Squared of Modified JT can be given as:

$$SJT_{RCBD} = \sum_{a=1}^{b} \sum_{i<j} (j-i)^2 U_{aij}, \tag{3.10}$$

where U_{aij} is the number of pairs of observation (X_{ai}, X_{aj}) in which $X_{ai} < X_{aj}$, X_{ai} is the ith treatment sample in block a, X_{aj} is the jth treatment sample in block a, $a = 1, 2, \cdots b$ and b is the total number of blocks. $U_{aij} = 1$ if $X_{ai} < X_{aj}$, otherwise 0. Under the null hypothesis, H_0, the test statistic SJT_{RCBD} has an asymptotic normal distribution with mean, $E(SJT_{RCBD})$, and variance, $Var(SJT_{RCBD})$ because we know that MJT test statistic by Neuhauser has an asymptotic normal distribution, where $E(SJT_{RCBD})$ and $Var(SJT_{RCBD})$ are the expected value and variance respectively. The table below shows the theoretical means and variances for k treatments in a RCBD design with their unique number of block.

Table 3.10. Number of Unique Blocks, Expected Values and Variances for SJT_{RCBD}

Cases	Number of Unique Blocks	$E(SJT_{RCBD})$	$Var(SJT_{RCBD})$
3 treatments	6	3	5.6667
4 treatments	24	10	45
5 treatments	120	25	217.333

To calculate the expected value and variance for any given number of blocks in a k treatment sample, we will just multiply the expected value and variance in Table 3.10 by the total number of blocks, b. The standardized test statistics for SJT_{RCBD}, $Z_{SJT_{RCBD}}$, can be written as:

$$Z_{SJT_{RCBD}} = \frac{SJT_{RCBD} - E(SJT_{RCBD})}{\sqrt{Var(SJT_{RCBD})}}. \tag{3.11}$$

The statistic, $Z_{SJT_{RCBD}}$ has an asymptotic standard normal distribution under H_0. We reject H_0 when $Z_{SJT_{RCBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

3.6. Squared of Modified JT for BIBD

The procedure for calculating the test statistic for the Squared of Modified JT for BIBD design using row comparison is the same procedure as elaborated in section 3.5. However, the expected values and variances are different since the design here is BIBD. The test statistics for Squared of Modified JT can be written as:

$$SJT_{BIBD} = \sum_{a=1}^{b} \sum_{i<j} (j-i)^2 U_{aij}, \tag{3.12}$$

where U_{aij} is the number of pairs of observation (X_{ai}, X_{aj}) in which $X_{ai} < X_{aj}$, X_{ai} is the ith treatment sample in block a, X_{aj} is the jth treatment sample in block a, $a = 1, 2, \cdots b$ and b is the total number of blocks. $U_{aij} = 1$ if $X_{ai} < X_{aj}$, otherwise 0. Under the null hypothesis, H_0, the test statistic SJT_{BIBD} has an asymptotic normal distribution with mean, $E(SJT_{BIBD})$, and variance, $Var(SJT_{BIBD})$ because we know that MJT test statistic by Neuhauser has an asymptotic normal distribution, where $E(SJT_{BIBD})$ and $Var(SJT_{BIBD})$ are the expected value and variance respectively. The table below shows the expected values and variance for k treatment samples with the k_i observations appearing per block.

Table 3.11. Number of Unique Blocks, Expected Values and Variances for SJT in Balanced Incomplete Block Design

Cases	Number of Unique Blocks	$E(JT_{BIBD})$	$Var(JT_{BIBD})$
3 treatments with 2 observation per block	3	1	1.5
4 treatments with 2 observation per block	6	1.6667	4.8333
4 treatments with 3 observation per block	4	5	18.5
5 treatments with 2 observation per block	10	2.5	11.75
5 treatments with 3 observation per block	10	7.5	45.2333
5 treatments with 4 observation per block	5	15	110.4332

To find the expected value and variance for any given number of blocks in a k treatment samples, we will just multiply the expected value and variance in Table 3.11 by the total number of blocks, b.

We will illustrate how to use the Neuhauser's formula for expected value and variance for four treatments with three observations per block (or one missing observations per block). We will perform this calculation for one block, so sample sizes $n_1 = 1, n_2 = 1, n_3 = 1,$ and $n_4 = 1$.

$$SJT_{RCBD} = U_{a12} + 2^2U_{a13} + 3^2U_{a14} + U_{a23} + 2^2U_{a24} + U_{a34}$$

$$SJT_{RCBD} = U_{a12} + 4U_{a13} + 9U_{a14} + U_{a23} + 4U_{a24} + U_{a34}$$

Using Eq. (2.27)

When treatment 1 is missing.

$$SJT_{RCBD} = U_{a23} + 4U_{a24} + U_{a34}$$

$$E(SJT_{RCBD}) = E(U_{a23} + 4U_{a24} + U_{a34})$$

$$E(SJT_{RCBD}) = E(U_{a23}) + 4E(U_{a24}) + E(U_{a34})$$

$$\begin{aligned} E(SJT_{RCBD}) &= \frac{1}{2}n_2n_3 + 4 \times \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\ &= \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{6}{2} = 3 \end{aligned}$$

$$E(SJT_{RCBD}) = 3$$

When treatment 2 is missing.

$$
\begin{aligned}
SJT_{RCBD} &= 4U_{a13} + 9U_{a14} + U_{a34} \\
E(SJT_{RCBD}) &= E(4U_{a13} + 9U_{a14} + U_{a34}) \\
E(SJT_{RCBD}) &= 4E(U_{a13}) + 9E(U_{a14}) + E(U_{a34}) \\
E(SJT_{RCBD}) &= 4 \times \frac{1}{2}n_1n_3 + 9 \times \frac{1}{2}n_1n_4 + \frac{1}{2}n_3n_4 \\
&= 4 \times \frac{1}{2}(1)(1) + 9 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{14}{2} = 7 \\
E(SJT_{RCBD}) &= 7
\end{aligned}
$$

When treatment 3 is missing.

$$
\begin{aligned}
SJT_{RCBD} &= U_{a12} + 9U_{a14} + 4U_{a24} \\
E(SJT_{RCBD}) &= E(U_{a12} + 9U_{a14} + 4U_{a24}) \\
E(SJT_{RCBD}) &= E(U_{a12}) + 9E(U_{a14}) + 4E(U_{a24}) \\
E(SJT_{RCBD}) &= \frac{1}{2}n_1n_2 + 9 \times \frac{1}{2}n_1n_4 + 4 \times \frac{1}{2}n_2n_4 \\
&= \frac{1}{2}(1)(1) + 9 \times \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) = \frac{14}{2} = 7 \\
E(SJT_{RCBD}) &= 7
\end{aligned}
$$

When treatment 4 is missing.

$$
\begin{aligned}
SJT_{RCBD} &= U_{a12} + 4U_{a13} + U_{a23} \\
E(SJT_{RCBD}) &= E(U_{a12} + 4U_{a13} + U_{a23}) \\
E(SJT_{RCBD}) &= E(U_{a12}) + 4E(U_{a13}) + E(U_{a23}) \\
E(SJT_{RCBD}) &= \frac{1}{2}n_1n_2 + 4 \times \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 \\
&= \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + 1 \times \frac{1}{2}(1)(1) = \frac{6}{2} = 3 \\
E(SJT_{RCBD}) &= 3
\end{aligned}
$$

Therefore, the overall mean for four treatments with three observations per block is:

$$E(SJT_{RCBD}) = \frac{3 + 7 + 7 + 3}{4} = 5.$$

Now let's calculate the variance for four treatments with three observations per block using Neuhauser's formula given in Eq. (2.28).

When treatment 1 is missing.

$$
\begin{aligned}
SJT_{RCBD} &= U_{a23} + 4U_{a24} + U_{a34} \\
Var(SJT_{RCBD}) &= Var(U_{a23} + 4U_{a24} + U_{a34}) \\
Var(SJT_{RCBD}) &= Var(U_{a23}) + 16Var(U_{a24}) + Var(U_{a34}) + 8Cov(U_{a23}, U_{a24}) \\
&\quad + 2Cov(U_{a23}, U_{a34}) + 8Cov(U_{a24}, U_{a34}) \\
Var(SJT_{RCBD}) &= \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + 16 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&\quad + 8 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 + 8 \times \frac{1}{12}n_2n_3n_4 \\
Var(SJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 16 \times \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&\quad + 8 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 8 \times \frac{1}{12}(1)(1)(1) = \frac{68}{12} \\
Var(SJT_{RCBD}) &= \frac{68}{12} = \frac{17}{3} = 5.6667
\end{aligned}
$$

When treatment 2 is missing.

$$
\begin{aligned}
SJT_{RCBD} &= 4U_{a13} + 9U_{a14} + U_{a34} \\
Var(SJT_{RCBD}) &= Var(4U_{a13} + 9U_{a14} + U_{a34}) \\
Var(SJT_{RCBD}) &= 16Var(U_{a13}) + 81Var(U_{a14}) + Var(U_{a34}) + 72Cov(U_{a13}, U_{a14}) \\
&\quad + 8Cov(U_{a13}, U_{a34}) + 18Cov(U_{a14}, U_{a34}) \\
Var(SJT_{RCBD}) &= 16 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + 81 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&\quad + 72 \times \frac{1}{12}n_1n_3n_4 - 8 \times \frac{1}{12}n_1n_3n_4 + 18 \times \frac{1}{12}n_1n_3n_4 \\
Var(SJT_{RCBD}) &= 16 \times \frac{1}{12}(1)(1)(1+1+1) + 81 \times \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&\quad + 72 \times \frac{1}{12}(1)(1)(1) - 8 \times \frac{1}{12}(1)(1)(1) + 18 \times \frac{1}{12}(1)(1)(1) = \frac{376}{12} \\
Var(SJT_{RCBD}) &= \frac{376}{12} = \frac{94}{3} \approx 31.3333
\end{aligned}
$$

When treatment 3 is missing.

$$\begin{aligned}
SJT_{RCBD} &= U_{a12} + 9U_{a14} + 4U_{a24} \\
Var(SJT_{RCBD}) &= Var(U_{a12} + 9U_{a14} + 4U_{a24}) \\
Var(SJT_{RCBD}) &= Var(U_{a12}) + 81Var(U_{a14}) + 16Var(U_{a24}) + 18Cov(U_{a12}, U_{a14}) \\
&\quad + 8Cov(U_{a12}, U_{a24}) + 72Cov(U_{a14}, U_{a24}) \\
Var(SJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 81 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + 16 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) \\
&\quad + 18 \times \frac{1}{12}n_1n_2n_4 - 8 \times \frac{1}{12}n_1n_2n_4 + 72 \times \frac{1}{12}n_1n_2n_4 \\
Var(SJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 81 \times \frac{1}{12}(1)(1)(1+1+1) + 16 \times \frac{1}{12}(1)(1)(1+1+1) \\
&\quad + 18 \times \frac{1}{12}(1)(1)(1) - 8 \times \frac{1}{12}(1)(1)(1) + 72 \times \frac{1}{12}(1)(1)(1) = \frac{376}{12} \\
Var(SJT_{RCBD}) &= \frac{376}{12} = \frac{94}{3} \approx 31.3333
\end{aligned}$$

When treatment 4 is missing.

$$\begin{aligned}
SJT_{RCBD} &= U_{a12} + 4U_{a13} + U_{a23} \\
Var(SJT_{RCBD}) &= Var(U_{a12} + 4U_{a13} + U_{a23}) \\
Var(SJT_{RCBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + Var(U_{a23}) + 8Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 8Cov(U_{a13}, U_{a12}) \\
Var(SJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 16 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1) \\
&\quad + 8 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 8 \times \frac{1}{12}n_1n_2n_3 \\
Var(SJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 16 \times \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&\quad + 8 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 8 \times \frac{1}{12}(1)(1)(1) = \frac{68}{12} \\
Var(SJT_{RCBD}) &= \frac{68}{12} = \frac{17}{3} = 5.6667
\end{aligned}$$

Therefore, the overall variance for SJT_{BIBD} for four treatments with three observations per block (or one missing observation per block) is:

$$Var(SJT_{BIBD}) = \frac{17/3 + 94/3 + 94/3 + 17/3}{4} = \frac{74}{4} = 18.5$$

We can verify that, the expected value and variance calculation using the row comparison method and Neuhauser's formula method are the same for four treatments with three observations per block using SJT calculations. Appendix A has the rest of the expected value and variance calculations for RCBD and BIBD.

The standardized test statistics for SJT_{BIBD}, $Z_{SJT_{BIBD}}$, can be written as:

$$Z_{SJT_{BIBD}} = \frac{SJT_{BIBD} - E(SJT_{BIBD})}{\sqrt{Var(SJT_{BIBD})}}. \tag{3.13}$$

The statistic, $Z_{SJT_{BIBD}}$ has an asymptotic standard normal distribution under H_0. We reject H_0 when $Z_{SJT_{BIBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

3.7. Alvo and Cabilio for RCBD and BIBD

The Alvo and Cabilio's test statistics can be used for RCBD, BIBD, IBD, and a mixed design (with a mixture of RCBD, BIBD or IBD). As explained in Chapter 2, Alvo and Cabilio's test is a rank based test and it already uses the idea of row comparison in its calculations. The test statistics for Alvo and Cabilio (1995) is

$$Alvo = \sum_{j=1}^{k}\sum_{i=1}^{b} j\frac{(k+1)}{(k_i+1)}\mu_{ij} \tag{3.14}$$

where

- μ_{ij} is the rank for treatment j or the average rank $\dfrac{(k_i+1)}{2}$ for that missing observation in that block
- k_i represents the number of treatments appearing in block i
- k is the total number of treatments

The expected value given by Alvo and Cabilio (1995) is:

$$E(Alvo) = \frac{b \cdot k(k+1)^2}{4}, \tag{3.15}$$

where, b is the total number of blocks. The variance for each block, i given by Alvo and Cabilio (1995) is:

$$Var(Alvo_i) = \sigma_i^2 = \frac{k_i \cdot (k+1)^2}{12 \cdot (k_i + 1)} \sum_{j=1}^{k} (O_{ij} - \bar{O}_i)^2, \tag{3.16}$$

where

- k is the total number of treatments
- k_i represents the number of treatments appearing in block i
- O_{ij} is the expected rank for each treatment within a block i and the expected rank is zero is the observation is missing
- $\bar{O}_i = \frac{\sum_{j=1}^{k} O_{ij}}{k_i}$ is the mean of the expected rank in each block i

The total variance for any given number of blocks can be written as:

$$Var(Alvo) = \sum_{i=1}^{b} \frac{k_i \cdot (k+1)^2}{12 \cdot (k_i + 1)} \sum_{j=1}^{k} (O_{ij} - \bar{O}_i)^2. \tag{3.17}$$

The standardized Alvo and Cabilio's test statistics is

$$Z_{Alvo} = \frac{Alvo - E(Alvo)}{\sqrt{Var(Alvo)}}. \tag{3.18}$$

The statistic, Z_{Alvo} has an asymptotic standard normal distribution under H_0. We reject H_0 when $Z_{Alvo} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

3.7.1. Example 3.2: The Example Below Is Taken from Alvo and Cabilio's (1995)

This example consist of lymph heart pressure measurement in mmHg taken over 24 hours at 6-hour intervals on eight toads during an induced dehydration period. For toads $\#23, 24, 25$, some of the measurements could not be taken. Although not directly considered in the study, a question of interest is whether there is significant reduction in lymph heart pressure over the 24 hour period. First, we can write these information down from the question given.

- $n = 8$
- $k = 4$

Table 3.12. Lymph Heart Pressure (in mmHg) Taken Over a 24-Hour Period at 6-Hour Intervals on Eight Toads During Dehydration

Toad ID	Block	Time			
		6 hr	12 hr	18 hr	24hr
21	1	11.865	9.832	7.567	10.168
22	2	5.601	4.892	4.032	3.126
23	3		14.415	14.185	7.800
24	4	13.267			9.953
25	5	8.006	7.973		7.582
27	6	17.692	16.644	15.327	11.573
28	7	9.027	7.973	11.855	6.820
29	8	9.789	7.967	7.758	7.849

- $k_1 = 4$, $k_2 = 4$, $k_3 = 3$, $k_4 = 2$, $k_5 = 3$, $k_6 = 4$, $k_7 = 4$, and $k_8 = 4$

Secondly, we rank observations in each block and assign average rank for that block to any missing observation or observations in that block. Table 3.13 shows the ranking.

Table 3.13. Ranking Observations for Example 3.2

Treatments($k = 4$)				Ranks(μ_{ij})				
6 hr	12 hr	18 hr	24 hr	6 hr	12 hr	18 hr	24 hr	k_i
11.865	9.832	7.567	10.168	1	3	4	2	4
5.601	4.892	4.032	3.126	1	2	3	4	4
	14.415	14.185	7.800	**2**	1	2	3	3
13.267			9.953	1	**1.5**	**1.5**	2	2
8.006	7.973		7.582	1	2	**2**	3	3
17.692	16.644	15.327	11.573	1	2	3	4	4
9.027	7.973	11.855	6.820	2	3	1	4	4
9.789	7.967	7.758	7.849	1	2	4	3	4

Third, we calculate the weight for each block and multiply it to each treatment ranking in that block. The weight $\dfrac{k+1}{k_i+1} = 1$ when there is no missing observation within a block or all the observation in that block is missing and $\dfrac{k+1}{k_1+1} > 1$ when there is at least one missing observation in that block but not all the observation are missing in that block. Table 3.14 shows these calculations.

Fourth, we find the expected rank, mean of the expected rank and variance for each block in Table 3.15 and finally calculate the mean using equation 3.15.

$$E(Alvo) = \frac{n \cdot k(k+1)^2}{4} = \frac{8 \cdot 4(4+1)^2}{4} = 200$$

$$Var(Alvo) = 58.333$$

$$Alvo = 1 \cdot 11.416 + 2 \cdot 18.25 + 3 \cdot 22.50 + 4 \cdot 27.833 = 226.75$$

Table 3.14. Multiplying Ranks by Block Weights

$\frac{k+1}{k_i+1}$	$\frac{k+1}{k_i+1}\mu_{i1}$	$\frac{k+1}{k_i+1}\mu_{i2}$	$\frac{k+1}{k_i+1}\mu_{i3}$	$\frac{k+1}{k_i+1}\mu_{i4}$
1.000	1.000	3.000	4.000	2.000
1.000	1.000	2.000	3.000	4.000
1.250	2.500	1.250	2.500	3.750
1.667	1.667	2.500	2.500	3.333
1.250	1.250	2.500	2.500	3.750
1.000	1.000	2.000	3.000	4.000
1.000	2.000	3.000	1.000	4.000
1.000	1.000	2.000	4.000	3.000
Sum	11.416	18.250	22.50	27.833

Table 3.15. Expected Rank, Mean of Expected Rank, and Variance Calculation

O_{i1}	O_{i2}	O_{i3}	O_{i4}	$\bar{O}_i$	$\sum(O_{ij} - \bar{O}_i)^2$	$\frac{k_i(k+1)^2}{12(k_i+1)}$	σ_i^2
1	2	3	4	2.50000	5.00000	1.66667	8.33333
1	2	3	4	2.50000	5.00000	1.66667	8.33333
0	2	3	4	3.00000	2.00000	1.56250	3.12500
1	0	0	4	2.50000	4.50000	1.38889	6.25000
1	2	0	4	2.33333	4.66667	1.56250	7.29167
1	2	3	4	2.50000	5.00000	1.66667	8.33333
1	2	3	4	2.50000	5.00000	1.66667	8.33333
1	2	3	4	2.50000	5.00000	1.66667	8.33333
						Sum	58.333

Therefore, the standardized test statistics for Alvo is

$$Z_{Alvo} = \frac{226.75 - 200}{\sqrt{58.33}} = 3.50.$$

Since $Z_{Alvo} = 3.50 > Z_\alpha = 1.645$, we Reject H_0 in favor of H_1 (3.1).

3.7.2. Alvo and Cabilio for RCBD

We now consider rewriting the Alvo test statistics for RCBD design to differentiate it from the one for BIBD. We can do so by rewriting Eq. (3.14) to be the Alvo and Cabillio's test statistics for RCBD design as:

$$Alvo_{RCBD} = \sum_{j=1}^{k}\sum_{i=1}^{b} j\frac{(k+1)}{(k_i+1)}\mu_{ij}, \tag{3.19}$$

where

- μ_{ij} is the rank for treatment j or the average rank $\frac{(k_i+1)}{2}$ for that missing observation in that block
- k_i represents the number of treatments appearing in block i
- k is the total number of treatments
- b is the total number of blocks

The expected value for Alvo and Cabilio (1995) in a RCBD design is:

$$E(Alvo_{RCBD}) = \frac{b \cdot k(k+1)^2}{4}. \tag{3.20}$$

The variance for each block, i for Alvo and Cabilio (1995) is:

$$Var(Alvo_{RCBD_i}) = \sigma_i^2 = \frac{k_i \cdot (k+1)^2}{12 \cdot (k_i+1)}\sum_{j=1}^{k}(O_{ij} - \bar{O}_i)^2, \tag{3.21}$$

where

- O_{ij} is the expected rank for each treatment within a block i and the expected rank is zero is the observation is missing
- $\bar{O}_i = \frac{\sum_{j=1}^{k} O_{ij}}{k_i}$ is the mean of the expected rank in each block i

and the total variance is:

$$Var(Alvo_{RCBD}) = \sum_{i=1}^{b}\frac{k_i \cdot (k+1)^2}{12 \cdot (k_i+1)}\sum_{j=1}^{k}(O_{ij} - \bar{O}_i)^2 = b \cdot \frac{k_i \cdot (k+1)^2}{12 \cdot (k_i+1)}\sum_{j=1}^{k}(O_{ij} - \bar{O}_i)^2. \tag{3.22}$$

The two expressions in Eq. (3.22) are the same, because in the RCBD, each block has complete number of observations, so the variance for each block will be the same for the entire dataset. Therefore the total variance will be the variance for one block times the total number of blocks, b. This idea can be seen in the variance calculation for example 3.2, that is all the blocks with no missing observation had the same variance (which was 8.3333 for block 1, 2, 6, 7, and 8). The standardized Alvo and Cabilios test statistic for RCBD can be written as:

$$Z_{Alvo_{RCBD}} = \frac{Alvo_{RCBD} - E(Alvo_{RCBD})}{\sqrt{Var(Alvo_{RCBD})}}. \tag{3.23}$$

Under H_0, $Z_{Alvo_{RCBD}}$ has an asymptotic standard normal distribution. We reject the null hypothesis, H_0 when $Z_{Alvo_{RCBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

3.7.3. Alvo and Cabilio for BIBD

Eq. (3.14) can be rewritten to a special case when we have a BIBD design. This is similar to that of the RCBD design discussed in section 3.7.2. The test statistics for Alvo and Cabilio for a BIBD design can be expressed as:

$$Alvo_{BIBD} = \sum_{j=1}^{k}\sum_{i=1}^{b} j \frac{(k+1)}{(k_i+1)}\mu_{ij}, \tag{3.24}$$

where

- μ_{ij} is the rank for treatment j or the average rank $\dfrac{(k_i+1)}{2}$ for that missing observation in that block
- k_i represents the number of treatments appearing in block i
- k is the total number of treatments
- b is the total number of blocks

Under H_0, the asymptotic distribution of $Alvo_{BIBD}$ is normal with mean and variance

$$E(Alvo_{BIBD}) = \frac{b \cdot k(k+1)^2}{4} \tag{3.25}$$

and

$$Var(Alvo_{BIBD}) = \sum_{i=1}^{b} \frac{k_i \cdot (k+1)^2}{12 \cdot (k_i+1)} \sum_{j=1}^{k} (O_{ij} - \bar{O}_i)^2. \tag{3.26}$$

respectively, where

- O_{ij} is the expected rank for each treatment within a block i and the expected rank is zero is the observation is missing
- $\bar{O}_i = \frac{\sum_{j=1}^{k} O_{ij}}{k_i}$ is the mean of the expected rank in each block i

The standardized Alvo and Cabilio's test statistic for BIBD can be written as:

$$Z_{Alvo_{BIBD}} = \frac{Alvo_{BIBD} - E(Alvo_{BIBD})}{\sqrt{Var(Alvo_{BIBD})}}. \tag{3.27}$$

Under H_0, $Z_{Alvo_{BIBD}}$ has an asymptotic standard normal distribution. We reject the null hypothesis, H_0 when $Z_{Alvo_{BIBD}} > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

4. PROPOSED TESTS FOR MIXED DESIGN

This chapter is divided into two parts. The first part will talk about proposing eight new test statistics for nondecreasing ordered alternative in a mixed design (a combination of RCBD and BIBD). Sometimes a researcher may start with RCBD but will end up with some missing values due to not enough homogeneous experimental units in the blocks to be able to apply all of the treatments. So the researcher will ended using a mixed design. We will use the test statistics discussed in Chapter 3 to propose the eight new tests. Two versions of test are proposed for the mixed design under each of the four main tests (JT, MJT, SJT, and Alvo) for RCBD and BIBD designs discussed in Chapter 3, where in one of the proposed tests, the test statistic for RCBD and the same tests statistics for BIBD are added first and standardized, whereas in the other proposed tests, they were standardized first and then added.

The second part of this chapter will consider another situation where all the data (RCBD and BIBD for any k treatments) were merged together and compared the overall Alvo and Cabilio's test statistics to the eight proposed tests which will be developed in the first part of this chapter. We will also compare the Alvo and Cabilio's test to the standardized first and last test for Alvo and Cabilio . The standardized first and last for Alvo are two of the proposed tests that will be discussed in the first part of this chapter.

4.1. First Part

4.1.1. JT for Mixed Design

The first proposed test for JT for mixed design was developed using the standardized version of JT test for RCBD, denoted as $Z_{JT_{RCBD}}$, given in (3.3) and the standardized version of JT test for BIBD, denoted as $Z_{JT_{BIBD}}$, given in (3.5). Both $Z_{JT_{RCBD}}$ and $Z_{JT_{BIBD}}$ have asymptotic standard normal distribution when H_0 is true.

The first proposed test (standardized first for JT) we are proposing for the mixed design, Z_1^*, is given below:

$$Z_1^* = \frac{Z_{JT_{RCBD}} + Z_{JT_{BIBD}}}{\sqrt{2}}. \tag{4.1}$$

Under H_0, the statistic Z_1^* will have an asymptotic standard normal distribution since the asymptotic distribution of $Z_{JT_{RCBD}}$ and $Z_{JT_{BIBD}}$ under H_0 are standard normal. We reject H_0 when $Z_1^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

The second proposed test (standardized last for JT) we are proposing for the mixed design, Z_2^*, is given below:

$$Z_2^* = \frac{(JT_{RCBD} + JT_{BIBD}) - (E(JT_{RCBD}) + E(JT_{BIBD}))}{\sqrt{Var(JT_{RCBD}) + Var(JT_{BIBD})}}. \tag{4.2}$$

Here, $JT_{RCBD}, E(JT_{RCBD}),$ and $Var(JT_{RCBD})$ are the test statistic, expected value and variance for JT in the RCBD design given in section 3.1 and $JT_{BIBD}, E(JT_{BIBD}),$ and $Var(JT_{BIBD})$ are the test statistic, expected value and variance respectively for JT in the BIBD given in section 3.2. Under H_0, the statistic Z_2^* will have an asymptotic standard normal distribution. We reject H_0 when $Z_2^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

4.1.2. MJT for Mixed Design

We propose the third test for the mixed design by using the standardized version of MJT test for RCBD, denoted by $Z_{MJT_{RCBD}}$, given in (3.7) and the standardized version of MJT test fot BIBD, denoted by $Z_{MJT_{BIBD}}$, given in (3.9). Under H_0, both $Z_{MJT_{RCBD}}$ and $Z_{MJT_{BIBD}}$ have asymptotic standard normal distribution.

The third proposed test statistic (standardized first for MJT) for the mixed design, Z_3^*, is given by:

$$Z_3^* = \frac{Z_{MJT_{RCBD}} + Z_{MJT_{BIBD}}}{\sqrt{2}}. \tag{4.3}$$

Under H_0, the statistic Z_3^* will have an asymptotic standard normal distribution since the asymptotic distribution of $Z_{MJT_{RCBD}}$ and $Z_{MJT_{BIBD}}$ under H_0 are standard normal. We reject H_0 when $Z_3^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

The fourth proposed test statistic (standardized last for MJT) for the mixed design, Z_4^* is given by:

$$Z_4^* = \frac{(MJT_{RCBD} + MJT_{BIBD}) - (E(MJT_{RCBD}) + E(MJT_{BIBD}))}{\sqrt{Var(MJT_{RCBD}) + Var(MJT_{BIBD})}}. \tag{4.4}$$

Here, $MJT_{RCBD}, E(MJT_{RCBD})$, and $Var(MJT_{RCBD})$ are the test statistic, expected value and variance for MJT in the RCBD design given in section 3.3 and $MJT_{BIBD}, E(MJT_{BIBD})$, and $Var(MJT_{BIBD})$ are the test statistic, expected value and variance respectively for MJT in the BIBD given in section 3.4. Under H_0, the statistic Z_4^* will have an asymptotic standard normal distribution. We reject H_0 when $Z_4^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

4.1.3. SJT for Mixed Design

To propose the fifth test for the mixed design, we will be using the SJT test statistic for RCBD and BIBD discussed in section 3.5 and 3.6 respectively. The standardized version of the SJT test for RCBD, denoted by $Z_{SJT_{RCBD}}$, given in (3.10) and the standardized version of SJT test for BIBD, denoted as $Z_{SJT_{BIBD}}$, given in (3.12) will be used. Under H_0, both $Z_{SJT_{RCBD}}$ and $Z_{SJT_{BIBD}}$ have asymptotic standard normal distribution.

The fifth proposed test statistic (standardized first for SJT) for the mixed design, Z_5^*, is given by:

$$Z_5^* = \frac{Z_{SJT_{RCBD}} + Z_{SJT_{BIBD}}}{\sqrt{2}}. \tag{4.5}$$

Under H_0, the statistic Z_5^* will have an asymptotic standard normal distribution since the asymptotic distribution of $Z_{SJT_{RCBD}}$ and $Z_{SJT_{BIBD}}$ under H_0 are standard normal. We reject H_0 when $Z_5^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

The Sixth proposed test statistic (standardized last for SJT) for the mixed design, Z_6^* is given by:

$$Z_6^* = \frac{(SJT_{RCBD} + SJT_{BIBD}) - (E(SJT_{RCBD}) + E(SJT_{BIBD}))}{\sqrt{Var(SJT_{RCBD}) + Var(SJT_{BIBD})}}. \tag{4.6}$$

Here, $SJT_{RCBD}, E(SJT_{RCBD})$, and $Var(SJT_{RCBD})$ are the test statistic, expected value and variance for SJT in the RCBD design given in section 3.5 and $SJT_{BIBD}, E(SJT_{BIBD})$, and $Var(SJT_{BIBD})$ are the test statistic, expected value and variance respectively for SJT in the BIBD given in section 3.6. Under H_0, the statistic Z_6^* will have an asymptotic standard normal distribution. We reject H_0 when $Z_6^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

4.1.4. Alvo for Mixed Design

The standardized test statistics for Alvo and Cabilio for RCBD, $Z_{Alvo_{RCBD}}$, given in Eq. (3.23) and standardized test statistics for Alvo and Cabilio for BIBD, $Z_{Alvo_{RCBD}}$, given in Eq. (3.27) were used to develop the seventh propose test. Both $Z_{Alvo_{RCBD}}$ and $Z_{Alvo_{BIBD}}$ have asymptotic standard normal distributions when H_0 is true.

The seventh proposed test (standardized first for Alvo) for the mixed design, Z_7^* is given in (4.7):

$$Z_7^* = \frac{Z_{Alvo_{RCBD}} + Z_{Alvo_{BIBD}}}{\sqrt{2}}. \tag{4.7}$$

Under H_0, the statistic Z_7^* will have an asymptotic standard normal distribution since the asymptotic distribution of $Z_{Alvo_{RCBD}}$ and $Z_{Alvo_{BIBD}}$ under H_0 are standard normal. We reject H_0 when $Z_7^* > Z_\alpha$ where Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

The eight proposed test (standardized last for Alvo) for the mixed design, Z_8^* is given by

$$Z_8^* = \frac{(Alvo_{RCBD} + Alvo_{BIBD}) - (E(Alvo_{RCBD}) + E(Alvo_{BIBD}))}{\sqrt{Var(Alvo_{RCBD}) + Var(Alvo_{BIBD})}}. \tag{4.8}$$

Here, $Alvo_{RCBD}$, $E(Alvo_{RCBD})$, and $Var(Alvo_{RCBD})$ are the test statistic, expected value, and variance for Alvo in RCBD design given in (3.19), (3.20), and (3.22) respectively, and $Alvo_{BIBD}$, $E(Alvo_{BIBD})$, and $Var(Alvo_{BIBD})$ are the test statistic, expected value, and variance for Alvo in BIBD design given in (3.24), (3.25), and (3.26) respectively.

Below, are the combinations of the mixed designs (RCBD & BIBD) that will be run for the eight proposed test described above for each case. Details about this will be discussed in chapter 5.

Table 4.1. Combination of Mixed Designs for First Part

Case	RCBD	BIBD
1	3 Treatments	3 treatments with 2 observations per block
2	4 Treatments	4 treatments with 3 observations per block
3	4 Treatments	4 treatments with 2 observations per block
4	5 Treatments	5 treatments with 4 observations per block
5	5 Treatments	5 treatments with 3 observations per block
6	5 Treatments	5 treatments with 2 observations per block

4.2. Second Part

We considered merging all the data from the two designs (RCBD and BIBD) and finding the standardized Alvo test statistics, Z_{Alvo} given in Eq. (3.18) as well as the eight proposed test discussed in section 4.1 for the mixed design. Let say for three treatments, we will have three treatments for RCBD and three treatments with two observations per block for BIBD (1 missing observation per block). The first eight proposed test discussed in this chapter will be calculated for the mixed design. The two designs (RCBD and BIBD) will be merged together and the standardized Alvo test statistics will be calculated and will be compared with the first eight proposed tests. As we can see from the cases in Table 4.1.1., two designs were added to get the mixed design, but over here this will change when we have four treatments and five treatments.

For three treatments we can still use the first 8 proposed tests described in this chapter as well as finding the Alvo test statistics because we will have two designs to combine. We will have to modify the eight proposed tests for four treatments and five treatments. To avoid any confusion of notation between this part and the first part we will rename some notations. So for example for four treatments, the mixed design will be made of four treatments of RCBD, four treatments with three observations per block for BIBD, and four treatments with two observations per block for BIBD. So we will rename four treatments with three observations per block for BIBD (1 missing observation per block) as BIBD1 design, and four treatments with two observations per block for BIBD (2 missing observations per block) as BIBD2 to avoid any confusion. Table 4.2, shows a combination of designs for the mixed design that we considered for the second part.

Table 4.2. Combination of Mixed Designs for Second Part

Case	RCBD	BIBD
1	3 Treatments	3 treatments with 2 observations per block
2	4 Treatments	4 treatments with 3 observations per block (BIBD1) + 4 treatments with 2 observations per block (BIBD2)
3	5 Treatments	5 treatments with 4 observations per block (BIBD1) + 5 treatments with 3 observations per block (BIBD2) + 5 treatments with 2 observations per block (BIBD3)

4.2.1. Three Treatments

Here, the mixed design considered is three treatments for RCBD and three treatments with two observations per block for BIBD. We can see from Table 4.1 and Table 4.2, that the first cases have the same mixed design. Which implies that we can use the first eight proposed tests discussed in section 4.1 here also without any modifications. In addition to finding the first eight proposed tests, the data for RCBD and BIBD are merged together, and the standardized Alvo and Cabilio's test statistics, Z_{Alvo}, given in Eq. (3.18) is calculated. The powers are then compared.

4.2.2. Four Treatments

The mixed design considered here, is a mixture of four treatments for RCBD, four treatments with three observations per block (BIBD1), and four treatments with two observations per block (BIBD2). We would have to modify the first eight proposed test discussed in section 4.1 by first modifying all the standardized tests statistics for JT, MJT, SJT, and Alvo for the BIBD designs introduced in chapter 3. The data from the three designs were merged together and the standardized Alvo and Cabilio's test statistics, Z_{Alvo}, given in Eq. (3.18) is calculated. For example, the standardized JT test statistics for BIBD given in Eq. (3.5) can be modified for four treatments with three observations per block (BIBD1), and four treatments with two observations per block (BIBD2) as

$$Z_{JT_{BIBD1}} = \frac{JT_{BIBD1} - E(JT_{BIBD1})}{\sqrt{Var(JT_{BIBD1})}} \tag{4.9}$$

and

$$Z_{JT_{BIBD2}} = \frac{JT_{BIBD2} - E(JT_{BIBD2})}{\sqrt{Var(JT_{BIBD2})}} \tag{4.10}$$

respectively. We will use this same way to find the standardized test statistic for MJT, SJT, and Alvo for BIBD1 and BIBD2. The following are the modification of the eight proposed tests discussed in section 4.1 for the mixed design here.

1. The standardized first for JT (which is a modification of the first proposed test given in Eq. (4.1)) for the mixed design, Z_9^* is given as:

$$Z_9^* = \frac{Z_{JT_{RCBD}} + Z_{JT_{BIBD1}} + Z_{JT_{BIBD2}}}{\sqrt{3}}. \tag{4.11}$$

2. The standardized last for JT (which is a modification of the second proposed test given in Eq. (4.2)) for the mixed design, Z_{10}^* is given as:

$$Z_{10}^* = \frac{(JT_{RCBD} + JT_{BIBD1} + JT_{BIBD2}) - (E(JT_{RCBD}) + E(JT_{BIBD1}) + E(JT_{BIBD2}))}{\sqrt{Var(JT_{RCBD}) + Var(JT_{BIBD1}) + Var(JT_{BIBD2})}}. \tag{4.12}$$

3. The standardized first for MJT (which is a modification of the third proposed test given in Eq. (4.3)) for the mixed design, Z_{11}^{*} is given as:

$$Z_{11}^{*} = \frac{Z_{MJT_{RCBD}} + Z_{MJT_{BIBD1}} + Z_{MJT_{BIBD2}}}{\sqrt{3}}. \tag{4.13}$$

4. The standardized last for MJT (which is a modification of the fourth proposed test given in Eq. (4.4)) for the mixed design, Z_{12}^{*} is given as:

$$Z_{12}^{*} = \left\{ \frac{(MJT_{RCBD} + MJT_{BIBD1} + MJT_{BIBD2}) - (E(MJT_{RCBD}) + E(MJT_{BIBD1}) + E(MJT_{BIBD2})}{\sqrt{Var(MJT_{RCBD}) + Var(MJT_{BIBD1}) + Var(MJT_{BIBD2})}} \right\}. \tag{4.14}$$

5. The standardized first for SJT (which is a modification of the fifth proposed test given in Eq. (4.5)) for the mixed design, Z_{13}^{*} is given as:

$$Z_{13}^{*} = \frac{Z_{SJT_{RCBD}} + Z_{SJT_{BIBD1}} + Z_{SJT_{BIBD2}}}{\sqrt{3}}. \tag{4.15}$$

6. The standardized last for SJT (which is a modification of the sixth proposed test given in Eq. (4.6)) for the mixed design, Z_{14}^{*} is given as:

$$Z_{14}^{*} = \left\{ \frac{(SJT_{RCBD} + SJT_{BIBD1} + SJT_{BIBD2}) - (E(SJT_{RCBD}) + E(SJT_{BIBD1}) + E(SJT_{BIBD2}))}{\sqrt{Var(SJT_{RCBD}) + Var(SJT_{BIBD1}) + Var(SJT_{BIBD2})}} \right\}. \tag{4.16}$$

7. The standardized first for Alvo (which is a modification of the seventh proposed test given in Eq. (4.7)) for the mixed design, Z_{15}^{*} is given as:

$$Z_{15}^{*} = \frac{Z_{Alvo_{RCBD}} + Z_{Alvo_{BIBD1}} + Z_{Alvo_{BIBD2}}}{\sqrt{3}}. \tag{4.17}$$

8. The standardized last for Alvo (which is a modification of the eighth proposed test given in Eq. (4.8)) for the mixed design, Z^*_{16} is given as:

$$Z^*_{16} = \left\{ \frac{(Alvo_{RCBD} + Alvo_{BIBD1} + Alvo_{BIBD2}) - (E(Alvo_{RCBD}) + E(Alvo_{BIBD1})}{\sqrt{Var(Alvo_{RCBD}) + Var(Alvo_{BIBD1}) + Var(Alvo_{BIBD2})}} \right.$$
$$\left. \frac{+E(Alvo_{BIBD2}))}{} \right\}. \tag{4.18}$$

Under H_0, the statistic Z^*_i, where $i = 9, 10, \cdots, 16$ will have an asymptotic standard normal distribution. We reject H_0 when $Z^*_i > Z_\alpha$ where $i = 9, 10, \cdots, 16$ and Z_α is the $(1 - \alpha)100$ percentile of a standard normal distribution.

4.2.3. Five Treatments

For five treatments, the mixed design consists of five treatments for RCBD, five treatments with four observations per block (BIBD1), five treatments with three observations per block (BIBD2), and five treatments with two observations per block (BIBD3). Again we will modify the proposed tests discussed in section 4.1 by modifying all the standardized test statistics for JT, MJT, SJT and Alvo for the BIBD designs (BIBD1, BIBD2, and BIBD3). We can modify these tests in a similar zmanner described in section 4.2.2. The standardized Alvo and Cabilio's test statistics, Z_{Alvo}, given in Eq. (3.18) will be calculated as well for the merged data (RCBD + BIBD1 + BIBD2 + BIBD3). Below are the modifications of the eight proposed test in section 4.1 for the five treatments mixed design in this case.

1. The standardized first for JT (which is a modification of the first proposed test given in Eq. (4.1)) for the mixed design, Z^*_{17} is given as:

$$Z^*_{17} = \frac{Z_{JT_{RCBD}} + Z_{JT_{BIBD1}} + Z_{JT_{BIBD2}} + Z_{JT_{BIBD3}}}{2}. \tag{4.19}$$

2. The standardized last for JT (which is a modification of the second proposed test given in Eq. (4.2)) for the mixed design, Z^*_{18} is given as:

$$Z^*_{18} = \left\{ \frac{(JT_{RCBD} + JT_{BIBD1} + JT_{BIBD2} + JT_{BIBD3})}{\sqrt{Var(JT_{RCBD}) + Var(JT_{BIBD1}) + Var(JT_{BIBD2}) + Var(JT_{BIBD3})}} \right.$$
$$\left. \frac{-(E(JT_{RCBD}) + E(JT_{BIBD1}) + E(JT_{BIBD2}) + E(JT_{BIBD3}))}{} \right\}. \quad (4.20)$$

3. The standardized first for MJT (which is a modification of the third proposed test given in Eq. (4.3)) for the mixed design, Z^*_{19} is given as:

$$Z^*_{19} = \frac{Z_{MJT_{RCBD}} + Z_{MJT_{BIBD1}} + Z_{MJT_{BIBD2}} + Z_{MJT_{BIBD3}}}{2}. \quad (4.21)$$

4. The standardized last for MJT (which is a modification of the fourth proposed test given in Eq. (4.4)) for the mixed design, Z^*_{20} is given as:

$$Z^*_{20} = \left\{ \frac{(MJT_{RCBD} + MJT_{BIBD1} + MJT_{BIBD2} + MJT_{BIBD3})}{\sqrt{Var(MJT_{RCBD}) + Var(MJT_{BIBD1}) + Var(MJT_{BIBD2}) + Var(MJT_{BIBD3})}} \right.$$
$$\left. \frac{-(E(MJT_{RCBD}) + E(MJT_{BIBD1}) + E(MJT_{BIBD2}) + E(MJT_{BIBD3}))}{} \right\}.$$
$$(4.22)$$

5. The standardized first for SJT (which is a modification of the fifth proposed test given in Eq. (4.5)) for the mixed design, Z^*_{21} is given as:

$$Z^*_{21} = \frac{Z_{SJT_{RCBD}} + Z_{SJT_{BIBD1}} + Z_{SJT_{BIBD2}} + Z_{SJT_{BIBD3}}}{2}. \quad (4.23)$$

6. The standardized last for SJT (which is a modification of the sixth proposed test given in Eq. (4.6)) for the mixed design, Z_{22}^* is given as:

$$Z_{22}^* = \left\{ \frac{(SJT_{RCBD} + SJT_{BIBD1} + SJT_{BIBD2} + SJT_{BIBD3})}{\sqrt{Var(SJT_{RCBD}) + Var(SJT_{BIBD1}) + Var(SJT_{BIBD2}) + Var(SJT_{BIBD3})}} \right.$$
$$\left. \frac{-(E(SJT_{RCBD}) + E(SJT_{BIBD1}) + E(SJT_{BIBD2}) + E(SJT_{BIBD3}))}{} \right\}. \tag{4.24}$$

7. The standardized first for Alvo (which is a modification of the seventh proposed test given in Eq. (4.7)) for the mixed design, Z_{23}^* is given as:

$$Z_{23}^* = \frac{Z_{Alvo_{RCBD}} + Z_{Alvo_{BIBD1}} + Z_{Alvo_{BIBD2}} + Z_{Alvo_{BIBD3}}}{2}. \tag{4.25}$$

8. The standardized last for Alvo (which is a modification of the eighth proposed test given in Eq. (4.8)) for the mixed design, Z_{24}^* is given as:

$$Z_{24}^* = \left\{ \frac{(Alvo_{RCBD} + Alvo_{BIBD1} + Alvo_{BIBD2} + Alvo_{BIBD3})}{\sqrt{Var(Alvo_{RCBD}) + Var(Alvo_{BIBD1}) + Var(Alvo_{BIBD2}) + Var(Alvo_{BIBD3})}} \right.$$
$$\left. \frac{-(E(Alvo_{RCBD}) + E(Alvo_{BIBD1}) + E(Alvo_{BIBD2}) + E(Alvo_{BIBD2}))}{} \right\}. \tag{4.26}$$

Under H_0, the statistic Z_i^*, where $i = 17, 18, \cdots 24$ will have an asymptotic standard normal distribution. We reject H_0 when $Z_i^* > Z_\alpha$ where $i = 17, 18, \cdots 24$ and Z_α is the $(1-\alpha)100$ percentile of a standard normal distribution.

4.3. Example

The healthcare industry has widely been known for its skyrocketing costs over the recent years. Among the hot topics of debate is the readmission rates (proportion of patients readmitted to an inpatient facility). A readmission is defined as an admission back to the healthcare facility for the same or related conditions that caused the initial admission. There are several options of care once a patient is discharged. Suppose a hospital wants to evaluate the following discharge options:

- Discharged to home care where care is provided by licensed clinicians(W)
- Discharged with engaged communication by the hospital e.g. a phone call by the doctor or case management team (X)
- Discharged with instructions of care (Y)
- Discharged without further follow up (Z).

Table 4.3. Ideal Readmission Study Design

DRG	W	X	Y	Z
Major head and neck procedures	0.10	0.32	0.25	0.40
Spinal procedures	0.21	0.39	0.15	0.32
Lung transplant	0.11	0.27	0.53	0.72
Ventricular shunt	0.12	0.43	0.36	0.66
Extracranial procedures	0.40	0.21	0.88	0.17
Carotid artery stent	0.18	0.12	0.09	0.67
Intracranial vascular procedures	0.14	0.26	0.08	0.77
Orbital procedures	0.47	0.35	0.45	0.81

The hospital believes that the first option is the most effective one at reducing its readmission rates followed by engaged communication, discharge with instructions of care and discharged without further follow up. The hospital decides to do a retrospective study where medical records are reviewed to study readmissions rates within 30 days of discharge. In order to control for nuisance factors the hospital decides to only use Diagnostic Related Groups (DRGs) as a blocking factor. For instance, all patients with a DRG like major head and neck procedures are analyzed for readmission rates based on where they went after being discharged. Table 4.3.1 shows an ideal set up of data.

However, suppose the hospital finds that there are not enough DRGs that have patients across all four options. This could be due to patients being readmitted to other facilities thus losing that data. Another reason could be low volume of some departments driving low numbers in some DRGs. In addition some patients admitted might have multiple DRGs which leads to exclusion of their data to avoid inaccurate results. Such factors lead to some DRGs missing certain discharge options. The eventual design is then a mixture of an incomplete block design and a RCBD. Table 4.3.2 shows the data from the study.

Table 4.4. Hospital Readmission Rates Example

DRG	W	X	Y	Z
Major head and neck procedures	0.10	0.32	0.25	0.40
Hypertension		0.71	0.23	0.60
Heart transplant	0.67		0.10	0.37
Liver transplant	0.45			0.80
Bone marrow transplant			0.59	0.67
Lung transplant	0.11	0.27	0.53	0.72
Ventricular shunt	0.12	0.43	0.36	0.66
Major head and neck procedures	0.53	0.49		
Mouth procedures	0.23		0.48	
Spinal procedures	0.21	0.39	0.15	0.32
Thyroid procedures	0.23	0.24	0.32	
Extracranial procedures	0.40	0.21	0.88	0.17
Pulmonary embolism	0.35	0.60		0.88
Carotid artery stent	0.18	0.12	0.09	0.67
Kidney Transplant		0.51	0.55	
Orbital procedures		0.32		0.12
Intracranial vascular procedures	0.14	0.26	0.08	0.77
Orbital procedures	0.47	0.35	0.45	0.81

To start with the calculations for the proposed tests mentioned in this chapter, we first split table 4.3.2 into RCBD, BIBD1 and BIBD2. Below are the resulting tables.

Table 4.5. Hospital Readmission Rates Example RCBD Design

DRG	W	X	Y	Z
Major head and neck procedures	0.10	0.32	0.25	0.40
Spinal procedures	0.21	0.39	0.15	0.32
Lung transplant	0.11	0.27	0.53	0.72
Ventricular shunt	0.12	0.43	0.36	0.66
Extracranial procedures	0.40	0.21	0.88	0.17
Carotid artery stent	0.18	0.12	0.09	0.67
Intracranial vascular procedures	0.14	0.26	0.08	0.77
Orbital procedures	0.47	0.35	0.45	0.81

Table 4.6. Hospital Readmission Rates Example BIBD1 Design

DRG	W	X	Y	Z
Hypertension		0.71	0.23	0.60
Pulmonary embolism	0.35	0.60		0.88
Heart transplant	0.67		0.10	0.37
Thyroid procedures	0.23	0.24	0.32	

Table 4.7. Hospital Readmission Rates Example BIBD2 Design

DRG	W	X	Y	Z
Liver transplant	0.45			0.80
Bone marrow transplant			0.59	0.67
Kidney Transplant		0.51	0.55	
Orbital procedures		0.32		0.12
Major head and neck procedures	0.53	0.49		
Mouth procedures	0.23		0.48	

The U_{ij}'s and the test statistics values are calculated for each of the three designs using the summarized tables below. The summarized expected values and variances presented in chapter 4 for four treatments was used in the calculations of the standardized test statistics for JT, MJT and SJT (a copy of the expected values and variance calculations can be found in Appendix A.

From Table 4.8, we can calculate the standardized test statistics values for JT, MJT and SJT for the RCBD. The RCBD design has 8 blocks. Below are the calculations. The expected value and variance for JT for four treatment RCBD are $E(JT_{RCBD}) = 8 \cdot 3 = 24$ and $Var(JT_{RCBD}) = 8 \cdot 2.1667 = 17.3336$ respectively. So we can write the standardized test statistics for JT as

$$Z_{JT_{RCBD}} = \frac{JT_{RCBD} - E(JT_{RCBD})}{\sqrt{Var(JT_{RCBD})}} = \frac{32 - 24}{\sqrt{17.3336}} = 1.9214$$

The expected value and variance for MJT are $E(MJT_{RCBD}) = 8 \cdot 5 = 40$ and $Var(MJT_{RCBD}) = 8 \cdot 8.333 = 66.6664$ respectively. The standardized test statistics for MJT can be written as

$$Z_{MJT_{RCBD}} = \frac{MJT_{RCBD} - E(MJT_{RCBD})}{\sqrt{Var(MJT_{RCBD})}} = \frac{56 - 40}{\sqrt{66.6664}} = 1.9596$$

The expected value and variance for SJT are $E(SJT_{RCBD}) = 8 \cdot 10 = 80$ and $Var(SJT_{RCBD}) = 8 \cdot 45 = 360$ respectively. The standardized test statistics for SJT can be written as

$$Z_{SJT_{RCBD}} = \frac{SJT_{RCBD} - E(SJT_{RCBD})}{\sqrt{Var(SJT_{RCBD})}} = \frac{118 - 80}{\sqrt{360}} = 2.0028$$

We now calculate the standardized test statistics for JT, MJT, and SJT for BIBD1 (four treatments with three observations per block) using Table 4.9.

Table 4.8. Hospital Readmission Rates Example RCBD Design

W	X	Y	Z	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
0.10	0.32	0.25	0.40	1	1	1	0	1	1	5	9	19
0.21	0.39	0.15	0.32	1	0	1	0	0	1	3	5	11
0.11	0.27	0.53	0.72	1	1	1	1	1	1	6	10	20
0.12	0.43	0.36	0.66	1	1	1	0	1	1	5	9	19
0.40	0.21	0.88	0.17	0	1	0	1	0	0	2	3	5
0.18	0.12	0.09	0.67	0	0	1	0	1	1	3	6	14
0.14	0.26	0.08	0.77	1	0	1	0	1	1	4	7	15
0.47	0.35	0.45	0.81	0	0	1	1	1	1	4	7	5
										32	56	118

Table 4.9. Hospital Readmission Rates Example BIBD1 Design

W	X	Y	Z	U_{a12}	U_{1a3}	U_{aa14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
	0.71	0.23	0.60	0	0	0	0	0	1	1	1	1
0.35	0.60		0.88	1	0	1	0	1	0	3	6	14
0.67		0.10	0.37	0	0	0	0	0	1	1	1	1
0.23	0.24	0.32		1	1	0	1	0	0	3	4	6
										8	12	22

The expected value and variance for JT for four treatment with three observations per block (BIBD1) are $E(JT_{BIBD1}) = 4 \cdot 1.5 = 6$ and $Var(JT_{BIBD1}) = 4 \cdot 0.9167 = 3.6668$ respectively. So we can write the standardized test statistics for JT for BIBD1 as:

$$Z_{JT_{BIBD1}} = \frac{JT_{BIBD1} - E(JT_{BIBD1})}{\sqrt{Var(JT_{BIBD1})}} = \frac{8-6}{\sqrt{3.6668}} = 1.0443.$$

The expected value for MJT in the BIBD design is $E(MJT_{BIBD1}) = 4 \cdot 2.5 = 10$ and the variance is $Var(MJT_{BIBD1}) = 4 \cdot 3.3333 = 13.3332$. The standardized test statistics for MJT can be written as:

$$Z_{MJT_{BIBD1}} = \frac{MJT_{BIBD1} - E(MJT_{BIBD1})}{\sqrt{Var(MJT_{BIBD1})}} = \frac{12-10}{\sqrt{13.3334}} = 0.5477.$$

The expected value for SJT in the BIBD1 design is $E(SJT_{BIBD1}) = 4 \cdot 5 = 20$ and the variance is $Var(SJT_{BIBD1}) = 4 \cdot 18.5 = 74$. The standardized test statistics for SJT can be written as

$$Z_{SJT_{BIBD1}} = \frac{SJT_{BIBD1} - E(SJT_{BIBD1})}{\sqrt{Var(SJT_{BIBD1})}} = \frac{22-20}{\sqrt{74}} = 0.2325.$$

Table 4.10 was used to calculate the standardized test statistics for JT, MJT, and SJT for BIBD2 design.

Table 4.10. Hospital Readmission Rates Example BIBD2 Design

W	X	Y	Z	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
0.23		0.48		0	1	0	0	0	0	1	2	4
		0.59	0.67	0	0	0	0	0	1	1	1	1
0.45			0.80	0	0	1	0	0	0	1	3	9
0.51	0.49			0	0	0	0	0	0	0	0	0
	0.51	0.55		0	0	0	1	0	0	1	1	1
	0.32		0.12	0	0	0	0	0	0	0	0	0
										4	7	15

The expected value and variance for JT for four treatment with two observations per block (BIBD2) are $E(JT_{BIBD2}) = 6 \cdot 0.5 = 3$ and $Var(JT_{BIBD2}) = 6 \cdot 0.25 = 1.5$ respectively. So we can write the standardized test statistics for JT as

$$Z_{JT_{BIBD2}} = \frac{JT_{BIBD2} - E(JT_{BIBD2})}{\sqrt{Var(JT_{BIBD2})}} = \frac{4-3}{\sqrt{1.5}} = 0.8165$$

The expected value and variance for MJT for BIBD2 are $E(MJT_{BIBD2}) = 6 \cdot 0.8333 = 5$ and $Var(MJT_{BIBD2}) = 6 \cdot 0.8333 = 5$ respectively. The standardized test statistics for MJT can be written as

$$Z_{MJT_{BIBD2}} = \frac{MJT_{BIBD2} - E(MJT_{BIBD2})}{\sqrt{Var(MJT_{BIBD2})}} = \frac{7-5}{\sqrt{5}} = 0.8944$$

The expected value and variance for SJT for BIBD2 are $E(SJT_{BIBD2}) = 6 \cdot 1.6667 = 10$ and $Var(SJT_{BIBD2}) = 6 \cdot 8.3333 = 29$ respectively. The standardized test statistics for SJT can be written as

$$Z_{SJT_{BIBD2}} = \frac{SJT_{BIBD2} - E(SJT_{BIBD2})}{\sqrt{Var(SJT_{BIBD2})}} = \frac{15-10}{\sqrt{29}} = 0.9285$$

We now consider finding all the standardized Alvo test statistics for the RCBD, BIBD1, and BIBD2. We start by finding the ranking within each block and multiplying the ranking by the weight for that block. Table 4.11 shows the calculation. Table 4.12 shows the calculation for the overall variance for the RCBD design.

Table 4.11. Hospital Readmission Rates for Alvo RCBD
Finding Ranking and Weights

Ranks(μ_{ij})									
μ_{i1}	μ_{i2}	μ_{i3}	μ_{i4}	k_i	$\frac{k+1}{k_i+1}$	$\frac{k+1}{k_i+1}\mu_{i1}$	$\frac{k+1}{k_i+1}\mu_{i2}$	$\frac{k+1}{k_i+1}\mu_{i3}$	$\frac{k+1}{k_i+1}\mu_{i4}$
1	3	2	4	4	1.000	1.000	3.000	2.000	4.000
2	4	1	3	4	1.000	2.000	4.000	1.000	3.000
1	2	3	4	4	1.000	1.000	2.000	3.000	4.000
1	3	2	4	4	1.000	1.000	3.000	2.000	4.000
3	2	4	1	4	1.000	3.000	2.000	4.000	1.000
3	2	1	4	4	1.000	3.000	2.000	1.000	4.000
2	3	1	4	4	1.000	2.000	3.000	1.000	4.000
3	1	2	4	4	1.000	3.000	1.000	2.000	4.000
						16	20	16	28

Table 4.12. Expected Rank, Mean of Expected Rank, and Variance Calculation
for Alvo RCBD

O_{i1}	O_{i2}	O_{i3}	O_{i4}	$\bar{O}_i$	$\sum(O_{ij}-\bar{O}_i)^2$	$\frac{k_i(k+1)^2}{12(k_i+1)}$	σ_i^2
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
						Sum	66.667

Using Tables 4.11 and 4.12 with expected value formula in Eq. (3.20), we can then find the standardized test statistics for Alvo for RCBD, $Z_{Alvo_{RCBD}}$, given in Eq. (3.23) below.

$$E(Alvo_{RCBD}) = \frac{b \cdot k(k+1)^2}{4} = \frac{8 \cdot 4(4+1)^2}{4} = 200$$

$$V(Alvo_{RCBD}) = 66.667$$

$$Alvo_{RCBD} = 1 \cdot 16 + 2 \cdot 20 + 3 \cdot 16 + 4 \cdot 28 = 216$$

$$Z_{Alvo_{RCBD}} = \frac{216 - 200}{\sqrt{66.667}} = 1.9596$$

Before, we calculate the standardized test statistic for Alvo BIBD2, we will first use Table 4.13 for the ranking and the weights calculation, and Table 4.14 for the variance calculations.

Table 4.13. Hospital Readmission Rates for Alvo BIBD1
Finding Ranking and Weights

Ranks(μ_{ij})									
μ_{i1}	μ_{i2}	μ_{i3}	μ_{i4}	k_i	$\frac{k+1}{k_i+1}$	$\frac{k+1}{k_i+1}\mu_{i1}$	$\frac{k+1}{k_i+1}\mu_{i2}$	$\frac{k+1}{k_i+1}\mu_{i3}$	$\frac{k+1}{k_i+1}\mu_{i4}$
2	3	1	2	3	1.250	2.500	3.750	1.250	2.50
1	2	**2**	3	3	1.250	1.250	2.500	2.500	3.750
3	**2**	1	2	3	1.250	3.750	2.500	1.250	2.500
1	2	3	**2**	3	1.250	1.250	2.500	3.750	2.50
						8.75	11.25	8.75	11.25

Table 4.14. Expected Rank, Mean of Expected Rank, and Variance Calculation
for Alvo BIBD1

O_{i1}	O_{i2}	O_{i3}	O_{i4}	$\bar{O}_i$	$\sum(O_{ij} - \bar{O}_i)^2$	$\frac{k_i(k+1)^2}{12(k_i+1)}$	σ_i^2
0	2	3	4	3.000	2.000	1.563	3.125
1	2	0	4	2.333	4.667	1.563	7.292
1	0	3	4	2.667	4.667	1.563	7.292
1	2	3	0	2.000	2.000	1.563	3.125
						Sum	20.833

For BIBD1, the expected value, variance, test statistics and the standardized test statistics for Alvo are

$$E(Alvo_{BIBD1}) = \frac{b \cdot k(k+1)^2}{4} = \frac{4 \cdot 4(4+1)^2}{4} = 100,$$

$$V(Alvo_{BIBD1}) = 20.833,$$

$$Alvo_{BIBD1} = 1 \cdot 8.75 + 2 \cdot 11.25 + 3 \cdot 8.75 + 4 \cdot 11.25 = 102.5, \text{ and}$$

$$Z_{Alvo_{BIBD1}} = \frac{102.5 - 100}{\sqrt{20.833}} = 0.54772$$

respectively.

Table 4.15 shows the ranking and weights calculation, while Table 4.16 shows the variance calculations for Alvo BIBD2.

Table 4.15. Hospital Readmission Rates for Alvo BIBD2
Finding Ranking and Weights

Ranks(μ_{ij})									
μ_{i1}	μ_{i2}	μ_{i3}	μ_{i4}	k_i	$\frac{k+1}{k_i+1}$	$\frac{k+1}{k_i+1}\mu_{i1}$	$\frac{k+1}{k_i+1}\mu_{i2}$	$\frac{k+1}{k_i+1}\mu_{i3}$	$\frac{k+1}{k_i+1}\mu_{i4}$
1	**1.5**	**1.5**	2	2	1.667	1.667	2.500	2.500	3.333
1.5	**1.5**	1	2	2	1.667	2.500	2.500	1.667	3.333
1.5	1	2	**1.5**	2	1.667	2.500	1.667	3.333	2.500
1.5	2	**1.5**	1	2	1.667	2.500	3.333	2.500	1.667
2	1	**1.5**	**1.5**	2	1.667	3.333	1.667	2.500	2.500
1	**1.5**	2	**1.5**	2	1.667	1.667	2.500	3.333	2.500
						14.167	14.167	15.833	15.833

Table 4.16. Expected Rank, Mean of Expected Rank, and Variance Calculation
for Alvo BIBD2

O_{i1}	O_{i2}	O_{i3}	O_{i4}	$\bar{O}_i$	$\sum(O_{ij}-\bar{O}_i)^2$	$\frac{k_i(k+1)^2}{12(k_i+1)}$	σ_i^2
1	0	0	4	2.500	4.500	1.389	6.250
0	0	3	4	3.500	0.500	1.389	0.694
0	2	3	0	2.500	0.500	1.389	0.694
0	2	0	4	3.000	2.000	1.389	2.778
1	2	0	0	1.500	0.500	1.389	0.694
1	0	3	0	2.000	2.000	1.389	2.778
						Sum	13.888

For BIBD2, the expected value, variance, test statistics and the standardized test statistics for Alvo are

$$E(Alvo_{BIBD2}) = \frac{b \cdot k(k+1)^2}{4} = \frac{6 \cdot 4(4+1)^2}{4} = 150,$$

$$V(Alvo_{BIBD2}) = 13.889,$$

$$Alvo_{BIBD2} = 1 \cdot 14.167 + 2 \cdot 14.167 + 3 \cdot 15.833 + 4 \cdot 15.833, = 153.33, \text{ and}$$

$$Z_{Alvo_{BIBD2}} = \frac{153.33 - 150}{\sqrt{13.889}} = 0.8944$$

respectively.

Lastly, we will calculate the Alvo standardized test statistics, Z_{Alvo} given in Eq. (3.18) for Table 4.4. We will start by doing the ranking and weights calculation in Table 4.17 and using Table 4.18 for the variance calculation. The expected value, variance, test statistics and standardized test statistics for the Alvo are

$$E(Alvo) = \frac{n \cdot k(k+1)^2}{4} = \frac{18 \cdot 4(4+1)^2}{4} = 450,$$

$$Alvo = 1 \cdot 38.917 + 2 \cdot 45.417 + 3 \cdot 40.583 + 4 \cdot 55.083 = 471.833,$$

$$V(Alvo) = 101.389, \text{ and}$$

$$Z_{Alvo} = \frac{471.833 - 450}{\sqrt{101.389}} = 2.1683$$

respectively.

Table 4.17. Ranking, Weighted Values and Alvo Test Statistics Calculations for Mixed design

Ranks(μ_{ij})									
μ_{i1}	μ_{i2}	μ_{i3}	μ_{i4}	k_i	$\frac{k+1}{k_i+1}$	$\frac{k+1}{k_i+1}\mu_{i1}$	$\frac{k+1}{k_i+1}\mu_{i2}$	$\frac{k+1}{k_i+1}\mu_{i3}$	$\frac{k+1}{k_i+1}\mu_{i4}$
1	3	2	4	4	1.000	1.000	3.000	2.000	4.000
2	3	1	2	3	1.250	2.500	3.750	1.250	2.500
3	**2**	1	2	3	1.250	3.750	2.500	1.250	2.500
1	**1.5**	**1.5**	2	2	1.667	1.667	2.500	2.500	3.333
1.5	**1.5**	1	2	2	1.667	2.500	2.500	1.667	3.333
1	2	3	4	4	1.000	1.000	2.000	3.000	4.000
1	3	2	4	4	1.000	1.000	3.000	2.000	4.000
2	1	**1.5**	**1.5**	2	1.667	3.333	1.667	2.500	2.500
1	**1.5**	2	**1.5**	2	1.667	1.667	2.500	3.333	2.500
2	4	1	3	4	1.000	2.000	4.000	1.000	3.000
1	2	3	**2**	3	1.250	1.250	2.500	3.750	2.500
2	2	4	1	4	1.000	3.000	2.000	4.000	1.000
1	2	**2**	3	4	1.250	1.250	2.500	2.500	3.750
3	2	1	4	4	1.000	3.000	2.000	1.000	4.000
1.5	1	2	**1.5**	2	1.667	2.500	1.667	3.333	2.500
1.5	2	**1.5**	1	2	1.667	2.500	3.333	2.500	1.667
2	3	1	4	4	1.000	2.000	3.000	1.000	4.000
3	1	2	4	4	1.000	3.000	1.000	2.000	4.000
						38.917	45.417	40.583	55.083

Table 4.18. Variance Calculation for Alvo Mixed Design

O_{i1}	O_{i2}	O_{i3}	O_{i4}	$\bar{O}_i$	$\sum(O_{ij}-\bar{O}_i)^2$	$\frac{k_i(k+1)^2}{12(k_i+1)}$	σ_i^2
1	2	3	4	2.500	5.000	1.667	8.333
0	2	3	4	3.000	2.000	1.563	3.125
1	0	3	4	2.667	4.667	1.563	7.292
1	0	0	4	2.500	4.500	1.389	6.250
0	0	3	4	3.50	0.50	1.389	0.694
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
1	2	0	0	1.500	0.500	1.389	0.694
1	0	3	0	2.000	2.000	1.389	2.778
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	0	2.000	2.000	1.563	3.125
1	2	3	4	2.500	5.000	1.667	8.333
1	2	0	4	2.333	4.667	1.563	7.292
1	2	3	4	2.500	5.000	1.667	8.333
0	2	3	0	2.500	5.000	1.389	0.694
0	2	0	4	3.000	2.000	1.389	2.778
1	2	3	4	2.500	5.000	1.667	8.333
1	2	3	4	2.500	5.000	1.667	8.333
						Sum	101.389

Below are the proposed tests discussed in 4.2.2. for the DRG example.

1. The standardized first for JT (first proposed test), Z_9^* given in Eq. (4.11) is:

$$Z_9^* = \frac{1.9214 + 1.0443 + 0.8165}{\sqrt{3}} = 2.1837.$$

2. The standardized last for JT (second proposed test), Z_{10}^* given in Eq. (4.12) is:

$$Z_{11}^* = \frac{(32 + 8 + 4) - (24 + 6 + 3)}{\sqrt{17.34 + 13.334 + 1.5}} = 1.9393.$$

3. The standardized first for MJT (third proposed test), Z_{11}^* given in Eq. (4.13) is:

$$Z_{11}^* = \frac{1.9596 + 0.5477 + 0.8944}{\sqrt{3}} = 1.9640.$$

4. The standardized last for MJT (fourth proposed test), Z_{12}^* given in Eq. (4.14) is:

$$Z_{12}^* = \frac{(56 + 12 + 7) - (40 + 10 + 5)}{\sqrt{66.664 + 13.334 + 5}} = 2.1693.$$

5. The standardized first for SJT (fifth proposed test), Z^*_{13} given in Eq. (4.15) is:

$$Z^*_{13} = \frac{2.0028 + 0.2325 + 0.9285}{\sqrt{3}} = 1.8266.$$

6. The standardized last for SJT (sixth proposed test), Z^*_{14} given in Eq. (4.16) is:

$$Z^*_{14} = \frac{(118 + 22 + 15) - (80 + 20 + 10)}{\sqrt{360 + 73.994 + 29}} = 2.0913.$$

7. The standardized first for Alvo (seventh proposed test), Z^*_{15} given in Eq. (4.17) is:

$$Z^*_{15} = \frac{1.9596 + 0.5477 + 0.8944}{\sqrt{3}} = 1.9640.$$

8. The standardized last for Alvo (eighth proposed test), Z^*_{16} given in Eq. (4.18) is:

$$Z^*_{16} = \frac{(216 + 102.5 + 153.33) - (200 + 100 + 150)}{\sqrt{66.667 + 20.833 + 13.889}} = 2.1683.$$

Table 4.19. P-Values for the Eight Proposed Test for Example

<table>
<tr><th>Standardized</th><th>JT</th><th>MJT</th><th>SJT</th><th>Alvo</th><th>Alvo</th></tr>
<tr><td>First</td><td>0.0145</td><td>0.0248</td><td>0.0339</td><td>0.0248</td><td rowspan="2">0.0151</td></tr>
<tr><td>Last</td><td>0.0262</td><td>0.0150</td><td>0.0183</td><td>0.0151</td></tr>
</table>

We reject the null hypothesis since all the p-values in the Table 4.19 for all the proposed test are less than 5%, level of significance. We can also see that, the p-value for the standardized last for Alvo is the same as that of Alvo test. Also, the standardized first for MJT and standardized first for Alvo had the same p-value. Chapter 6 will confirms these results through the use of simulation.

5. SIMULATION STUDY

5.1. Simulation Process

This chapter talks about the details of the simulation process used in this research. Monte Carlo simulation was used to compare the estimated powers for the eight proposed tests under nondecreasing order alternative discussed in Chapter 4. SAS software was used to conduct the Monte Carlo simulation. Three different distributions were considered and data was simulated for $k-$treatment observations. The first random samples data were generated from a standard normal distribution, the second random samples were generated from an exponential distribution with mean of 1, and the last random samples data were generated from a T distribution with three degrees of freedom. A random seeds was setup to use the computer clock time throughout the simulation. Using the computer clock time for random seeds will allow us to create k- independent samples for the simulation. Three, four and five treatments were generated of size five thousand simulations for each RCBD and BIBD design.

Each of the four main test statistics discussed in Chapter 3 were calculated for each of the two designs and then the eight standardized test statistics were calculated as discussed in Chapter 4. Different number of blocks, and location parameters were considered for this simulation. Once the mixed design was simulated, the appropriate tests were applied and the decision to reject the null hypothesis was tracked with a counter variable. The counter variable tallied the number of times the null hypothesis was rejected by adding one every time the criterion was met. An If condition statement written as *If the test statistic > 1.645 then Counter + 1* was used to accomplish this. For each situation 5000 sets of samples were generated. The probability of rejecting was estimated by finding the number of times the null hypothesis was rejected divided by 5000. The first part of the simulation was to estimate the level of significance (α) for each of the proposed test. The level of significance was estimated to be around 5% for each of the proposed test. The second part of the simulation was estimating the power for each of the proposed tests using different sets of location parameters. Eight different cases were considered for the mixed design namely,

1. Three treatments for RCBD and three treatments with 1 missing for BIBD

2. Four treatments for RCBD and four treatments with 1 missing for BIBD
3. Four treatments for RCBD and four treatments with 2 missing for BIBD
4. Five treatments for RCBD and five treatments with 1 missing for BIBD
5. Five treatments for RCBD and five Treatments with 2 missing for BIBD
6. Five Treatments for RCBD and five Treatments with 3 missing for BIBD
7. Four Treatments for RCBD, four Treatments with 1 missing for BIBD and four Treatments with 2 missing for BIBD
8. Five Treatments for RCBD , five treatments with 1 missing for BIBD, five treatments with 2 missing for BIBD and five treatments with 3 missing for BIBD

5.2. Block Size

Below are the tables for the eight different cases mentioned above. Three different block combinations scenarios were considered, that is: more complete blocks, more incomplete block, and equal number of blocks.

Table 5.1. Three Treatments for RCBD and Three Treatments with 1 Missing for BIBD

Scenario	RCBD	BIBD
1 - Equal	6	6
2 - More Incomplete	6	12
3 - More Incomplete	6	18
4 - More Complete	12	6
5 - Equal	12	12
6 - More Incomplete	12	18
7 - More Complete	18	6
8 - More Complete	18	12
9 - Equal	18	18

5.3. Location Parameters

Since this simulation study considered only ordered alternatives. Different distances for the location parameter based on the number of treatment were considered.

5.3.1. Three Treatments (k=3)

14 different location parameter arrangements were considered. Below are the details of the location parameter arrangements.

Table 5.2. Four Treatments for RCBD and Four Treatments with 1 Missing for BIBD

Scenario	RCBD	BIBD
1 - Equal	6	6
2 - More Incomplete	6	12
3 - More Incomplete	6	18
4 - More Complete	12	6
5 - Equal	12	12
6 - More Incomplete	12	18
7 - More Complete	18	6
8 - More Complete	18	12
9 - Equal	18	18

Table 5.3. Four Treatments for RCBD and Four Treatments with 2 Missing for BIBD

Scenario	RCBD	BIBD
1 - Equal	6	6
2 - More Incomplete	6	12
3 - More Incomplete	6	18
4 - More Complete	12	6
5 - Equal	12	12
6 - More Incomplete	12	18
7 - More Complete	18	6
8 - More Complete	18	12
9 - Equal	18	18

1. Equal distance between the parameters, for example (0, 0.5, 1);
2. First two parameters are equal and third one is different, for example (0, 0, 1);
3. First parameter is different and last two are equal, for example (0, 1, 1);
4. Distance between the last two parameters is twice the distance between the first two parameters, for example (0.1, 0.3, 0.7);
5. Several other arrangements of unequal distances between parameters, for example (0, 0.1, 0.8) and (0, 0.3, 0.5);

5.3.2. Four Treatments (k=4)

17 different location parameter arrangements were considered. Below are the details of the location parameter arrangements.

1. Equal distances between the parameters, for example (0, 0.1, 0.2, 0.3);

Table 5.4. Five Treatments for RCBD and Five Treatments with 1 Missing for BIBD

Scenario	RCBD	BIBD
1 - Equal	10	10
2 - More Incomplete	10	20
3 - More Incomplete	10	30
4 - More Complete	20	10
5 - Equal	20	20
6 - More Incomplete	20	30
7 - More Complete	30	10
8 - More Complete	30	20
9 - Equal	30	30

Table 5.5. Five Treatments for RCBD and Five Treatments with 2 Missing for BIBD

Scenario	RCBD	BIBD
1 - Equal	10	10
2 - More Incomplete	10	20
3 - More Incomplete	10	30
4 - More Complete	20	10
5 - Equal	20	20
6 - More Incomplete	20	30
7 - More Complete	30	10
8 - More Complete	30	20
9 - Equal	30	30

2. First two parameters are equal and last two parameters are equal, for example (0, 0, 0.5, 0.5);
3. First two parameters are not equal and last two parameters are equal, for example (0, 0.25, 0.5, 0.5);
4. First two parameters are equal and last two parameters are not equal, for example (0, 0, 0.1, 0.6);
5. Distance between first two parameters is the same as the distance between the last two parameters, for example (0, 0.25, 0.25, 0.5);
6. Distance between third and fourth parameter is twice the distance between second and third parameter, and also the distance between the second and third parameter is twice the distance between first and second parameter, for example (0, 0.05, 0.15, 0.35) ;

Table 5.6. Five Treatments for RCBD and Five Treatments with 3 Missing for BIBD

Scenario	RCBD	BIBD
1 - Equal	10	10
2 - More Incomplete	10	20
3 - More Incomplete	10	30
4 - More Complete	20	10
5 - Equal	20	20
6 - More Incomplete	20	30
7 - More Complete	30	10
8 - More Complete	30	20
9 - Equal	30	30

Table 5.7. Four Treatments for RCBD, Four Treatments with 1 Missing for BIBD (BIBD1), and Four Treatments with 2 missing for BIBD (BIBD2)

Scenario	RCBD	BIBD1	BIBD2
1 - More Incomplete	6	6	6
2 - More Incomplete	6	6	12
3 - More Incomplete	6	18	18
4 - Equal	12	6	6
5 - Equal	24	12	12
6 - Equal	18	6	12
7 - More Complete	24	6	6
8 - More Complete	24	12	6
9 - More Complete	24	6	12

7. Several other arrangements of unequal distances between parameters, for example (0, 0, 0, 0.5) and (0.1, 0.2, 0.6, 1);

5.3.3. Five Treatments (k=5)

17 different location parameter arrangements were considered. Below are the details of the location parameter arrangements.

1. Equal distance between parameters, for example (0.1, 0.2, 0.3, 0.4, 0.5);

2. First four parameters are the same and the last one is different, for example (0, 0, 0, 0, 0.4);

3. First three parameters are the same and the last two are also equal, for example (0 , 0, 0, 0.25, 0.25);

4. First three parameters are the same and the last two are different, for example (0, 0, 0, 0.2, 0.5);

Table 5.8. Five Treatments for RCBD , Five Treatments with 1 Missing for BIBD (BIBD1), Five Treatments with 2 Missing for BIBD (BIBD2), and Five Treatments with 3 Missing for BIBD

Scenario	RCBD	BIBD1	BIBD2	BIBD3
1 - More Incomplete	10	10	10	10
2 - More Incomplete	10	20	20	20
3 - More Incomplete	20	10	20	30
4 - Equal	30	10	10	10
5 - Equal	60	20	20	20
6 - More Complete	40	10	10	10
7 - More Complete	60	10	10	10
8 - More Complete	60	10	20	10

5. First and last parameters are different and the middle three parameters are the same, for example (0, 0.25, 0.25, 0.25, 0.5);

6. The distance between the parameters doubles each time, for example (0, 0.1, 0.3, 0.6, 0.9);

7. Several other arrangements of unequal distances between parameters, for example (0, 0.1, 0.1, 0.4, 0.4) and (0.05, 0.2, 0.35,0.45,0.5);

6. RESULTS

The first part of this chapter will compare the results for the eight proposed tests discussed in the first part of Chapter 4 and the second part of this chapter will discuss the results of the first eight proposed tests in addition to the Alvo test statistics discussed in Chapter 3. The first two rows of each table tables shows the probability of committing a type 1 error, that is α value or the level of significance. We expect these alpha values to be close to 5%.

6.1. Three Treatments

Table 6.1 shows a summary of which tests performed best under certain scenarios. Appendix B has the power comparison tables for each scenario for three treatments mixed design. In certain situations, some tests performed better than the others and vice versa. When the number of blocks for BIBD is 18, the standardized first for MJT and Alvo performed better than all the other test. Through the simulation, we noticed that, the standardized first for MJT and Alvo had the same values. JT performed best when there were 6 blocks in BIBD with a block size of greater than 6 for RCBD. In other situations standardized last for Alvo outperformed the other tests.

Table 6.1. Summarized Power Comparison for All the Proposed Tests
(Tests that Performed Best Under Each Situation)

RCBD	BIBD	JT	MJT	SJT	Alvo
6	6				Last ✓
6	12		Last ✓		
6	18		First ✓		First ✓
12	6	Last ✓			
12	12				Last ✓
12	18		First ✓		First ✓
18	6	Last ✓			
18	12		Last ✓		
18	18		First ✓		First ✓

Figure 6.1 compares the power for the three distributions (normal, exponential, and t with 3 d.f.) for the location parameter (0, 0.5, 1). We can see from the figure that exponential distribution had the best more power while the t distribution with 3 degrees of freedom had the least powers. Since the exponential distribution is skewed to the right (that is, most data falls to the right), we expect it to reject more as compared to the t and normal distribution. The t-distribution on the

other hand, is skewed to the left, so we expect it to have less power. The level of significance, α, was estimated to be around 5% for the three distributions. This can be seen in the lower part of figure 6.1. Figure 6.2 also shows that, standardized last for Alvo out performs the other tests.

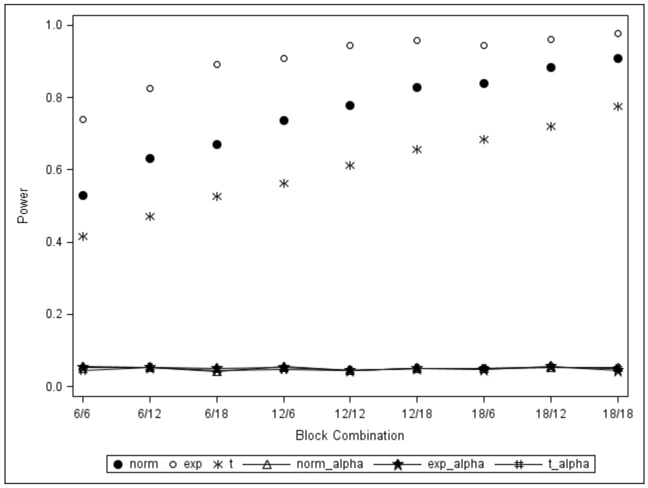

Figure 6.1. Standardized Last for ALvo Power Comparison for the Three Distributions with Location Parameter (0, 0.5, 1)

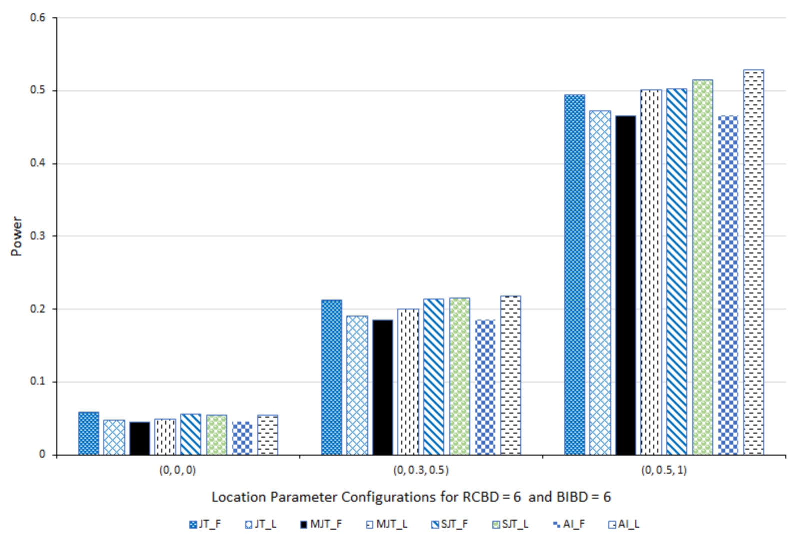

Figure 6.2. Three Treatments Power Comparison for RCBD = 6 Blocks and BIBD (1 Missing Observation)= 6 Blocks Under a Normal Distribution

Below, are some few tables from the simulation. The rest of the tables can be found in Appendix B.

Table 6.2. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0580	0.0448	0.0564	0.0448
			Last	0.0474	0.0486	0.0540	0.0546
0.0	0.0	0.5	First	0.2046	0.1856	0.2146	0.1856
			Last	0.1868	0.2074	0.2214	0.2304
0.0	0.5	0.5	First	0.2120	0.1838	0.2148	0.1838
			Last	0.1890	0.2008	0.2170	0.2252
0.05	0.25	0.5	First	0.1902	0.1694	0.1996	0.1694
			Last	0.1714	0.1872	0.1990	0.2094
0.0	0.3	0.5	First	0.2126	0.1854	0.2138	0.1854
			Last	0.1902	0.2004	0.2154	0.2178
0.0	0.0	1.0	First	0.4652	0.4538	0.5032	0.4538
			Last	0.4506	0.4874	0.5116	0.5124
0.0	1.0	1.0	First	0.4790	0.4568	0.5034	0.4568
			Last	0.4642	0.4984	0.5168	0.5198
0.0	0.5	1.0	First	0.4946	0.4656	0.5020	0.4656
			Last	0.4726	0.5006	0.5150	0.5290
0.5	0.5	1.0	First	0.2034	0.1798	0.2176	0.1798
			Last	0.1900	0.2088	0.2232	0.2332
0.5	1.0	1.0	First	0.2038	0.1822	0.2222	0.1822
			Last	0.1834	0.2014	0.2194	0.2348
0.1	0.5	1.0	First	0.4248	0.4042	0.4476	0.4042
			Last	0.4124	0.4400	0.4590	0.4680
0.1	0.3	0.7	First	0.2712	0.2448	0.2756	0.2448
			Last	0.2518	0.2666	0.2834	0.2838
0.2	0.5	0.8	First	0.2572	0.2310	0.2638	0.2310
			Last	0.2362	0.2530	0.2672	0.2684
0.0	0.25	0.5	First	0.2052	0.1756	0.2126	0.1756
			Last	0.1820	0.1928	0.2086	0.2264
0.0	0.1	0.8	First	0.3598	0.3348	0.3786	0.3348
			Last	0.3352	0.3590	0.3790	0.3826

Table 6.3. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0534	0.0404	0.0528	0.0404
			Last	0.0476	0.0500	0.0558	0.0538
0.0	0.0	0.5	First	0.3084	0.2852	0.3242	0.2852
			Last	0.2826	0.3108	0.3286	0.3294
0.0	0.5	0.5	First	0.3464	0.3152	0.3500	0.3152
			Last	0.3274	0.3412	0.3594	0.3614
0.05	0.25	0.5	First	0.2976	0.2700	0.3064	0.2700
			Last	0.2796	0.2978	0.3142	0.3150
0.0	0.3	0.5	First	0.3446	0.3136	0.3506	0.3136
			Last	0.3316	0.3456	0.3568	0.3616
0.0	0.0	1.0	First	0.6344	0.6320	0.6726	0.6320
			Last	0.6246	0.6722	0.6838	0.6900
0.0	1.0	1.0	First	0.6154	0.6158	0.6548	0.6158
			Last	0.6088	0.6460	0.6660	0.6770
0.0	0.5	1.0	First	0.7262	0.6988	0.7068	0.6988
			Last	0.7116	0.7224	0.7244	0.7392
0.5	0.5	1.0	First	0.3032	0.2826	0.3302	0.2826
			Last	0.2830	0.3096	0.3314	0.3394
0.5	1.0	1.0	First	0.3286	0.3006	0.3286	0.3006
			Last	0.3130	0.3228	0.3394	0.3410
0.1	0.5	1.0	First	0.6626	0.6344	0.6542	0.6344
			Last	0.6522	0.6664	0.6712	0.6876
0.1	0.3	0.7	First	0.4322	0.3996	0.4284	0.3996
			Last	0.4116	0.4274	0.4394	0.4484
0.2	0.5	0.8	First	0.4216	0.3900	0.4166	0.3900
			Last	0.4024	0.4180	0.4284	0.4408
0.0	0.25	0.5	First	0.3550	0.3188	0.3528	0.3188
			Last	0.3274	0.3450	0.3612	0.3762
0.0	0.1	0.8	First	0.5536	0.5316	0.5638	0.5316
			Last	0.5388	0.5610	0.5764	0.5878

Table 6.4. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0456	0.0446	0.0508	0.0446
			Last	0.0462	0.0404	0.0484	0.0450
0.0	0.0	0.5	First	0.1690	0.1508	0.1844	0.1508
			Last	0.1520	0.1652	0.1798	0.1994
0.0	0.5	0.5	First	0.1694	0.1398	0.1688	0.1398
			Last	0.1536	0.1612	0.1766	0.1798
0.05	0.25	0.5	First	0.1552	0.1330	0.1608	0.1330
			Last	0.1388	0.1490	0.1602	0.1794
0.0	0.3	0.5	First	0.1600	0.1402	0.1722	0.1402
			Last	0.1426	0.1578	0.1702	0.1692
0.0	0.0	1.0	First	0.3564	0.3350	0.3812	0.3350
			Last	0.3374	0.3618	0.3848	0.3934
0.0	1.0	1.0	First	0.3462	0.3234	0.3740	0.3234
			Last	0.3256	0.3596	0.3806	0.3850
0.0	0.5	1.0	First	0.3838	0.3542	0.3900	0.3542
			Last	0.3668	0.3896	0.4004	0.4148
0.5	0.5	1.0	First	0.1714	0.1488	0.1744	0.1488
			Last	0.1526	0.1576	0.1704	0.1840
0.5	1.0	1.0	First	0.1648	0.1430	0.1736	0.1430
			Last	0.1496	0.1602	0.1756	0.1820
0.1	0.5	1.0	First	0.3248	0.2954	0.3320	0.2954
			Last	0.3018	0.3208	0.3376	0.3419
0.1	0.3	0.7	First	0.1918	0.1670	0.1950	0.1670
			Last	0.1748	0.1856	0.2014	0.2192
0.2	0.5	0.8	First	0.2166	0.1880	0.2192	0.1880
			Last	0.1924	0.2026	0.2182	0.2290
0.0	0.25	0.5	First	0.1732	0.1508	0.1788	0.1508
			Last	0.1580	0.1652	0.1794	0.1849
0.0	0.1	0.8	First	0.2782	0.2532	0.2886	0.2532
			Last	0.2636	0.2798	0.2956	0.2972

Table 6.5. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0504	0.0452	0.0458	0.0452
			Last	0.0434	0.0402	0.0456	0.0438
0.0	0.0	0.5	First	0.5392	0.5264	0.5104	0.5264
			Last	0.4826	0.5050	0.5216	0.5466
0.0	0.5	0.5	First	0.5332	0.5258	0.5188	0.5258
			Last	0.4856	0.5050	0.5248	0.5378
0.05	0.25	0.5	First	0.5108	0.4940	0.4772	0.4940
			Last	0.4644	0.4758	0.4856	0.5238
0.0	0.3	0.5	First	0.5794	0.5578	0.5404	0.5578
			Last	0.5276	0.5380	0.5434	0.5808
0.0	0.0	1.0	First	0.8950	0.9062	0.8918	0.9062
			Last	0.8824	0.9018	0.9046	0.9154
0.0	1.0	1.0	First	0.8878	0.8946	0.8908	0.8946
			Last	0.8648	0.8886	0.8980	0.9038
0.0	0.5	1.0	First	0.9394	0.9378	0.9230	0.9378
			Last	0.9298	0.9356	0.9286	0.9442
0.5	0.5	1.0	First	0.5344	0.5268	0.5178	0.5268
			Last	0.4824	0.4986	0.5154	0.5392
0.5	1.0	1.0	First	0.5386	0.5320	0.5242	0.5320
			Last	0.4950	0.5138	0.5288	0.5432
0.1	0.5	1.0	First	0.9050	0.8986	0.8774	0.8986
			Last	0.8878	0.8906	0.8798	0.9054
0.1	0.3	0.7	First	0.6786	0.6650	0.6356	0.6650
			Last	0.6406	0.6432	0.6464	0.6818
0.2	0.5	0.8	First	0.4222	0.4100	0.4018	0.4100
			Last	0.3724	0.3878	0.4052	0.4324
0.0	0.25	0.5	First	0.3436	0.3274	0.3146	0.3274
			Last	0.2896	0.3010	0.3150	0.3479
0.0	0.1	0.8	First	0.6014	0.5894	0.5784	0.5894
			Last	0.5554	0.5726	0.5866	0.6160

Table 6.6. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0510	0.0546	0.0534	0.0546
			Last	0.0550	0.0520	0.0478	0.0512
0.0	0.0	0.5	First	0.5446	0.5980	0.5732	0.5980
			Last	0.5598	0.5818	0.5534	0.5878
0.0	0.5	0.5	First	0.5546	0.6044	0.5726	0.6044
			Last	0.5696	0.5880	0.5544	0.5946
0.05	0.25	0.5	First	0.5438	0.5690	0.5452	0.5690
			Last	0.5528	0.5594	0.5230	0.5678
0.0	0.3	0.5	First	0.5992	0.6264	0.5976	0.6264
			Last	0.6090	0.6170	0.5794	0.6202
0.0	1.0	1.0	First	0.9298	0.9516	0.9446	0.9516
			Last	0.9368	0.9490	0.9374	0.9514
0.0	0.5	1.0	First	0.9104	0.9380	0.9352	0.9380
			Last	0.9146	0.9326	0.9272	0.9376
0.5	0.5	1.0	First	0.9588	0.9786	0.9576	0.9786
			Last	0.9632	0.9690	0.9522	0.9698
0.5	1.0	1.0	First	0.5652	0.6106	0.5888	0.6106
			Last	0.5812	0.6004	0.5710	0.6010
0.1	0.5	1.0	First	0.5508	0.5852	0.5670	0.5852
			Last	0.5600	0.5796	0.5498	0.5812
0.1	0.3	0.7	First	0.9310	0.9492	0.9192	0.9492
			Last	0.9352	0.9370	0.9176	0.9394
0.2	0.5	0.8	First	0.7172	0.7548	0.7208	0.7548
			Last	0.7330	0.7444	0.7016	0.7456
0.0	0.25	0.5	First	0.7078	0.7374	0.7008	0.7374
			Last	0.7198	0.7262	0.6858	0.7290
0.0	0.1	0.8	First	0.6028	0.6322	0.5988	0.6322
			Last	0.6120	0.6274	0.5856	0.6306
0.0	0.0	1.0	First	0.8616	0.8838	0.8630	0.8838
			Last	0.8692	0.8770	0.8514	0.8822

6.2. Four Treatments

For four treatments mixed design with 1 missing observation per block for BIBD, the standardized last for Alvo performed better than the other test when there were 12 block in BIBD design. The standardized last for JT performed better than the other test when the number of block for RCBD and BIBD were 6 and 18 or 18 and 6 respectively. The standardize last for MJT performed better than the other test when there was 6 and 6 blocks or 12 and 18 blocks or 18 and 18 blocks for RCBD and BIBD respectively.

Table 6.7. Test Which Performed Best for 4 Treatment with 1 Missing

RCBD	BIBD	JT	MJT	SJT	Alvo
6	6		Last ✓		
6	12				Last ✓
6	18	Last ✓			
12	6			Last ✓	
12	12				Last ✓
12	18		Last ✓		
18	6	Last ✓			
18	12				Last ✓
18	18		Last ✓		

Table 6.8. Test Which Performed Best for 4 Treatment with 2 Missing

RCBD	BIBD	JT	MJT	SJT	Alvo
6	6				Last ✓
6	12		Last ✓		
6	18	Last ✓			
12	6		Last ✓		
12	12	Last ✓			
12	18				Last ✓
18	6				Last ✓
18	12				Last ✓
18	18				Last ✓

For four treatments mixed design with 2 missing observations per block for BIBD, the standardized last for MJT performed better when RCBD and BIBD had 6 and 12 or 12 and 6 blocks respectively. The standardized last for Alvo performed pretty well as the number of blocks started increasing for both RCBD and BIBD. Figure 6.3 shows the power comparison for six blocks for both RCBD and BIBD (1 missing observation per block) designs. The standardized last for MJT outperformed the other tests and the level of significance, α was estimated to be around 5%.

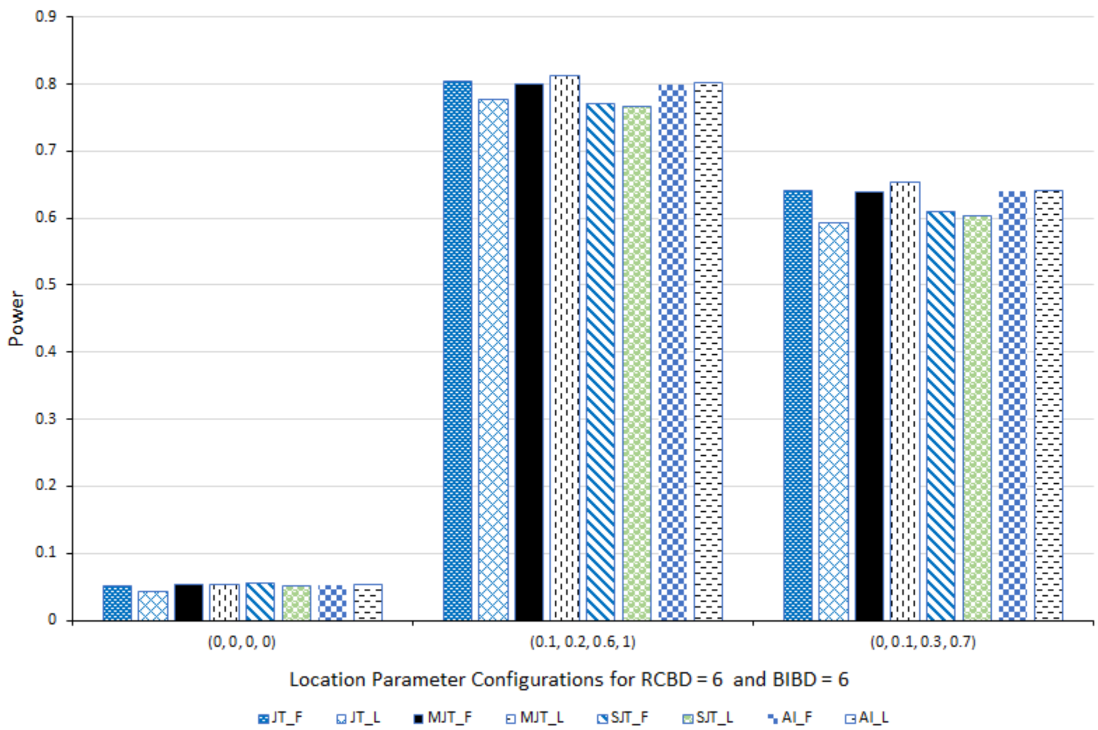

Figure 6.3. Four Treatments Power Comparison for RCBD = 6 Blocks and BIBD (1 Missing Observation)= 6 Blocks Under a Exponential Distribution

Below, are some few tables from the simulation. The rest of the tables can be found in Appendix B.

Table 6.9. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0524	0.0508	0.0514	0.0508
				Last	0.0424	0.0514	0.0510	0.0510
0	0.1	0.2	0.3	First	0.2966	0.3072	0.2952	0.3072
				Last	0.2650	0.3080	0.2940	0.3082
0	0	0.25	0.25	First	0.2820	0.3020	0.2908	0.3020
				Last	0.2538	0.3046	0.2878	0.3052
0	0.125	0.25	0.25	First	0.2518	0.2582	0.2424	0.2582
				Last	0.2252	0.2588	0.2438	0.2614
0	0	0	0.5	First	0.4062	0.4418	0.4416	0.4418
				Last	0.3728	0.4422	0.4410	0.4472
0.05	0.1	0.3	0.5	First	0.5022	0.5190	0.4902	0.5190
				Last	0.4646	0.5190	0.4874	0.5194
0	0	0.5	0.5	First	0.6162	0.6550	0.6268	0.6550
				Last	0.5874	0.6560	0.6216	0.6600
0	0.25	0.5	0.5	First	0.5436	0.5640	0.5424	0.5640
				Last	0.5130	0.5646	0.5378	0.5738
0	0.5	0.5	1	First	0.8686	0.8806	0.8626	0.8806
				Last	0.8484	0.8812	0.8616	0.8816
0	0.25	0.25	0.5	First	0.4734	0.4858	0.4800	0.4858
				Last	0.4400	0.4884	0.4742	0.4918
0	0.25	0.25	0.25	First	0.2116	0.2244	0.2168	0.2244
				Last	0.1894	0.2258	0.2160	0.2358
0.1	0.2	0.6	1	First	0.9016	0.9084	0.8856	0.9084
				Last	0.8862	0.9088	0.8844	0.9096
0.25	0.25	0.5	0.5	First	0.2842	0.3080	0.2922	0.3080
				Last	0.2568	0.3106	0.2898	0.3108
0	0.1	0.3	0.7	First	0.7494	0.7604	0.7340	0.7604
				Last	0.7194	0.7616	0.7274	0.7636
0	0.05	0.15	0.35	First	0.3360	0.3496	0.3378	0.3496
				Last	0.3040	0.3512	0.3370	0.3524
0	0.15	0.2	0.5	First	0.4896	0.5086	0.4968	0.5086
				Last	0.4564	0.5114	0.4946	0.5194
0	0	0.1	0.6	First	0.5780	0.6078	0.5938	0.6078
				Last	0.5448	0.6070	0.5910	0.6114
0	0	0.05	0.3	First	0.2578	0.2672	0.2604	0.2672
				Last	0.2292	0.2672	0.2610	0.2676

Table 6.10. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0480	0.0500	0.0498	0.0500
				Last	0.0516	0.0506	0.0488	0.0500
0	0.1	0.2	0.3	First	0.2312	0.2400	0.2340	0.2400
				Last	0.2396	0.2488	0.2334	0.2400
0	0	0.25	0.25	First	0.2224	0.2344	0.2218	0.2344
				Last	0.2336	0.2388	0.2244	0.2342
0	0.125	0.25	0.25	First	0.1820	0.1934	0.1944	0.1934
				Last	0.1910	0.1964	0.1918	0.1930
0	0	0	0.5	First	0.3908	0.4054	0.4060	0.4054
				Last	0.4034	0.4164	0.4062	0.4066
0.05	0.1	0.3	0.5	First	0.4128	0.4342	0.4148	0.4342
				Last	0.4260	0.4392	0.4202	0.4346
0	0	0.5	0.5	First	0.5636	0.5878	0.5604	0.5878
				Last	0.5802	0.5918	0.5528	0.5886
0	0.25	0.5	0.5	First	0.4610	0.4866	0.4736	0.4866
				Last	0.4734	0.4922	0.4724	0.4886
0	0.5	0.5	1	First	0.8510	0.8688	0.8684	0.8688
				Last	0.8580	0.8720	0.8680	0.8708
0	0.25	0.25	0.5	First	0.3842	0.4018	0.4040	0.4018
				Last	0.3994	0.4098	0.4034	0.4008
0	0.25	0.25	0.25	First	0.1614	0.1730	0.1712	0.1730
				Last	0.1742	0.1784	0.1690	0.1726
0.1	0.2	0.6	1	First	0.8728	0.8938	0.8832	0.8938
				Last	0.8790	0.8946	0.8808	0.8940
0.25	0.25	0.5	0.5	First	0.2330	0.2442	0.2356	0.2442
				Last	0.2494	0.2538	0.2382	0.2456
0	0.1	0.3	0.7	First	0.6820	0.7028	0.6916	0.7028
				Last	0.6896	0.7076	0.6828	0.7030
0	0.05	0.15	0.35	First	0.2762	0.2874	0.2796	0.2874
				Last	0.2896	0.2934	0.2804	0.2874
0	0.15	0.2	0.5	First	0.4022	0.4200	0.4174	0.4200
				Last	0.4174	0.4280	0.4178	0.4220
0	0	0.1	0.6	First	0.5300	0.5504	0.5450	0.5504
				Last	0.5440	0.5598	0.5388	0.5510
0	0	0.05	0.3	First	0.2292	0.2372	0.2292	0.2372
				Last	0.2426	0.2426	0.2356	0.2384

Table 6.11. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0498	0.0484	0.0494	0.0484
				Last	0.0454	0.0528	0.0520	0.0500
0	0.1	0.2	0.3	First	0.2138	0.2158	0.2166	0.2158
				Last	0.1984	0.2256	0.2186	0.2206
0	0	0.25	0.25	First	0.2080	0.2100	0.1992	0.2100
				Last	0.1914	0.2150	0.2006	0.2130
0	0.125	0.25	0.25	First	0.1802	0.1846	0.1808	0.1846
				Last	0.1646	0.1876	0.1788	0.1848
0	0	0	0.5	First	0.3514	0.3592	0.3506	0.3592
				Last	0.3380	0.3704	0.3620	0.3656
0.05	0.1	0.3	0.5	First	0.3720	0.3816	0.3678	0.3816
				Last	0.3540	0.3904	0.3702	0.3872
0	0	0.5	0.5	First	0.4964	0.5154	0.4926	0.5154
				Last	0.4836	0.5278	0.4968	0.5192
0	0.25	0.5	0.5	First	0.4248	0.4382	0.4244	0.4382
				Last	0.4118	0.4546	0.4286	0.4490
0	0.5	0.5	1	First	0.7754	0.7922	0.7912	0.7922
				Last	0.7650	0.7998	0.7880	0.7974
0	0.25	0.25	0.5	First	0.3538	0.3576	0.3586	0.3576
				Last	0.3340	0.3630	0.3548	0.3606
0	0.25	0.25	0.25	First	0.1506	0.1534	0.1578	0.1534
				Last	0.1438	0.1596	0.1528	0.1560
0.1	0.2	0.6	1	First	0.8090	0.8252	0.8128	0.8252
				Last	0.8006	0.8386	0.8158	0.8306
0.25	0.25	0.5	0.5	First	0.2100	0.2138	0.2094	0.2138
				Last	0.1974	0.2218	0.2094	0.2170
0	0.1	0.3	0.7	First	0.5986	0.6124	0.6096	0.6124
				Last	0.5836	0.6266	0.6102	0.6230
0	0.05	0.15	0.35	First	0.2534	0.2570	0.2468	0.2570
				Last	0.2382	0.2628	0.2510	0.2560
0	0.15	0.2	0.5	First	0.3580	0.3722	0.3660	0.3722
				Last	0.3420	0.3768	0.3650	0.3750
0	0	0.1	0.6	First	0.4674	0.4816	0.4734	0.4816
				Last	0.4558	0.4924	0.4764	0.4870
0	0	0.05	0.3	First	0.2118	0.2120	0.2054	0.2120
				Last	0.2022	0.2180	0.2040	0.2144

Table 6.12. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0452	0.0518	0.0522	0.0518
				Last	0.0530	0.0556	0.0576	0.0528
0	0.1	0.2	0.3	First	0.1254	0.1462	0.1416	0.1462
				Last	0.1440	0.1516	0.1434	0.1478
0	0	0.25	0.25	First	0.1246	0.1422	0.1402	0.1422
				Last	0.1358	0.1452	0.1392	0.1438
0	0.125	0.25	0.25	First	0.1172	0.1342	0.1294	0.1342
				Last	0.1312	0.1386	0.1364	0.1340
0	0	0	0.5	First	0.1896	0.2114	0.2068	0.2114
				Last	0.2056	0.2176	0.2110	0.2118
0.05	0.1	0.3	0.5	First	0.2008	0.2320	0.2246	0.2320
				Last	0.2138	0.2368	0.2184	0.2318
0	0	0.5	0.5	First	0.2758	0.3156	0.2998	0.3156
				Last	0.3008	0.3234	0.3044	0.3202
0	0.25	0.5	0.5	First	0.2262	0.2592	0.2548	0.2592
				Last	0.2532	0.2672	0.2560	0.2646
0	0.5	0.5	1	First	0.4686	0.5192	0.5120	0.5192
				Last	0.4990	0.5324	0.5184	0.5286
0	0.25	0.25	0.5	First	0.1902	0.2160	0.2166	0.2160
				Last	0.2140	0.2258	0.2184	0.2214
0	0.25	0.25	0.25	First	0.0980	0.1094	0.1078	0.1094
				Last	0.1144	0.1182	0.1136	0.1140
0.1	0.2	0.6	1	First	0.4978	0.5440	0.5272	0.5440
				Last	0.5374	0.5594	0.5294	0.5486
0.25	0.25	0.5	0.5	First	0.1286	0.1500	0.1414	0.1500
				Last	0.1462	0.1539	0.1414	0.1452
0	0.1	0.3	0.7	First	0.3280	0.3780	0.3666	0.3780
				Last	0.3546	0.3878	0.3702	0.3822
0	0.05	0.15	0.35	First	0.1392	0.1654	0.1598	0.1654
				Last	0.1554	0.1678	0.1650	0.1662
0	0.15	0.2	0.5	First	0.2026	0.2300	0.2264	0.2300
				Last	0.2216	0.2344	0.2304	0.2290
0	0	0.1	0.6	First	0.2660	0.3006	0.2902	0.3006
				Last	0.2886	0.3080	0.2928	0.3036
0	0	0.05	0.3	First	0.1260	0.1386	0.1386	0.1386
				Last	0.1430	0.1442	0.1398	0.1408

Table 6.13. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0532	0.0546	0.0524	0.0546
				Last	0.0512	0.0536	0.0488	0.0498
0	0.1	0.2	0.3	First	0.2634	0.2732	0.2678	0.2732
				Last	0.3048	0.3164	0.2924	0.3130
0	0	0.25	0.25	First	0.2646	0.2700	0.2548	0.2700
				Last	0.3028	0.3140	0.2862	0.3080
0	0.125	0.25	0.25	First	0.2364	0.2398	0.2338	0.2398
				Last	0.2656	0.2696	0.2456	0.2652
0	0	0	0.5	First	0.3818	0.3974	0.4078	0.3974
				Last	0.4380	0.4594	0.4470	0.4520
0.05	0.1	0.3	0.5	First	0.4434	0.4568	0.4386	0.4568
				Last	0.5084	0.5204	0.4814	0.5118
0	0	0.5	0.5	First	0.5694	0.5926	0.5664	0.5926
				Last	0.6410	0.6622	0.6228	0.6618
0	0.25	0.5	0.5	First	0.5098	0.5238	0.5050	0.5238
				Last	0.5662	0.5808	0.5454	0.5784
0	0.5	0.5	1	First	0.8326	0.8360	0.8182	0.8360
				Last	0.8948	0.9046	0.8780	0.8960
0	0.25	0.25	0.5	First	0.4098	0.4166	0.4146	0.4166
				Last	0.4756	0.4892	0.4650	0.4804
0	0.25	0.25	0.25	First	0.1786	0.1816	0.1872	0.1816
				Last	0.2074	0.2136	0.1978	0.2024
0.1	0.2	0.6	1	First	0.8512	0.8600	0.8320	0.8600
				Last	0.9164	0.9256	0.8880	0.9160
0.25	0.25	0.5	0.5	First	0.2712	0.2816	0.2696	0.2816
				Last	0.3032	0.3251	0.2860	0.3188
0	0.1	0.3	0.7	First	0.6684	0.6866	0.6640	0.6866
				Last	0.7616	0.7644	0.7306	0.7590
0	0.05	0.15	0.35	First	0.3196	0.3240	0.3122	0.3240
				Last	0.3592	0.3716	0.3482	0.3632
0	0.15	0.2	0.5	First	0.4488	0.4580	0.4514	0.4580
				Last	0.5158	0.5260	0.4940	0.5178
0	0	0.1	0.6	First	0.5250	0.5336	0.5274	0.5336
				Last	0.5922	0.6060	0.5850	0.6032
0	0	0.05	0.3	First	0.2468	0.2474	0.2496	0.2474
				Last	0.2726	0.2874	0.2656	0.2782

Table 6.14. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0546	0.0520	0.0516	0.0520
				Last	0.0526	0.0526	0.0510	0.0536
0	0.1	0.2	0.3	First	0.1618	0.1620	0.1562	0.1620
				Last	0.1738	0.1736	0.1672	0.1762
0	0	0.25	0.25	First	0.1624	0.1634	0.1622	0.1634
				Last	0.1832	0.1866	0.1718	0.1942
0	0.125	0.25	0.25	First	0.1342	0.1408	0.1370	0.1408
				Last	0.1464	0.1498	0.1464	0.1527
0	0	0	0.5	First	0.2572	0.2666	0.2698	0.2666
				Last	0.2908	0.2970	0.2894	0.3026
0.05	0.1	0.3	0.5	First	0.2664	0.2784	0.2700	0.2784
				Last	0.3000	0.3066	0.2892	0.3162
0	0	0.5	0.5	First	0.3588	0.3836	0.3678	0.3836
				Last	0.4106	0.4280	0.4056	0.4332
0	0.25	0.5	0.5	First	0.3118	0.3210	0.3124	0.3210
				Last	0.3508	0.3602	0.3414	0.3610
0	0.5	0.5	1	First	0.6172	0.6408	0.6336	0.6408
				Last	0.6808	0.6940	0.6858	0.6960
0	0.25	0.25	0.5	First	0.2582	0.2680	0.2608	0.2680
				Last	0.2942	0.3036	0.2922	0.3122
0	0.25	0.25	0.25	First	0.1298	0.1346	0.1362	0.1346
				Last	0.1420	0.1452	0.1392	0.1644
0.1	0.2	0.6	1	First	0.6262	0.6530	0.6336	0.6530
				Last	0.7018	0.7220	0.6946	0.7240
0.25	0.25	0.5	0.5	First	0.1612	0.1630	0.1550	0.1630
				Last	0.1808	0.1876	0.1702	0.1891
0	0.1	0.3	0.7	First	0.4402	0.4616	0.4522	0.4616
				Last	0.4940	0.5030	0.4940	0.5156
0	0.05	0.15	0.35	First	0.1924	0.1914	0.1904	0.1914
				Last	0.2092	0.2166	0.2046	0.2256
0	0.15	0.2	0.5	First	0.2692	0.2782	0.2810	0.2782
				Last	0.3020	0.3106	0.2984	0.3194
0	0	0.1	0.6	First	0.3366	0.3534	0.3574	0.3534
				Last	0.3912	0.4092	0.4030	0.4127
0	0	0.05	0.3	First	0.1512	0.1470	0.1476	0.1470
				Last	0.1742	0.1752	0.1644	0.1788

6.3. Five Treatments

For the mixed design with 1 missing observation per block, the standardized first for MJT and Alvo performed better than the other test when RCBD and BIBD had 10 and 20 or 20 and 30 blocks respectively. Standardized last for MJT performed better in only one instance, that is when 10 and 10 blocks for RCBD and BIBD respectively. Standardized last for Alvo performed better here in most of the cases.

Table 6.15. Test Which Performed Best for 5 Treatment with 1 Missing

RCBD	BIBD	JT	MJT	SJT	Alvo
10	10		Last ✓		
10	20		First ✓		First ✓
10	30				Last ✓
20	10				Last ✓
20	20				Last ✓
20	30		First ✓		First ✓
30	10				Last ✓
30	20				Last ✓
30	30				Last ✓

For the mixed design with 2 missing observations per block, the standardized last for Alvo outperformed the rest of the tests.

Table 6.16. Test Which Performed Best for 5 Treatment with 2 Missing

RCBD	BIBD	JT	MJT	SJT	Alvo
10	10				Last ✓
10	20				Last ✓
10	30				Last ✓
20	10				Last ✓
20	20				Last ✓
20	30				Last ✓
30	10				Last ✓
30	20				Last ✓
30	30				Last ✓

When there were 3 missing observations per block, standardized last for Alvo outperformed the other test except when the number of blocks were 10 and 10 for RCBD and BIBD respectively, in which standardized last for JT outperformed the other tests. Below, are some few tables from the simulation. The rest of the tables can be found in Appendix B.

Table 6.17. Test Which Performed Best for 5 Treatment with 3 Missing

RCBD	BIBD	JT	MJT	SJT	Alvo
10	10	Last ✓			
10	20				Last ✓
10	30				Last ✓
20	10				Last ✓
20	20				Last ✓
20	30				Last ✓
30	10				Last ✓
30	20				Last ✓
30	30				Last ✓

Table 6.18. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0516	0.0512	0.0516
					Last	0.0498	0.0564	0.0530	0.0556
0.05	0.15	0.25	0.35	0.45	First	0.2952	0.3116	0.3038	0.3116
					Last	0.2790	0.3210	0.3086	0.3136
0	0.025	0.075	0.175	0.375	First	0.2582	0.2658	0.2648	0.2658
					Last	0.2464	0.2746	0.2648	0.2694
0	0	0	0	0.5	First	0.2892	0.3014	0.3068	0.3014
					Last	0.2746	0.3056	0.3052	0.3012
0	0	0	0.125	0.25	First	0.1702	0.1756	0.1750	0.1756
					Last	0.1570	0.1794	0.1708	0.1774
0	0	0.125	0.25	0.25	First	0.2076	0.2154	0.2104	0.2154
					Last	0.1942	0.2176	0.2038	0.2138
0	0.05	0.05	0.3	0.3	First	0.2326	0.2502	0.2432	0.2502
					Last	0.2210	0.2580	0.2414	0.2534
0.05	0.2	0.3	0.4	0.5	First	0.3400	0.3544	0.3540	0.3544
					Last	0.3200	0.3652	0.3560	0.3548
0	0	0	0.25	0.5	First	0.4048	0.4262	0.4206	0.4262
					Last	0.3832	0.4302	0.4192	0.4244
0	0	0	0.35	0.35	First	0.3126	0.3290	0.3140	0.3290
					Last	0.3006	0.3330	0.3112	0.3308
0	0	0.25	0.25	0.5	First	0.4056	0.4258	0.4168	0.4258
					Last	0.3874	0.4300	0.4158	0.4246
0	0.125	0.25	0.25	0.25	First	0.1804	0.1898	0.1858	0.1898
					Last	0.1690	0.1952	0.1842	0.1922
0	0.125	0.125	0.125	0.25	First	0.1366	0.1428	0.1442	0.1428
					Last	0.1280	0.1488	0.1452	0.1446
0	0.125	0.125	0.125	0.125	First	0.0888	0.0862	0.0884	0.0862
					Last	0.0830	0.0928	0.0904	0.0896
0.125	0.125	0.125	0.25	0.25	First	0.1054	0.1078	0.1034	0.1078
					Last	0.0964	0.1138	0.1050	0.1100
0	0	0	0.1	0.3	First	0.1994	0.2046	0.1996	0.2046
					Last	0.1850	0.2084	0.1984	0.2050
0	0	0	0.2	0.7	First	0.5570	0.5734	0.5658	0.5734
					Last	0.5344	0.5812	0.5640	0.5732
0	0.1	0.1	0.6	0.6	First	0.5956	0.6208	0.5978	0.6208
					Last	0.5796	0.6244	0.5984	0.6220
0	0.1	0.3	0.4	0.4	First	0.3446	0.3646	0.3500	0.3646
					Last	0.3280	0.3708	0.3506	0.3660
0	0.05	0.2	0.4	0.4	First	0.3522	0.3770	0.3602	0.3770
					Last	0.3378	0.3766	0.3542	0.3764

Table 6.19. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0490	0.0472	0.0498	0.0472
					Last	0.0452	0.0510	0.0492	0.0488
0.05	0.15	0.25	0.35	0.45	First	0.5540	0.5668	0.5538	0.5668
					Last	0.5280	0.5662	0.5468	0.5650
0	0.025	0.075	0.175	0.375	First	0.4846	0.4924	0.4694	0.4924
					Last	0.4608	0.4970	0.4726	0.4948
0	0	0	0	0.5	First	0.4688	0.4922	0.5064	0.4922
					Last	0.4450	0.5016	0.5038	0.4970
0	0	0	0.125	0.25	First	0.2978	0.3086	0.2984	0.3086
					Last	0.2848	0.3170	0.3006	0.3090
0	0	0.125	0.25	0.25	First	0.3930	0.4098	0.3910	0.4098
					Last	0.3730	0.4174	0.3908	0.4086
0	0.05	0.05	0.3	0.3	First	0.4324	0.4588	0.4428	0.4588
					Last	0.4206	0.4654	0.4448	0.4602
0.05	0.2	0.3	0.4	0.5	First	0.6192	0.6306	0.6134	0.6306
					Last	0.6014	0.6388	0.6098	0.6342
0	0	0	0.25	0.5	First	0.6890	0.7006	0.6844	0.7006
					Last	0.6716	0.7096	0.6808	0.7012
0	0	0	0.35	0.35	First	0.5486	0.5768	0.5572	0.5768
					Last	0.5272	0.5844	0.5556	0.5800
0	0	0.25	0.25	0.5	First	0.7014	0.7182	0.6954	0.7182
					Last	0.6840	0.7220	0.6924	0.7202
0	0.125	0.25	0.25	0.25	First	0.3074	0.3190	0.3112	0.3190
					Last	0.2930	0.3196	0.3094	0.3182
0	0.125	0.125	0.125	0.25	First	0.2356	0.2470	0.2488	0.2470
					Last	0.2222	0.2546	0.2514	0.2484
0	0.125	0.125	0.125	0.125	First	0.1200	0.1214	0.1196	0.1214
					Last	0.1080	0.1238	0.1184	0.1198
0.125	0.125	0.125	0.25	0.25	First	0.1714	0.1840	0.1768	0.1840
					Last	0.1570	0.1844	0.1726	0.1810
0	0	0	0.1	0.3	First	0.3356	0.3514	0.3526	0.3514
					Last	0.3208	0.3552	0.3446	0.3476
0	0	0	0.2	0.7	First	0.8260	0.8362	0.8274	0.8362
					Last	0.8086	0.8414	0.8280	0.8384
0	0.1	0.1	0.6	0.6	First	0.8664	0.8786	0.8562	0.8786
					Last	0.8566	0.8840	0.8580	0.8802
0	0.1	0.3	0.4	0.4	First	0.6076	0.6230	0.5978	0.6230
					Last	0.5858	0.6280	0.5946	0.6258
0	0.05	0.2	0.4	0.4	First	0.6404	0.6598	0.6322	0.6598
					Last	0.6220	0.6604	0.6276	0.6602

Table 6.20. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0494	0.0470	0.0494
					Last	0.0490	0.0516	0.0470	0.0512
0.05	0.15	0.25	0.35	0.45	First	0.2298	0.2392	0.2316	0.2392
					Last	0.2158	0.2412	0.2340	0.2394
0	0.025	0.075	0.175	0.375	First	0.2052	0.2096	0.2016	0.2096
					Last	0.1888	0.2134	0.2030	0.2094
0	0	0	0	0.5	First	0.2244	0.2316	0.2376	0.2316
					Last	0.2128	0.2394	0.2332	0.2334
0	0	0	0.125	0.25	First	0.1400	0.1494	0.1462	0.1494
					Last	0.1324	0.1544	0.1486	0.1504
0	0	0.125	0.25	0.25	First	0.1660	0.1738	0.1712	0.1738
					Last	0.1552	0.1806	0.1686	0.1762
0	0.05	0.05	0.3	0.3	First	0.1952	0.2038	0.1994	0.2038
					Last	0.1814	0.2074	0.1960	0.2020
0.05	0.2	0.3	0.4	0.5	First	0.2650	0.2782	0.2718	0.2782
					Last	0.2508	0.2866	0.2744	0.2796
0	0	0	0.25	0.5	First	0.3054	0.3188	0.3112	0.3188
					Last	0.2940	0.3252	0.3070	0.3200
0	0	0	0.35	0.35	First	0.2472	0.2614	0.2538	0.2614
					Last	0.2306	0.2616	0.2514	0.2620
0	0	0.25	0.25	0.5	First	0.3058	0.3168	0.3108	0.3168
					Last	0.2906	0.3244	0.3102	0.3156
0	0.125	0.25	0.25	0.25	First	0.1324	0.1392	0.1360	0.1392
					Last	0.1258	0.1448	0.1352	0.1406
0	0.125	0.125	0.125	0.25	First	0.1150	0.1226	0.1260	0.1226
					Last	0.1066	0.1258	0.1240	0.1226
0	0.125	0.125	0.125	0.125	First	0.0800	0.0816	0.0810	0.0816
					Last	0.0718	0.0866	0.0818	0.0818
0.125	0.125	0.125	0.25	0.25	First	0.0910	0.0920	0.0888	0.0920
					Last	0.0808	0.0936	0.0888	0.0914
0	0	0	0.1	0.3	First	0.1558	0.1570	0.1574	0.1570
					Last	0.1436	0.1646	0.1564	0.1582
0	0	0	0.2	0.7	First	0.3962	0.4060	0.4004	0.4060
					Last	0.3740	0.4154	0.4000	0.4078
0	0.1	0.1	0.6	0.6	First	0.4672	0.4826	0.4690	0.4826
					Last	0.4480	0.4968	0.4696	0.4892
0	0.1	0.3	0.4	0.4	First	0.2568	0.2724	0.2592	0.2724
					Last	0.2406	0.2762	0.2604	0.2710
0	0.05	0.2	0.4	0.4	First	0.2772	0.2894	0.2826	0.2894
					Last	0.2630	0.2992	0.2802	0.2906

Table 6.21. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0566	0.0508	0.0498	0.0508
					Last	0.0558	0.0534	0.0468	0.0506
0.05	0.15	0.25	0.35	0.45	First	0.3124	0.3338	0.3248	0.3338
					Last	0.3142	0.3252	0.3176	0.3438
0	0.025	0.075	0.175	0.375	First	0.2710	0.2844	0.2800	0.2844
					Last	0.2726	0.2822	0.2700	0.2848
0	0	0	0	0.5	First	0.3088	0.3254	0.3338	0.3254
					Last	0.3118	0.3240	0.3236	0.3368
0	0	0	0.125	0.25	First	0.1810	0.1772	0.1738	0.1772
					Last	0.1812	0.1792	0.1702	0.1888
0	0	0.125	0.25	0.25	First	0.2226	0.2350	0.2240	0.2350
					Last	0.2292	0.2334	0.2202	0.2358
0	0.05	0.05	0.3	0.3	First	0.2572	0.2746	0.2648	0.2746
					Last	0.2666	0.2744	0.2600	0.2762
0.05	0.2	0.3	0.4	0.5	First	0.3640	0.3824	0.3712	0.3824
					Last	0.3730	0.3796	0.3610	0.3840
0	0	0	0.25	0.5	First	0.4290	0.4538	0.4424	0.4538
					Last	0.4318	0.4494	0.4290	0.4554
0	0	0	0.35	0.35	First	0.3388	0.3562	0.3368	0.3562
					Last	0.3452	0.3514	0.3282	0.3644
0	0	0.25	0.25	0.5	First	0.4154	0.4414	0.4254	0.4414
					Last	0.4152	0.4348	0.4156	0.4418
0	0.125	0.25	0.25	0.25	First	0.1796	0.1874	0.1860	0.1874
					Last	0.1832	0.1874	0.1798	0.1888
0	0.125	0.125	0.125	0.25	First	0.1552	0.1568	0.1588	0.1568
					Last	0.1582	0.1592	0.1554	0.1594
0	0.125	0.125	0.125	0.125	First	0.0934	0.0940	0.0924	0.0940
					Last	0.0942	0.0914	0.0912	0.0978
0.125	0.125	0.125	0.25	0.25	First	0.1104	0.1138	0.1092	0.1138
					Last	0.1126	0.1136	0.1076	0.1140
0	0	0	0.1	0.3	First	0.2138	0.2132	0.2112	0.2132
					Last	0.2198	0.2164	0.2078	0.2258
0	0	0	0.2	0.7	First	0.5822	0.6086	0.6018	0.6086
					Last	0.5828	0.6016	0.5836	0.6180
0	0.1	0.1	0.6	0.6	First	0.6382	0.6836	0.6554	0.6836
					Last	0.6458	0.6704	0.6464	0.6926
0	0.1	0.3	0.4	0.4	First	0.3684	0.3896	0.3754	0.3896
					Last	0.3622	0.3820	0.3674	0.3906
0	0.05	0.2	0.4	0.4	First	0.3780	0.3972	0.3728	0.3972
					Last	0.3818	0.3910	0.3696	0.3980

Table 6.22. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0508	0.0524	0.0530	0.0524
					Last	0.0542	0.0530	0.0540	0.0526
0.05	0.15	0.25	0.35	0.45	First	0.5832	0.6078	0.5878	0.6078
					Last	0.5928	0.5966	0.5712	0.6086
0	0.025	0.075	0.175	0.375	First	0.5182	0.5280	0.5092	0.5280
					Last	0.5162	0.5192	0.4964	0.5286
0	0	0	0	0.5	First	0.5000	0.5294	0.5410	0.5294
					Last	0.5064	0.5260	0.5298	0.5332
0	0	0	0.125	0.25	First	0.3206	0.3358	0.3314	0.3358
					Last	0.3160	0.3234	0.3148	0.3380
0	0	0.125	0.25	0.25	First	0.4248	0.4392	0.4140	0.4392
					Last	0.4252	0.4348	0.4020	0.4502
0	0.05	0.05	0.3	0.3	First	0.4694	0.4868	0.4618	0.4868
					Last	0.4710	0.4826	0.4544	0.4888
0.05	0.2	0.3	0.4	0.5	First	0.6600	0.6724	0.6534	0.6724
					Last	0.6588	0.6620	0.6388	0.6740
0	0	0	0.25	0.5	First	0.7062	0.7278	0.7078	0.7278
					Last	0.7024	0.7204	0.6952	0.7302
0	0	0	0.35	0.35	First	0.5882	0.6266	0.5978	0.6266
					Last	0.5874	0.6144	0.5832	0.6292
0	0	0.25	0.25	0.5	First	0.7318	0.7516	0.7244	0.7516
					Last	0.7314	0.7398	0.7082	0.7614
0	0.125	0.25	0.25	0.25	First	0.3324	0.3410	0.3280	0.3410
					Last	0.3368	0.3362	0.3174	0.3498
0	0.125	0.125	0.125	0.25	First	0.2478	0.2538	0.2532	0.2538
					Last	0.2474	0.2556	0.2480	0.2568
0	0.125	0.125	0.125	0.125	First	0.1386	0.1382	0.1328	0.1382
					Last	0.1418	0.1376	0.1312	0.1480
0.125	0.125	0.125	0.25	0.25	First	0.1838	0.1838	0.1738	0.1838
					Last	0.1852	0.1864	0.1716	0.1956
0	0	0	0.1	0.3	First	0.3610	0.3730	0.3684	0.3730
					Last	0.3634	0.3660	0.3548	0.3742
0	0	0	0.2	0.7	First	0.8440	0.8604	0.8454	0.8604
					Last	0.8474	0.8486	0.8314	0.8616
0	0.1	0.1	0.6	0.6	First	0.8890	0.9088	0.8886	0.9088
					Last	0.8904	0.9022	0.8784	0.9182
0	0.1	0.3	0.4	0.4	First	0.6474	0.6658	0.6418	0.6658
					Last	0.6450	0.6650	0.6268	0.6798
0	0.05	0.2	0.4	0.4	First	0.6744	0.7048	0.6784	0.7048
					Last	0.6830	0.6960	0.6580	0.7068

Table 6.23. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0504	0.0510	0.0502	0.0510
					Last	0.0518	0.0514	0.0488	0.0508
0.05	0.15	0.25	0.35	0.45	First	0.2510	0.2616	0.2540	0.2616
					Last	0.2532	0.2564	0.2458	0.2636
0	0.025	0.075	0.175	0.375	First	0.2266	0.2268	0.2188	0.2268
					Last	0.2286	0.2268	0.2166	0.2384
0	0	0	0	0.5	First	0.2438	0.2608	0.2604	0.2608
					Last	0.2482	0.2552	0.2548	0.2706
0	0	0	0.125	0.25	First	0.1448	0.1438	0.1428	0.1438
					Last	0.1458	0.1480	0.1398	0.1566
0	0	0.125	0.25	0.25	First	0.1806	0.1888	0.1858	0.1888
					Last	0.1814	0.1896	0.1796	0.1988
0	0.05	0.05	0.3	0.3	First	0.1932	0.2042	0.2002	0.2042
					Last	0.1952	0.2026	0.1972	0.2050
0.05	0.2	0.3	0.4	0.5	First	0.2690	0.2742	0.2704	0.2742
					Last	0.2728	0.2760	0.2612	0.2858
0	0	0	0.25	0.5	First	0.3122	0.3288	0.3262	0.3288
					Last	0.3188	0.3274	0.3170	0.3384
0	0	0	0.35	0.35	First	0.2608	0.2766	0.2604	0.2766
					Last	0.2648	0.2714	0.2528	0.2856
0	0	0.25	0.25	0.5	First	0.3228	0.3342	0.3316	0.3342
					Last	0.3268	0.3286	0.3162	0.3360
0	0.125	0.25	0.25	0.25	First	0.1520	0.1526	0.1546	0.1526
					Last	0.1528	0.1540	0.1482	0.1630
0	0.125	0.125	0.125	0.25	First	0.1230	0.1232	0.1266	0.1232
					Last	0.1276	0.1256	0.1252	0.1346
0	0.125	0.125	0.125	0.125	First	0.0878	0.0864	0.0842	0.0864
					Last	0.0900	0.0878	0.0842	0.0856
0.125	0.125	0.125	0.25	0.25	First	0.0994	0.0994	0.0968	0.0994
					Last	0.1018	0.1024	0.0944	0.1090
0	0	0	0.1	0.3	First	0.1594	0.1666	0.1658	0.1666
					Last	0.1654	0.1676	0.1634	0.1674
0	0	0	0.2	0.7	First	0.4552	0.4758	0.4668	0.4758
					Last	0.4562	0.4660	0.4546	0.4788
0	0.1	0.1	0.6	0.6	First	0.4824	0.5044	0.4820	0.5044
					Last	0.4846	0.4960	0.4688	0.5052
0	0.1	0.3	0.4	0.4	First	0.2774	0.2976	0.2896	0.2976
					Last	0.2790	0.2914	0.2788	0.3008
0	0.05	0.2	0.4	0.4	First	0.3018	0.3184	0.2996	0.3184
					Last	0.3086	0.3118	0.2966	0.3265

Table 6.24. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0476	0.0466	0.0460	0.0466
					Last	0.0466	0.0424	0.0440	0.0438
0.05	0.15	0.25	0.35	0.45	First	0.4404	0.4738	0.4584	0.4738
					Last	0.5102	0.5036	0.4958	0.5168
0	0.025	0.075	0.175	0.375	First	0.3884	0.4122	0.4050	0.4122
					Last	0.4336	0.4230	0.4270	0.4432
0	0	0	0	0.5	First	0.4438	0.4636	0.4694	0.4636
					Last	0.4914	0.4846	0.5026	0.5056
0	0	0	0.125	0.25	First	0.2410	0.2456	0.2374	0.2456
					Last	0.2710	0.2664	0.2634	0.2696
0	0	0.125	0.25	0.25	First	0.2940	0.3138	0.3014	0.3138
					Last	0.3386	0.3366	0.3298	0.3408
0	0.05	0.05	0.3	0.3	First	0.3574	0.3798	0.3608	0.3798
					Last	0.4028	0.3968	0.3862	0.4084
0.05	0.2	0.3	0.4	0.5	First	0.5058	0.5312	0.5182	0.5312
					Last	0.5698	0.5632	0.5628	0.5846
0	0	0	0.25	0.5	First	0.5812	0.6256	0.6090	0.6256
					Last	0.6542	0.6572	0.6534	0.6740
0	0	0	0.35	0.35	First	0.4624	0.4926	0.4676	0.4926
					Last	0.5278	0.5286	0.5122	0.5392
0	0	0.25	0.25	0.5	First	0.6004	0.6390	0.6216	0.6390
					Last	0.6568	0.6590	0.6520	0.6776
0	0.125	0.25	0.25	0.25	First	0.2272	0.2436	0.2432	0.2436
					Last	0.2676	0.2642	0.2660	0.2680
0	0.125	0.125	0.125	0.25	First	0.1880	0.1958	0.1944	0.1958
					Last	0.2202	0.2098	0.2164	0.2234
0	0.125	0.125	0.125	0.125	First	0.0970	0.1024	0.0998	0.1024
					Last	0.1146	0.1046	0.1090	0.1156
0.125	0.125	0.125	0.25	0.25	First	0.1470	0.1466	0.1442	0.1466
					Last	0.1568	0.1514	0.1510	0.1597
0	0	0	0.1	0.3	First	0.2916	0.3002	0.2920	0.3002
					Last	0.3292	0.3204	0.3208	0.3302
0	0	0	0.2	0.7	First	0.7606	0.8052	0.7930	0.8052
					Last	0.8284	0.8376	0.8394	0.8466
0	0.1	0.1	0.6	0.6	First	0.8046	0.8424	0.8170	0.8424
					Last	0.8614	0.8658	0.8530	0.8796
0	0.1	0.3	0.4	0.4	First	0.4968	0.5374	0.5156	0.5374
					Last	0.5612	0.5652	0.5564	0.5860
0	0.05	0.2	0.4	0.4	First	0.5426	0.5754	0.5528	0.5754
					Last	0.6098	0.6108	0.5912	0.6226

Table 6.25. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0538	0.0558	0.0532	0.0558
					Last	0.0522	0.0482	0.0492	0.0512
0.05	0.15	0.25	0.35	0.45	First	0.7696	0.7980	0.7782	0.7980
					Last	0.8268	0.8180	0.8090	0.8386
0	0.025	0.075	0.175	0.375	First	0.7046	0.7250	0.7074	0.7250
					Last	0.7662	0.7522	0.7446	0.7742
0	0	0	0	0.5	First	0.6856	0.7196	0.7288	0.7196
					Last	0.7588	0.7576	0.7730	0.7738
0	0	0	0.125	0.25	First	0.4546	0.4732	0.4600	0.4732
					Last	0.5162	0.5118	0.5028	0.5238
0	0	0.125	0.25	0.25	First	0.5880	0.6118	0.5766	0.6118
					Last	0.6484	0.6380	0.6166	0.6586
0	0.05	0.05	0.3	0.3	First	0.6602	0.6888	0.6590	0.6888
					Last	0.7192	0.7162	0.7006	0.7384
0.05	0.2	0.3	0.4	0.5	First	0.8316	0.8518	0.8310	0.8518
					Last	0.8842	0.8790	0.8672	0.8898
0	0	0	0.25	0.5	First	0.8830	0.9020	0.8846	0.9020
					Last	0.9310	0.9304	0.9214	0.9358
0	0	0	0.35	0.35	First	0.7802	0.8162	0.7874	0.8162
					Last	0.8412	0.8428	0.8260	0.8608
0	0	0.25	0.25	0.5	First	0.8930	0.9118	0.8922	0.9118
					Last	0.9308	0.9276	0.9214	0.9380
0	0.125	0.25	0.25	0.25	First	0.4584	0.4820	0.4702	0.4820
					Last	0.5196	0.5096	0.5072	0.5256
0	0.125	0.125	0.125	0.25	First	0.3444	0.3588	0.3572	0.3588
					Last	0.3920	0.3768	0.3876	0.3930
0	0.125	0.125	0.125	0.125	First	0.1592	0.1660	0.1648	0.1660
					Last	0.1738	0.1634	0.1648	0.1766
0.125	0.125	0.125	0.25	0.25	First	0.2354	0.2508	0.2444	0.2508
					Last	0.2682	0.2638	0.2566	0.2710
0	0	0	0.1	0.3	First	0.5150	0.5428	0.5346	0.5428
					Last	0.5732	0.5700	0.5688	0.5894
0	0	0	0.2	0.7	First	0.9580	0.9660	0.9602	0.9660
					Last	0.9832	0.9792	0.9768	0.9834
0	0.1	0.1	0.6	0.6	First	0.9796	0.9860	0.9828	0.9860
					Last	0.9898	0.9902	0.9892	0.9926
0	0.1	0.3	0.4	0.4	First	0.8166	0.8410	0.8132	0.8410
					Last	0.8612	0.8656	0.8512	0.8772
0	0.05	0.2	0.4	0.4	First	0.8536	0.8722	0.8406	0.8722
					Last	0.9006	0.8988	0.8802	0.9106

Table 6.26. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0464	0.0496	0.0522	0.0496
					Last	0.0504	0.0440	0.0442	0.0482
0.05	0.15	0.25	0.35	0.45	First	0.3382	0.3588	0.3470	0.3588
					Last	0.3736	0.3666	0.3670	0.3814
0	0.025	0.075	0.175	0.375	First	0.3004	0.3170	0.3070	0.3170
					Last	0.3470	0.3326	0.3364	0.3480
0	0	0	0	0.5	First	0.3302	0.3476	0.3536	0.3476
					Last	0.3786	0.3626	0.3778	0.3782
0	0	0	0.125	0.25	First	0.1854	0.1920	0.1862	0.1920
					Last	0.2136	0.2036	0.2044	0.2173
0	0	0.125	0.25	0.25	First	0.2398	0.2472	0.2346	0.2472
					Last	0.2712	0.2648	0.2564	0.2769
0	0.05	0.05	0.3	0.3	First	0.2754	0.2948	0.2808	0.2948
					Last	0.3146	0.3090	0.3038	0.3168
0.05	0.2	0.3	0.4	0.5	First	0.3944	0.4182	0.4052	0.4182
					Last	0.4358	0.4340	0.4312	0.4494
0	0	0	0.25	0.5	First	0.4420	0.4632	0.4538	0.4632
					Last	0.4890	0.4890	0.4880	0.5094
0	0	0	0.35	0.35	First	0.3570	0.3826	0.3606	0.3826
					Last	0.3994	0.3934	0.3776	0.4072
0	0	0.25	0.25	0.5	First	0.4468	0.4808	0.4694	0.4808
					Last	0.4954	0.4976	0.4932	0.5186
0	0.125	0.25	0.25	0.25	First	0.1938	0.2066	0.2032	0.2066
					Last	0.2202	0.2132	0.2132	0.2230
0	0.125	0.125	0.125	0.25	First	0.1504	0.1572	0.1540	0.1572
					Last	0.1664	0.1598	0.1646	0.1673
0	0.125	0.125	0.125	0.125	First	0.0932	0.0914	0.0974	0.0914
					Last	0.1038	0.0970	0.1016	0.1072
0.125	0.125	0.125	0.25	0.25	First	0.1260	0.1340	0.1314	0.1340
					Last	0.1434	0.1334	0.1360	0.1484
0	0	0	0.1	0.3	First	0.2110	0.2186	0.2114	0.2186
					Last	0.2418	0.2330	0.2308	0.2496
0	0	0	0.2	0.7	First	0.6022	0.6390	0.6332	0.6390
					Last	0.6698	0.6702	0.6730	0.6884
0	0.1	0.1	0.6	0.6	First	0.6548	0.6912	0.6610	0.6912
					Last	0.7250	0.7250	0.7104	0.7446
0	0.1	0.3	0.4	0.4	First	0.4004	0.4164	0.3976	0.4164
					Last	0.4462	0.4432	0.4326	0.4534
0	0.05	0.2	0.4	0.4	First	0.4110	0.4360	0.4210	0.4360
					Last	0.4662	0.4630	0.4526	0.4764

6.4. Three Treatments Plus Alvo

The results was exactly the same results for three treatments mixed design (RCBD + BIBD (1 missing observation)). In addition the power values for Alvo (Alvo) were reported. The summarized table blow shows which test performed best under different block combinations. The powers for Alvo test statistics was the same as standardized last test statistics for Alvo.

Table 6.27. Test Which Performed Best for Three Treatment with 1 Missing

RCBD	BIBD	JT	MJT	SJT	Alvo	Alvo
6	6				Last ✓	✓
6	12		Last ✓			
6	18		First ✓		First	
12	6	Last ✓				
12	12				Last ✓	✓
12	18		First ✓		First ✓	
18	6	Last ✓				
18	12		Last ✓			
18	18		First ✓		First ✓	

6.5. Four Treatments Plus Alvo

The RCBD design, BIBD design with 1 missing observation (BIBD1), and BIBD design with 2 missing observations (BIBD2) were merged together and the powers for the eight proposed tests together with the Alvo test were estimated. Below, is the table for the summarized power comparison. We noted that, the standardized last Alvo and Alvo test outperformed the other test when there were equal number of blocks for RCBD and BIBD or when there were more incomplete blocks. When there were more complete block, the standardized last for MJT outperformed the other tests.

Table 6.28. Summarized Power Comparison for Four Treatments Mixed Design (RCBD + BIBD1 + BIBD2)

RCBD	BIBD1	BIBD2	JT	MJT	SJT	Alvo	Alvo
6	6	6				Last ✓	✓
6	6	12		Last ✓			
6	18	18				Last ✓	✓
12	6	6				Last ✓	✓
24	12	12				Last ✓	✓
18	6	12				Last ✓	✓
24	6	6		Last ✓			
24	12	6		Last ✓			
24	6	12		Last ✓			

6.6. Five Treatments Plus Alvo

In this mixed design, we combined the four different designs, namely RCBD, BIBD1, BIBD2, and BIBD3. We found out that, the standardized last for Alvo and Alvo test outperformed the other tests in all the different cases considered. However, there were instances where the power for the standardized last test statistics for MJT were closer to the standardized last for Alvo and the Alvo.

Table 6.29. Summarized Power Comparison for Five Treatments Mixed Design (RCBD + BIBD1 + BIBD2 + BIBD3)

RCBD	BIBD1	BIBD2	BIBD3	JT	MJT	SJT	Alvo	Alvo
10	10	10	10				Last ✓	✓
10	20	20	20				Last ✓	✓
20	10	20	30				Last ✓	✓
30	10	10	10				Last ✓	✓
60	20	20	20				Last ✓	✓
40	10	10	10				Last ✓	✓
60	10	10	10				Last ✓	✓
60	10	20	10				Last ✓	✓

The individual tables for these summarized tables can be found in Appendix C.

7. DISCUSSIONS AND CONCLUSIONS

There were situations in which some tests performed better than the other test due to the number of blocks present in each of the two individual designs. For three treatment mixed designs with 1 missing in BIBD, SJT didn't perform well in any of the cases. Standardized first for MJT and Alvo performed better when the number blocks in BIBD was 18, however standardized last for MJT and Alvo performed better when the was equal blocks with the number of blocks being less than 18. Overall standardized last for Alvo outperformed the other test when the number of treatments starts to increase as well as increasing the number of missing observations per block. Also one interesting fact noted in this simulation, is that, the power for the standardized first for MJT and Alvo were the same throughout the simulation. The standardized test statistics for Alvo and MJT were also the same for the individual designs, namely; RCBD and BIBD, but for the mixed design, only the standardized first were the same while the standardized last were different.

When the data for all the different designs were merged together under each treatments, we noticed that, the Alvo had the same power as the standardized last for Alvo. In the case of the three treatments the power comparisons for Table 6.1 and 6.29 were the same with the addition of Alvo. However, for four treatments, which was a mixture of RCBD, BIBD1 and BIBD2, the standardized last for MJT, the standardized last for Alvo, and the Alvo outperformed the other tests. Standardized last for Alvo and Alvo outperformed the other tests when there more incomplete blocks or equal number of blocks, whereas the standardized last for MJT outperformed the other tests when there were more complete blocks. For five treatments, which was a combination of RCBD, BIBD1, BIBD2, and BIBD3, the standardized last for Alvo and the Alvo outperformed the other tests in each of the cases. This confirms the previous results that, as the number of treatments increases the standardized last for Alvo outperforms the other tests.

As we noticed through the simulation that the standardized test statistics for MJT and Alvo were the same when applied to each designs individually, then we can use any of these designs when we are dealing with any of these designs individually (say, BIBD only or RCBD only), but care must be taken in the case of BIBD, that is, all the dataset for the BIBD must have the same number of observations missing per block.

7.1. Recommendations

7.1.1. Mixed Design for Two Designs

7.1.1.1. Three Treatments

When there is equal number for blocks for RCBD and BIBD with the number of blocks being less than 18, then use the standardized last for Alvo and Alvo. When the number of blocks for BIBD is 18 or more blocks for the mixed design then it is better to use standardized first for MJT and standardized first for Alvo. When there is more block in the RCBD, then use the standardized last for MJT. However, if there are more than 12 blocks in RCBD and less than 6 blocks in BIBD then use Standardized last for JT.

7.1.1.2. Four Treatments

For four treatment mixed design with 1 missing observations for BIBD, when there is between 12 blocks in the BIBD, it is better to use the standardized last for Alvo and Alvo. When there are more than 12 blocks for BIBD with 12 or more blocks for RCBD, use the standardized last for MJT. Also, if there is equal number of blocks with 6 or less blocks then use the standardized last for MJT. Use standardized first for MJT and standardized first for Alvo when we have a block size ratio of 1 is to 3 or vice versa for RCBD and BIBD respectively.

For four treatments mixed design with 2 missing observations for BIBD, when we have the ratio of blocks sizes of 1:2 or vice versa use standardized last for MJT. Use standardized last for JT when there is a total block size of 24 with each block size for RBCD and BIBD being 6 and 18 or 12 and 12 respectively. For block size of 12 or more for RCBD with a block size of 18 or more for BIBD use Standardized last for Alvo and Alvo. When there are 18 or more blocks in the RCBD design, then use the standardized last for Alvo and the Alvo.

7.1.1.3. Five Treatments

For five treatment mixed design with 1 missing observation for BIBD with equal number of blocks of size 10 for RCBD and BIDB use standardized last for MJT. When there are more blocks in BIBD than RCBD with block difference of 10 use standardized first for MJT and standardized first for Alvo. For any number of block combination other than the above, use standardized last for Alvo and Alvo.

For five treatments mixed design with two missing observations for BIBD use standardized last for Alvo or Alvo. For five treatments with three missing observations per block, use standardized last for Alvo and Alvo in all cases except in one case where we have to use standardized last for JT for equal number of blocks of size 10.

7.1.2. For Mixed Design with More Than Two Designs

7.1.2.1. Four Treatments

For four treatment mixed design with 1 and 2 missing observations for BIBD use standardized last for MJT when there are more blocks in RCBD than the combined number of block for the two BIBD designs. When there is equal number of blocks between RCBD and BIBD, then use standardized last for Alvo and Alvo. When there are more blocks in the BIBD (two BIBD designs combined) than RCBD, then use standardized last for Alvo and Alvo except, use standardized last for JT when we have a block size of 6 for RCBD, 6 for BIBD with 1 missing, and 12 for BIBD with two missing.

7.1.2.2. Five Treatments

For five treatments mixed design with 1 missing observation for BIBD, 2 missing observation for BIBD and 3 missing observation for BIBD, use standardized last for Alvo and Alvo.

Overall although it is easier to use the Alvo for a mixed design, but as we have seen from the results of the study it does not always given us the best power. So in certain cases it will be better to use the one of the new tests proposed in this paper. When you have a BIBD design use standardized last for MJT because it will be easier to calculate than using the Alvo's method.

A future study may be conducted to investigate the powers for larger number of treatments (more the five treatments) and a larger number of blocks for each design. Also, we could compare the power of using the MJT test against Durbin's test for a BIBD design.

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APPENDIX A. EXPECTED VALUES AND VARIANCES

Table A.1. Three Treatments, RCBD

Trt1	Trt2	Trt3	U_{a12}	U_{a13}	U_{a23}	JT	MJT	SJT
1	2	3	1	1	1	3	4	6
1	3	2	1	1	0	2	3	5
2	1	3	0	1	1	2	3	5
2	3	1	1	0	0	1	1	1
3	1	2	0	0	1	1	1	1
3	2	1	0	0	0	0	0	0
					Sum	9	12	18
					μ	1.5	2	3
					σ^2	0.917	2	5.667

Table A.2. Three Treatments, BIBD Treatment 1 Missing

Trt1	Trt2	Trt3	U_{a12}	U_{a13}	U_{a23}	JT	MJT	SJT
.	1	2	0	0	1	1	1	1
.	2	1	0	0	0	0	0	0
					Sum	1	1	1
					μ	0.5	0.5	0.5
					σ^2	0.25	0.25	0.25

Table A.3. Three Treatments, BIBD Treatment 2 Missing

Trt1	Trt2	Trt3	U_{a12}	U_{a13}	U_{a23}	JT	MJT	SJT
1	.	2	0	1	0	1	2	4
1	.	1	0	0	0	0	0	0
					Sum	1	2	4
					μ	0.5	1	2
					σ^2	0.25	1	4

Table A.4. Three Treatments, BIBD Treatment 3 Missing

Trt1	Trt2	Trt3	U_{a12}	U_{a13}	U_{a23}	JT	MJT	SJT
1	2	.	1	0	0	1	1	1
1	1	.	0	0	0	0	0	0
					Sum	1	1	1
					μ	0.5	0.5	0.5
					σ^2	0.25	0.25	0.25

Table A.5. Four Treatments, RCBD

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
1	2	3	4	1	1	1	1	1	1	6	10	20
1	2	4	3	1	1	1	1	1	0	5	9	19
1	3	2	4	1	1	1	0	1	1	5	9	19
1	3	4	2	1	1	1	1	0	0	4	7	15
1	4	2	3	1	1	1	0	0	1	4	7	15
1	3	4	2	1	1	1	0	0	0	3	6	14
2	1	3	4	0	1	1	1	1	1	5	9	19
2	1	4	3	0	1	1	1	1	0	4	8	18
2	3	1	4	1	0	1	0	1	1	4	7	15
2	3	4	1	1	1	0	1	0	0	3	4	6
2	4	1	3	1	0	1	0	0	1	3	5	11
2	4	3	1	1	1	0	0	0	0	2	3	5
3	1	2	4	0	0	1	1	1	1	4	7	15
3	1	4	2	0	1	0	1	1	0	3	5	9
3	2	1	4	0	0	1	0	1	1	3	6	14
3	2	4	1	0	1	0	1	0	0	2	3	5
3	4	1	2	1	0	0	0	0	1	2	2	2
3	4	2	1	1	0	0	0	0	0	1	1	1
4	1	2	3	0	0	0	1	1	1	3	4	6
4	1	3	2	0	0	0	1	1	0	2	3	5
4	2	3	1	0	0	0	0	1	1	2	3	5
4	2	1	3	0	0	0	1	0	0	1	1	1
4	3	1	2	0	0	0	0	0	1	1	1	1
4	3	2	1	0	0	0	0	0	0	0	0	0
									Sum	72	120	240
									μ	3	5	10
									σ^2	2.167	8.333	45

Table A.6. Four Treatments, BIBD Treatment 1 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
.	1	2	3	0	0	0	1	1	1	3	4	6
.	1	3	2	0	0	0	1	1	0	2	3	5
.	2	1	3	0	0	0	0	1	1	2	3	5
.	2	3	1	0	0	0	1	0	0	1	1	1
.	3	1	2	0	0	0	0	0	1	1	1	1
.	3	2	1	0	0	0	0	0	0	0	0	0
									Sum	9	12	18
									μ	1.5	2	3
									σ^2	0.917	2	5.667

Table A.7. Four Treatments, BIBD Treatment 2 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
1	.	2	3	0	1	1	0	0	1	3	6	14
1	.	3	2	1	1	0	0	0	0	2	5	13
2	.	1	3	0	0	1	0	0	1	2	4	10
2	.	3	1	0	1	0	0	0	0	1	2	4
3	.	1	2	0	0	0	0	0	1	1	1	1
3	.	2	1	0	0	0	0	0	0	0	0	0
									Sum	9	18	42
									μ	1.5	3	7
									σ^2	0.917	4.667	31.333

Table A.8. Four Treatments, BIBD Treatment 3 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
1	2	.	3	1	0	1	0	1	0	3	6	14
1	3	.	2	1	0	1	0	0	0	2	4	10
2	1	.	3	0	0	1	0	1	0	2	5	13
2	3	.	1	1	1	0	0	0	0	1	1	1
3	1	.	2	0	0	0	0	1	0	1	2	4
3	2	.	1	0	0	0	0	0	0	0	0	0
									Sum	9	18	42
									μ	1.5	3	7
									σ^2	0.917	4.667	31.333

Table A.9. Four Treatments, BIBD Treatment 4 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
1	2	3	.	1	1	0	1	0	0	3	4	6
1	3	2	.	1	1	0	0	0	0	2	3	5
2	1	3	.	0	1	0	1	0	0	2	3	5
2	3	1	.	1	0	0	0	0	0	1	1	1
3	1	2	.	0	0	0	1	0	0	1	1	1
3	2	1	.	0	0	0	0	0	0	0	0	0
									Sum	9	12	18
									μ	1.5	2	3
									σ^2	0.917	2	5.667

Table A.10. Four Treatments, BIBD Treatment 1 & 2 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
.	.	1	2	0	0	0	0	0	1	1	1	1
.	.	2	1	0	0	0	0	0	0	0	0	0
									Sum	1	1	1
									μ	0.5	0.5	0.5
									σ^2	0.25	0.25	0.25

Table A.11. Four Treatments, BIBD Treatment 1 & 3 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
.	1	.	2	0	1	0	0	0	0	1	2	4
.	2	.	1	0	0	0	0	0	0	0	0	0
									Sum	1	2	4
									μ	0.5	1	2
									σ^2	0.25	1	4

Table A.12. Four Treatments, BIBD Treatment 1 & 4 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
.	1	2	.	0	0	0	1	0	0	1	1	1
.	2	1	.	0	0	0	0	0	0	0	0	0
									Sum	1	1	1
									μ	0.5	0.5	0.5
									σ^2	0.25	0.25	0.25

Table A.13. Four Treatments, BIBD Treatment 2 & 3 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
1	.	.	2	0	0	1	0	0	0	1	3	9
2	.	.	1	0	0	0	0	0	0	0	0	0
									Sum	1	3	9
									μ	0.5	1.5	4.5
									σ^2	0.25	2.25	20.25

Table A.14. Four Treatments, BIBD Treatment 2 & 4 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
1	.	2	.	0	1	0	0	0	0	1	2	4
2	.	1	.	0	0	0	0	0	0	0	0	0
									Sum	1	2	4
									μ	0.5	1	2
									σ^2	0.25	1	4

Table A.15. Four Treatments, BIBD Treatment 3 & 4 Missing

Trt1	Trt2	Trt3	Trt4	U_{a12}	U_{a13}	U_{a14}	U_{a23}	U_{a24}	U_{a34}	JT	MJT	SJT
1	2	.	.	1	0	0	0	0	0	1	1	1
2	1	.	.	0	0	0	0	0	0	0	0	0
									Sum	1	1	1
									μ	0.5	0.5	0.5
									σ^2	0.25	0.25	0.25

Table A.16. Five Treatments, RCBD

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	1	1	1	1	1	1	1	1	1	10	20	50
1	1	1	1	1	1	1	1	1	0	9	19	49
1	1	1	1	1	1	1	0	1	1	9	19	49
1	1	1	1	1	1	1	1	0	0	8	17	45
1	1	1	1	1	1	1	0	0	1	8	17	45
1	1	1	1	1	1	1	0	0	0	6	16	44
1	1	1	1	0	1	1	1	1	1	9	19	49
1	1	1	1	0	1	1	1	1	0	8	18	48
1	1	1	1	1	0	1	0	1	1	8	17	45
1	1	1	1	1	1	0	1	0	0	7	14	36
1	1	1	1	1	0	1	0	0	1	7	15	41
1	1	1	1	1	1	0	0	0	0	6	13	35
1	1	1	1	0	0	1	1	1	1	8	17	45
1	1	1	1	0	1	0	1	1	0	7	15	39
1	1	1	1	0	0	1	0	1	1	7	16	44
1	1	1	1	0	1	0	1	0	0	6	13	35
1	1	1	1	1	0	0	0	0	1	6	12	32
1	1	1	1	1	0	0	0	0	0	5	11	31
1	1	1	1	0	0	0	1	1	1	7	14	36
1	1	1	1	0	0	0	1	1	0	6	13	35
1	1	1	1	0	0	0	0	1	1	6	13	35
1	1	1	1	0	0	0	1	0	0	5	11	31
1	1	1	1	0	0	0	0	0	1	5	11	31
1	1	1	1	0	0	0	0	0	0	4	10	30
0	1	1	1	1	1	1	1	1	1	9	19	49
0	1	1	1	1	1	1	1	1	0	8	18	48
0	1	1	1	1	1	1	0	1	1	8	18	48
0	1	1	1	1	1	1	1	0	0	7	16	44
0	1	1	1	1	1	1	0	0	1	7	16	44
0	1	1	1	1	1	1	0	0	0	6	15	43
1	0	1	1	0	1	1	1	1	1	8	17	45
1	0	1	1	0	1	1	1	1	0	7	16	44
1	1	0	1	1	0	1	0	1	1	7	14	36

Table A.17. Five Treatments, RCBD (continued)

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	1	1	0	1	1	0	1	0	0	6	10	20
1	1	0	1	1	0	1	0	0	1	6	12	32
1	1	1	1	0	1	0	0	0	0	5	9	19
1	0	1	1	0	0	1	1	1	1	7	15	41
1	0	1	1	0	1	0	1	1	0	6	13	35
1	0	1	1	0	0	1	0	1	1	6	13	35
1	1	1	0	0	1	0	0	0	0	5	9	19
1	1	0	1	1	0	0	0	0	1	5	9	23
1	1	1	0	1	0	0	0	0	0	4	7	15
1	0	1	1	0	0	0	1	1	1	6	12	32
1	0	1	1	0	0	0	1	1	0	5	11	31
1	1	0	1	0	0	0	0	1	1	5	10	26
1	1	1	0	0	0	0	1	0	0	4	7	15
1	1	0	1	0	0	0	0	0	1	9	19	49
0	0	1	1	1	1	1	1	1	1	8	17	45
0	0	1	1	1	1	1	1	1	0	7	16	44
0	1	0	1	1	1	1	0	1	1	7	15	39
0	1	1	0	1	1	1	1	0	0	6	12	28
0	1	0	1	1	1	1	0	0	1	6	13	35
0	1	1	0	1	1	1	0	0	0	5	11	27
0	0	1	1	0	1	1	1	1	1	7	16	44
0	0	1	1	0	1	1	1	1	0	6	15	43
0	1	0	1	1	0	1	0	1	1	6	13	35
0	1	1	0	1	1	0	1	0	0	5	9	19
0	1	0	1	1	0	1	0	0	1	5	11	31
0	1	1	0	1	1	0	0	0	0	4	8	18
1	0	0	1	0	0	1	1	1	1	6	12	32
1	0	1	0	0	1	0	1	1	0	5	9	19
1	0	0	1	0	0	1	0	1	1	5	11	31
1	0	1	0	0	1	0	1	0	0	4	7	15
1	1	0	0	1	0	0	0	0	1	4	5	7
1	1	0	0	1	0	0	0	0	0	3	4	6
1	0	0	1	0	0	0	1	1	1	5	9	23
1	0	1	0	0	0	0	1	1	0	4	7	15
1	0	0	1	0	0	0	0	1	1	4	8	22
1	0	1	0	0	0	0	1	0	0	3	5	11
1	1	0	0	0	0	0	0	0	1	3	4	6
1	1	0	0	0	0	0	0	0	0	2	3	5
0	0	0	1	1	1	1	1	1	1	7	14	36
0	0	1	0	1	1	1	1	1	0	6	12	28
0	0	0	1	1	1	1	0	1	1	6	13	35

Table A.18. Five Treatments, RCBD (Continued)

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	1	0	1	1	1	1	0	0	5	10	24
0	1	0	0	1	1	1	0	0	1	5	9	19
0	1	0	0	1	1	1	0	0	0	4	8	18
0	0	0	1	0	1	1	1	1	1	6	13	35
0	0	1	0	0	1	1	1	1	0	5	11	27
0	0	0	1	1	0	1	0	1	1	5	11	31
0	0	1	0	1	1	0	1	0	0	4	7	15
0	1	0	0	1	0	1	0	0	1	4	7	15
0	1	0	0	1	1	0	0	0	0	3	5	9
0	0	0	1	0	0	1	1	1	1	5	11	31
0	0	1	0	0	1	0	1	1	0	4	8	18
0	0	0	1	0	0	1	0	1	1	4	10	30
0	0	1	0	0	1	0	1	0	0	3	6	14
0	1	0	0	1	0	0	0	0	1	3	4	6
0	1	0	0	1	0	0	0	0	0	2	3	5
1	0	0	0	0	0	0	1	1	1	4	5	7
1	0	0	0	0	0	0	1	1	0	3	4	6
1	0	0	0	0	0	0	0	1	1	3	4	6
1	0	0	0	0	0	0	1	0	0	2	2	2
1	0	0	0	0	0	0	0	0	1	2	2	2
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	1	1	1	1	1	1	6	10	20
0	0	0	0	1	1	1	1	1	0	5	9	19
0	0	0	0	1	1	1	0	1	1	5	9	19
0	0	0	0	1	1	1	1	0	0	4	7	15
0	0	0	0	1	1	1	0	0	1	4	7	15
0	0	0	0	1	1	1	0	0	0	3	6	14
0	0	0	0	0	1	1	1	1	1	5	9	19
0	0	0	0	0	1	1	1	1	0	4	8	18
0	0	0	0	1	0	1	0	1	1	4	7	15
0	0	0	0	1	1	0	1	0	0	3	4	6
0	0	0	0	1	0	1	0	0	1	3	5	11
0	0	0	0	1	1	0	0	0	0	2	3	5
0	0	0	0	0	0	1	1	1	1	4	7	15
0	0	0	0	0	1	0	1	1	0	3	5	9
0	0	0	0	0	0	1	0	1	1	3	6	14
0	0	0	0	0	1	0	1	0	0	2	3	5
0	0	0	0	1	0	0	0	0	1	2	2	2
0	0	0	0	1	0	0	0	0	0	1	1	1

Table A.19. Five Treatments, RCBD (Continued)

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	0	0	1	1	1	3	4	6
0	0	0	0	0	0	0	1	1	0	2	3	5
0	0	0	0	0	0	0	0	1	1	2	3	5
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	600	1200	3000
									μ	5	10	25
									σ^2	4.17	25	217.33

Table A.20. Five Treatments, BIBD Treatment 1 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	1	1	1	1	1	1	6	10	20
0	0	0	0	1	1	1	1	1	0	5	9	19
0	0	0	0	1	1	1	0	1	1	5	9	19
0	0	0	0	1	1	1	1	0	0	4	7	15
0	0	0	0	1	1	1	0	0	1	4	7	15
0	0	0	0	1	1	1	0	0	0	3	6	14
0	0	0	0	0	1	1	1	1	1	5	9	19
0	0	0	0	0	1	1	1	1	0	4	8	18
0	0	0	0	1	0	1	0	1	1	4	7	15
0	0	0	0	1	1	0	1	0	0	3	4	6
0	0	0	0	1	0	1	0	0	1	3	5	11
0	0	0	0	1	1	0	0	0	0	2	3	5
0	0	0	0	0	0	1	1	1	1	4	7	15
0	0	0	0	0	1	0	1	1	0	3	5	9
0	0	0	0	0	0	1	0	1	1	3	6	14
0	0	0	0	0	1	0	1	0	0	2	3	5
0	0	0	0	1	0	0	0	0	1	2	2	2
0	0	0	0	1	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	1	1	1	3	4	6
0	0	0	0	0	0	0	1	1	0	2	3	5
0	0	0	0	0	0	0	0	1	1	2	3	5
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	72	120	240
									μ	3	5	10
									σ^2	2.167	8.333	45

Table A.21. Five Treatments, BIBD Treatment 2 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	1	1	1	0	0	0	1	1	1	6	13	35
0	1	1	1	0	0	0	1	1	0	5	12	34
0	1	1	1	0	0	0	0	1	1	5	12	34
0	1	1	1	0	0	0	1	0	0	4	10	30
0	1	1	1	0	0	0	0	0	1	4	10	30
0	1	1	1	0	0	0	0	0	0	3	9	29
0	0	1	1	0	0	0	1	1	1	5	11	31
0	0	1	1	0	0	0	1	1	0	4	10	30
0	1	0	1	0	0	0	0	1	1	4	9	25
0	1	1	0	0	0	0	1	0	0	3	6	14
0	1	0	1	0	0	0	0	0	1	3	7	21
0	1	1	0	0	0	0	0	0	0	2	5	13
0	0	0	1	0	0	0	1	1	1	4	8	22
0	0	1	0	0	0	0	1	1	0	3	6	14
0	0	0	1	0	0	0	0	1	1	3	7	21
0	0	1	0	0	0	0	1	0	0	2	4	10
0	1	0	0	0	0	0	0	0	1	2	3	5
0	1	0	0	0	0	0	0	0	0	1	2	4
0	0	0	0	0	0	0	1	1	1	3	4	6
0	0	0	0	0	0	0	1	1	0	2	3	5
0	0	0	0	0	0	0	0	1	1	2	3	5
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	72	156	420
									μ	3	6.5	17.5
									σ^2	2.17	14.58	144.58

Table A.22. Five Treatments, BIBD Treatment 3 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	0	1	1	0	1	1	0	0	1	6	14	40
1	0	1	1	0	1	1	0	0	0	5	13	39
1	0	1	1	0	0	1	0	0	1	5	12	36
1	0	1	1	0	1	0	0	0	0	4	10	30
1	0	1	1	0	0	0	0	0	1	4	9	27
1	0	1	1	0	0	0	0	0	0	3	8	26
0	0	1	1	0	1	1	0	0	1	5	13	39
0	0	1	1	0	1	1	0	0	0	4	12	38
1	0	0	1	0	0	1	0	0	1	4	9	27
1	0	1	0	0	1	0	0	0	0	3	6	14
1	0	0	1	0	0	0	0	0	1	3	6	18
1	0	1	0	0	0	0	0	0	0	2	4	10
0	0	0	1	0	1	1	0	0	1	4	10	30
0	0	1	0	0	1	1	0	0	0	3	8	22
0	0	0	1	0	0	1	0	0	1	3	8	26
0	0	1	0	0	1	0	0	0	0	2	5	13
1	0	0	0	0	0	0	0	0	1	2	2	2
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	0	1	1	0	0	1	3	6	14
0	0	0	0	0	1	1	0	0	0	2	5	13
0	0	0	0	0	0	1	0	0	1	2	4	10
0	0	0	0	0	1	0	0	0	0	1	2	4
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	72	168	480
									μ	3	7	20
									σ^2	2.167	16.67	173

Table A.23. Five Treatments, BIBD Treatment 4 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	1	0	1	1	0	1	0	1	0	6	13	35
1	1	0	1	1	0	1	0	0	0	5	11	31
1	1	0	1	0	0	1	0	1	0	5	12	34
1	1	0	1	1	0	0	0	0	0	4	8	22
1	1	0	1	0	0	0	0	1	0	4	9	25
1	1	0	1	0	0	0	0	0	0	3	7	21
0	1	0	1	1	0	1	0	1	0	5	12	34
0	1	0	1	1	0	1	0	0	0	4	10	30
1	0	0	1	0	0	1	0	1	0	4	10	30
1	1	0	0	1	0	0	0	0	0	3	4	6
1	0	0	1	0	0	0	0	1	0	3	7	21
1	1	0	0	0	0	0	0	0	0	2	3	5
0	0	0	1	1	0	1	0	1	0	4	10	30
0	1	0	0	1	0	1	0	0	0	3	6	14
0	0	0	1	0	0	1	0	1	0	3	9	29
0	1	0	0	1	0	0	0	0	0	2	3	5
1	0	0	0	0	0	0	0	1	0	2	3	5
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	1	0	1	0	1	0	3	6	14
0	0	0	0	1	0	1	0	0	0	2	4	10
0	0	0	0	0	0	1	0	1	0	2	5	13
0	0	0	0	1	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	0	1	0	1	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	72	156	420
									μ	3	6.5	17.5
									σ^2	2.17	14.58	144.58

Table A.24. Five Treatments, BIBD Treatment 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	1	1	0	1	1	0	1	0	0	6	10	20
1	1	1	0	1	1	0	0	0	0	5	9	19
1	1	1	0	0	1	0	1	0	0	5	9	19
1	1	1	0	1	0	0	0	0	0	4	7	15
1	1	1	0	0	0	0	1	0	0	4	7	15
1	1	1	0	0	0	0	0	0	0	3	6	14
0	1	1	0	1	1	0	1	0	0	5	9	19
0	1	1	0	1	1	0	0	0	0	4	8	18
1	0	1	0	0	1	0	1	0	0	4	7	15
1	1	0	0	1	0	0	0	0	0	3	4	6
1	0	1	0	0	0	0	1	0	0	3	5	11
1	1	0	0	0	0	0	0	0	0	2	3	5
0	0	1	0	1	1	0	1	0	0	4	7	15
0	1	0	0	1	1	0	0	0	0	3	5	9
0	0	1	0	0	1	0	1	0	0	3	6	14
0	1	0	0	1	0	0	0	0	0	2	3	5
1	0	0	0	0	0	0	1	0	0	2	2	2
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	1	1	0	1	0	0	3	4	6
0	0	0	0	1	1	0	0	0	0	2	3	5
0	0	0	0	0	1	0	1	0	0	2	3	5
0	0	0	0	1	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	72	120	240
									μ	3	5	10
									σ^2	2.167	8.333	45

Table A.25. Five Treatments, BIBD Treatment 1 & 2 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	0	0	1	1	1	3	4	6
0	0	0	0	0	0	0	1	1	0	2	3	5
0	0	0	0	0	0	0	0	1	1	2	3	5
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	12	18
									μ	1.5	2	3
									σ^2	0.917	2	5.667

Table A.26. Five Treatments, BIBD Treatment 1 & 3 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	1	1	0	0	1	3	6	14
0	0	0	0	0	1	1	0	0	0	2	5	13
0	0	0	0	0	0	1	0	0	1	2	4	10
0	0	0	0	0	1	0	0	0	0	1	2	4
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	18	42
									μ	1.5	3	7
									σ^2	0.917	4.667	31.333

Table A.27. Five Treatments, BIBD Treatment 1 & 4 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	1	0	1	0	1	0	3	6	14
0	0	0	0	1	0	1	0	0	0	2	4	10
0	0	0	0	0	0	1	0	1	0	2	5	13
0	0	0	0	1	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	0	1	0	1	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	18	42
									μ	1.5	3	7
									σ^2	0.917	4.667	31.333

Table A.28. Five Treatments, BIBD Treatment 1 & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	1	1	0	1	0	0	3	4	6
0	0	0	0	1	1	0	0	0	0	2	3	5
0	0	0	0	0	1	0	1	0	0	2	3	5
0	0	0	0	1	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	12	18
									μ	1.5	2	3
									σ^2	0.917	2	5.667

Table A.29. Five Treatments, BIBD Treatment 2 & 3 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	1	1	0	0	0	0	0	1	3	8	26
0	0	1	1	0	0	0	0	0	0	2	7	25
0	0	0	1	0	0	0	0	0	1	2	5	17
0	0	1	0	0	0	0	0	0	0	1	3	9
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	24	78
									μ	1.5	4	13
									σ^2	0.917	8.667	109.667

Table A.30. Five Treatments, BIBD Treatment 2 & 4 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	1	0	1	0	0	0	0	1	0	3	8	24
0	1	0	1	0	0	0	0	0	0	2	6	20
0	0	0	1	0	0	0	0	1	0	2	6	20
0	1	0	0	0	0	0	0	0	0	1	2	4
0	0	0	0	0	0	0	0	1	0	1	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	24	72
									μ	1.5	4	12
									σ^2	0.917	8	90.667

Table A.31. Five Treatments, BIBD Treatment 2 & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	1	1	0	0	0	0	1	0	0	3	6	14
0	1	1	0	0	0	0	0	0	0	2	5	13
0	0	1	0	0	0	0	1	0	0	2	4	10
0	1	0	0	0	0	0	0	0	0	1	2	4
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	18	42
									μ	1.5	3	7
									σ^2	0.917	4.667	31.333

Table A.32. Five Treatments, BIBD Treatment 3 & 4 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	0	0	1	0	0	1	0	0	0	3	8	26
1	0	0	1	0	0	0	0	0	0	2	5	17
0	0	0	1	0	0	1	0	0	0	2	7	25
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	0	0	1	0	0	0	1	3	9
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	24	78
									μ	1.5	4	13
									σ^2	0.917	8.667	109.667

Table A.33. Five Treatments, BIBD Treatment 3 & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	0	1	0	0	1	0	0	0	0	3	6	14
1	0	1	0	0	0	0	0	0	0	2	4	10
0	0	1	0	0	1	0	0	0	0	2	5	13
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	0	1	0	0	0	0	1	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	18	42
									μ	1.5	3	7
									σ^2	0.917	4.667	31.333

Table A.34. Five Treatments, BIBD Treatment 4 & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	1	0	0	1	0	0	0	0	0	3	4	6
1	1	0	0	0	0	0	0	0	0	2	3	5
0	1	0	0	1	0	0	0	0	0	2	3	5
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	1	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	9	12	18
									μ	1.5	2	3
									σ^2	0.917	2	5.667

Table A.35. Five Treatments, BIBD Treatment 1, 2, & 3 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	0	0	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	1	1
									μ	0.5	0.5	0.5
									σ^2	0.25	0.25	0.25

Table A.36. Five Treatments, BIBD Treatment 1, 2, & 4 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	0	0	0	1	0	1	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	2	4
									μ	0.5	1	2
									σ^2	0.25	1	4

Table A.37. Five Treatments, BIBD Treatment 1, 2, & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	0	0	1	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	1	1
									μ	0.5	0.5	0.5
									σ^2	0.25	0.25	0.25

Table A.38. Five Treatments, BIBD Treatment 1, 3, & 4 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	0	1	0	0	0	1	3	9
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	3	9
									μ	0.5	1.5	4.5
									σ^2	0.25	2.25	20.25

Table A.39. Five Treatments, BIBD Treatment 1, 3, & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	0	1	0	0	0	0	1	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	2	4
									μ	0.5	1	2
									σ^2	0.25	1	4

Table A.40. Five Treatments, BIBD Treatment 1, 4, & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	0	1	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	1	1
									μ	0.5	0.5	0.5
									σ^2	0.25	0.25	0.25

Table A.41. Five Treatments, BIBD Treatment 2, 3, & 4 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	0	1	0	0	0	0	0	0	1	4	16
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	4	16
									μ	0.5	2	8
									σ^2	0.25	4	64

Table A.42. Five Treatments, BIBD Treatment 2, 3, & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	0	1	0	0	0	0	0	0	0	1	3	9
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	3	9
									μ	0.5	1.5	4.5
									σ^2	0.25	2.25	20.25

Table A.43. Five Treatments, BIBD Treatment 2, 4, & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
0	1	0	0	0	0	0	0	0	0	1	2	4
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	2	4
									μ	0.5	1	2
									σ^2	0.25	1	4

Table A.44. Five Treatments, BIBD Treatment 3, 4, & 5 Missing

U_{a12}	U_{a13}	U_{a14}	U_{a15}	U_{a23}	U_{a24}	U_{a25}	U_{a34}	U_{a35}	U_{a45}	JT	MJT	SJT
1	0	0	0	0	0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
									Sum	1	1	1
									μ	0.5	0.5	0.5
									σ^2	0.25	0.25	0.25

Three Treatments - JT RCBD

$$
\begin{aligned}
JT_{RCBD} &= U_{a12} + U_{a13} + U_{a23} \\
E(JT_{RCBD}) &= E(U_{a12} + U_{a13} + U_{a23}) = E(U_{a12}) + E(U_{a13}) + E(U_{a23}) \\
E(JT_{RCBD}) &= \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{RCBD}) &= \frac{3}{2} = 1.5 \\
Var(JT_{RCBD}) &= Var(U_{a12} + U_{a13} + U_{a23}) \\
Var(JT_{RCBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{a23}) + 2Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 2Cov(U_{a13}, U_{a23}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1) \\
&\quad + 2 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 2 \times \frac{1}{12}n_1n_2n_3 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 2 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 2 \times \frac{1}{12}(1)(1)(1) \\
Var(JT_{RCBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

Three Treatments - MJT RCBD

$$
\begin{aligned}
MJT_{RCBD} &= U_{a12} + 2U_{a13} + U_{a23} \\
E(MJT_{RCBD}) &= E(U_{a12} + 2U_{a13} + U_{a23}) = E(U_{a12}) + 2E(U_{a13}) + E(U_{a23}) \\
E(MJT_{RCBD}) &= \frac{1}{2}n_1n_2 + 2 \times \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{RCBD}) &= 2 \\
Var(MJT_{RCBD}) &= Var(U_{a12} + 2U_{a13} + U_{a23}) \\
Var(MJT_{RCBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + Var(U_{a23}) + 4Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 4Cov(U_{a13}, U_{a23}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1) \\
&\quad + 4 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 4 \times \frac{1}{12}n_1n_2n_3 \\
Var(MJT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + 4 \times \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 4 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 4 \times \frac{1}{12}(1)(1)(1) \\
Var(MJT_{RCBD}) &= 2
\end{aligned}
$$

Three Treatments - SJT RCBD

$$
\begin{aligned}
SJT_{RCBD} &= U_{a12} + 4U_{a13} + U_{a23} \\
E(SJT_{RCBD}) &= E(U_{a12} + 4U_{a13} + U_{a23}) = E(U_{a12}) + 4E(U_{a13}) + E(U_{a23}) \\
E(SJT_{RCBD}) &= \frac{1}{2}n_1n_2 + 4 \times \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(SJT_{RCBD}) &= 3 \\
Var(SJT_{RCBD}) &= Var(U_{a12} + 4U_{a13} + U_{a23}) \\
Var(SJT_{RCBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + Var(U_{a23}) + 8Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 8Cov(U_{a13}, U_{a23}) \\
Var(SJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 16 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1) \\
&\quad + 8 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 8 \times \frac{1}{12}n_1n_2n_3 \\
Var(SJT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + 16 \times \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 8 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 8 \times \frac{1}{12}(1)(1)(1) \\
Var(SJT_{RCBD}) &= \frac{68}{12} \approx 5.6667
\end{aligned}
$$

Three Treatments with 1 Missing - JT BIBD

$$
\begin{aligned}
JT_{BIBD} &= U_{a12} + U_{a13} + U_{a23} \\
E(JT_{BIBD}) &= E(U_{a12}) + E(U_{a13}) + E(U_{a23}) \\
Var(JT_{RCBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{a23}) + 2Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 2Cov(U_{a13}, U_{a23}) \\
&\text{When treatment 1 is missing.} \\
JT_{BIBD} &= U_{a23} \\
E(JT_{BIBD}) &= E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} \\
Var(JT_{BIBD}) &= Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2 + n_3 + 1) = \frac{1}{12}(1)(1)(1 + 1 + 1) = \frac{3}{12} = \frac{1}{4} \\
&\text{When treatment 2 is missing.} \\
JT_{BIBD} &= U_{a13} \\
E(JT_{BIBD}) &= E(U_{a13}) = \frac{1}{2}n_1n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} \\
Var(JT_{BIBD}) &= Var(U_{a13}) = \frac{1}{12}n_1n_3(n_1 + n_3 + 1) = \frac{1}{12}(1)(1)(1 + 1 + 1) = \frac{3}{12} = \frac{1}{4} \\
&\text{When treatment 3 is missing.} \\
JT_{BIBD} &= U_{a12} \\
E(JT_{BIBD}) &= E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = \frac{1}{2}
\end{aligned}
$$

The variance is

$$Var(JT_{BIBD}) = Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1+n_2+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = \frac{1}{4}$$

Overall mean is:

$$E(JT_{BIBD}) = \frac{E(U_{a13}) + E(U_{a12}) + E(U_{a12})}{3} = \frac{1/2+1/2+1/2}{3} = \frac{1}{2} = 0.5$$

Overall variance is:

$$Var(JT_{BIBD}) = \frac{Var(U_{a23}) + Var(U_{a13}) + Var(U_{a12})}{3} = \frac{1/4+1/4+1/4}{3} = \frac{1}{4} = 0.25$$

Three Treatments with 1 Missing - MJT BIBD

$$\begin{aligned}
MJT_{BIBD} &= U_{a12} + 2U_{a13} + U_{a23} \\
E(MJT_{BIBD}) &= E(U_{a12}) + 2E(U_{a13}) + E(U_{a23}) \\
Var(MJT_{RCBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + Var(U_{a23}) + 4Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 4Cov(U_{a13}, U_{a23}) \\
&\text{When treatment 1 is missing.} \\
MJT_{BIBD} &= U_{a23} \\
E(MJT_{BIBD}) &= E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} \\
Var(MJT_{BIBD}) &= Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2+n_3+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = \frac{1}{4} \\
&\text{When treatment 2 is missing.} \\
MNJT_{BIBD} &= 2U_{a13} \\
E(MJT_{BIBD}) &= 2E(U_{a13}) = 2 \times \frac{1}{2}n_1n_3 = 2 \times \frac{1}{2}(1)(1) = 1 \\
Var(MJT_{BIBD}) &= 4Var(U_{a13}) = 4 \times \frac{1}{12}n_1n_3(n_1+n_3+1) = 4 \times \frac{1}{12}(1)(1)(1+1+1) \\
Var(MJT_{BIBD}) &= 1 \\
&\text{When treatment 3 is missing.} \\
MJT_{BIBD} &= U_{a12} \\
E(MJT_{BIBD}) &= E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = \frac{1}{2} \\
Var(MJT_{BIBD}) &= Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1+n_2+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = \frac{1}{4}
\end{aligned}$$

Overall mean is:

$$E(MJT_{BIBD}) = \frac{1/2+1+1/2}{3} = \frac{2}{3} \approx 0.6667$$

Overall variance is:

$$Var(MJT_{BIBD}) = \frac{1/4+1+1/4}{3} = \frac{1}{2} = 0.5$$

Three Treatments with 1 Missing - SJT BIBD

$$
\begin{aligned}
SJT_{BIBD} &= U_{a12} + 4U_{a13} + U_{a23} \\
E(SJT_{BIBD}) &= E(U_{a12}) + 4E(U_{a13}) + E(U_{a23}) \\
Var(SJT_{RCBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + Var(U_{a23}) + 8Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 8Cov(U_{a13}, U_{a23}) \\
&\text{When treatment 1 is missing.} \\
SJT_{BIBD} &= U_{a23} \\
E(SJT_{BIBD}) &= E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} \\
Var(SJT_{BIBD}) &= Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2 + n_3 + 1) = \frac{1}{12}(1)(1)(1 + 1 + 1) = \frac{3}{12} = \frac{1}{4} \\
&\text{When treatment 2 is missing.} \\
SJT_{BIBD} &= 4U_{a13} \\
E(SJT_{BIBD}) &= 4E(U_{a13}) = 4 \times \frac{1}{2}n_1n_3 = 4 \times \frac{1}{2}(1)(1) = 2 \\
Var(SJT_{BIBD}) &= 16Var(U_{a13}) = 16 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) = 16 \times \frac{1}{12}(1)(1)(1 + 1 + 1) \\
Var(SJT_{BIBD}) &= 3 \\
&\text{When treatment 3 is missing.} \\
SJT_{BIBD} &= U_{a12} \\
E(SJT_{BIBD}) &= E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = \frac{1}{2} \\
Var(SJT_{BIBD}) &= Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) = \frac{1}{12}(1)(1)(1 + 1 + 1) = \frac{3}{12} = \frac{1}{4}
\end{aligned}
$$

Overall mean is:

$$
E(SJT_{BIBD}) = \frac{1/2 + 2 + 1/2}{3} = 1
$$

Overall variance is:

$$
Var(SJT_{BIBD}) = \frac{1/4 + 4 + 1/4}{3} = \frac{3}{2} = 1.5
$$

Four Treatments - JT RCBD

$$
\begin{aligned}
JT_{RCBD} &= U_{a12} + U_{a13} + U_{a14} + U_{a23} + U_{a24} + U_{34} \\
E(JT_{RCBD}) &= E(U_{a12}) + E(U_{a13}) + E(U_{a14}) + E(U_{a23}) + E(U_{a24}) + E(U_{34}) \\
&= \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_3 + \frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_3 + \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{RCBD}) &= \frac{6}{2} = 3
\end{aligned}
$$

$$
\begin{aligned}
Var(JT_{RCBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{a14}) + Var(U_{a23}) + Var(U_{a24}) + Var(U_{34}) \\
&+ 2Cov(U_{a12}, U_{a13}) + 2Cov(U_{a12}, U_{a14}) + 2Cov(U_{a12}, U_{a23}) + 2Cov(U_{a12}, U_{a24}) \\
&+ 2Cov(U_{a12}, U_{34}) + 2Cov(U_{a13}, U_{a14}) + 2Cov(U_{a13}, U_{a23}) + 2Cov(U_{a13}, U_{a24}) \\
&+ 2Cov(U_{a13}, U_{34}) + 2Cov(3U_{a14}, U_{a23}) + 2Cov(U_{a14}, U_{a24}) + 2Cov(U_{a14}, U_{34}) \\
&+ 2Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) + 2Cov(U_{a24}, U_{34}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + \frac{1}{12}n_1n_3(n_1+n_3+1) + \frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ \frac{1}{12}n_2n_3(n_2+n_3+1) + \frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) \\
&+ 2\times\frac{1}{12}n_1n_2n_3 + 2\times\frac{1}{12}n_1n_2n_4 - 2\times\frac{1}{12}n_1n_2n_3 - 2\times\frac{1}{12}n_1n_2n_4 \\
&+ 2\times 0 + 2\times\frac{1}{12}n_1n_3n_4 + 2\times\frac{1}{12}n_1n_2n_3 + 2\times 0 - 2\times\frac{1}{12}n_1n_3n_4 + 6\times 0 \\
&+ 2\times\frac{1}{12}n_1n_2n_4 + 2\times\frac{1}{12}n_1n_3n_4 + 2\times\frac{1}{12}n_2n_3n_4 - 2\times\frac{1}{12}n_2n_3n_4 \\
&+ 2\times\frac{1}{12}n_2n_3n_4 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ 2\times\frac{1}{12}(1)(1)(1) + 2\times\frac{1}{12}(1)(1)(1) - 2\times\frac{1}{12}(1)(1)(1) - 2\times\frac{1}{12}(1)(1)(1) \\
&+ 2\times 0 + 2\times\frac{1}{12}(1)(1)(1) + 2\times\frac{1}{12}(1)(1)(1) + 2\times 0 - 2\times\frac{1}{12}(1)(1)(1) + 2\times 0 \\
&+ 2\times\frac{1}{12}(1)(1)(1) + 2\times\frac{1}{12}(1)(1)(1) + 2\times\frac{1}{12}(1)(1)(1) - 2\times\frac{1}{12}(1)(1)(1) \\
&+ 2\times\frac{1}{12}(1)(1)(1) \\
Var(MJT_{RCBD}) &= \frac{26}{12} = \frac{13}{6} \approx 2.1667
\end{aligned}
$$

Four Treatments - MJT RCBD

$$
\begin{aligned}
MJT_{RCBD} &= U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34} \\
E(MJT_{RCBD}) &= E(U_{a12}) + 2E(U_{a13}) + 3E(U_{a14}) + E(U_{a23}) + 2E(U_{a24}) + E(U_{a34}) \\
&= \frac{1}{2}n_1n_2 + 2\times\frac{1}{2}n_1n_3 + 3\times\frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_3 + 2\times\frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + 3\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{RCBD}) &= \frac{10}{2} = 5
\end{aligned}
$$

The variance is:

$$\begin{aligned}
Var(MJT_{RCBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + 9Var(U_{a14}) + Var(U_{a23}) + 4Var(U_{a24}) \\
&+ Var(U_{a34}) + 4Cov(U_{a12}, U_{a13}) + 6Cov(U_{a12}, U_{a14}) \\
&+ 2Cov(U_{a12}, U_{a23}) + 4Cov(U_{a12}, U_{a24}) + 2Cov(U_{a12}, U_{a34}) \\
&+ 12Cov(U_{a13}, U_{a14}) + 4Cov(U_{a13}, U_{a23}) + 8Cov(U_{a13}, U_{a24}) \\
&+ 4Cov(U_{a13}, U_{a34}) + 6Cov(U_{a14}, U_{a23}) + 12Cov(U_{a14}, U_{a24}) \\
&+ 6Cov(U_{a14}, U_{a34})4Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) \\
&+ 4Cov(U_{a24}, U_{a34}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 4\times\frac{1}{12}n_1n_3(n_1+n_3+1) + 9\times\frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ \frac{1}{12}n_2n_3(n_2+n_3+1) + 4\times\frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) \\
&+ 4\times\frac{1}{12}n_1n_2n_3 + 6\times\frac{1}{12}n_1n_2n_4 - 2\times\frac{1}{12}n_1n_2n_3 - 4\times\frac{1}{12}n_1n_2n_4 \\
&+ 2\times 0 + 12\times\frac{1}{12}n_1n_3n_4 + 4\times\frac{1}{12}n_1n_2n_3 + 8\times 0 - 4\times\frac{1}{12}n_1n_3n_4 + 6\times 0 \\
&+ 12\times\frac{1}{12}n_1n_2n_4 + 6\times\frac{1}{12}n_1n_3n_4 + 4\times\frac{1}{12}n_2n_3n_4 - 2\times\frac{1}{12}n_2n_3n_4 \\
&+ 4\times\frac{1}{12}n_2n_3n_4 \\
Var(MJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 4\times\frac{1}{12}(1)(1)(1+1+1) + 9\times\frac{1}{12}(1)(1)(1+1+1) \\
&+ \frac{1}{12}(1)(1)(1+1+1) + 4\times\frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ 4\times\frac{1}{12}(1)(1)(1) + 6\times\frac{1}{12}(1)(1)(1) - 2\times\frac{1}{12}(1)(1)(1) - 4\times\frac{1}{12}(1)(1)(1) \\
&+ 2\times 0 + 12\times\frac{1}{12}(1)(1)(1) + 4\times\frac{1}{12}(1)(1)(1) + 8\times 0 - 4\times\frac{1}{12}(1)(1)(1) + 6\times 0 \\
&+ 12\times\frac{1}{12}(1)(1)(1) + 6\times\frac{1}{12}(1)(1)(1) + 4\times\frac{1}{12}(1)(1)(1) - 2\times\frac{1}{12}(1)(1)(1) \\
&+ 4\times\frac{1}{12}(1)(1)(1) \\
Var(MJT_{RCBD}) &= \frac{100}{12} = \frac{25}{3} \approx 8.3333
\end{aligned}$$

Four Treatments - SJT RCBD

$$\begin{aligned}
SJT_{RCBD} &= U_{a12} + 4U_{a13} + 9U_{a14} + U_{a23} + 4U_{a24} + U_{a34} \\
E(SJT_{RCBD}) &= E(U_{a12}) + 4E(U_{a13}) + 9E(U_{a14}) + E(U_{a23}) + 4E(U_{a24}) + E(U_{a34}) \\
&= \frac{1}{2}n_1n_2 + 4\times\frac{1}{2}n_1n_3 + 9\times\frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_3 + 4\times\frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + 4\times\frac{1}{2}(1)(1) + 9\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 4\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(SJT_{RCBD}) &= \frac{20}{2} = 10
\end{aligned}$$

$$\begin{aligned}
Var(SJT_{RCBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + 81Var(U_{a14}) + Var(U_{a23}) + 16Var(U_{a24}) \\
&+ Var(U_{a34}) + 8Cov(U_{a12}, U_{a13}) + 18Cov(U_{a12}, U_{a14}) \\
&+ 2Cov(U_{a12}, U_{a23}) + 8Cov(U_{a12}, U_{a24}) + 8Cov(U_{a12}, U_{a34}) \\
&+ 72Cov(U_{a13}, U_{a14}) + 8Cov(U_{a13}, U_{a23}) + 32Cov(U_{a13}, U_{a24}) \\
&+ 8Cov(U_{a13}, U_{a34}) + 18Cov(U_{a14}, U_{a23}) + 72Cov(U_{a14}, U_{a24}) \\
&+ 18Cov(U_{a14}, U_{a34}) + 8Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) \\
&+ 8Cov(U_{a24}, U_{a34}) \\
Var(SJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 16 \times \frac{1}{12}n_1n_3(n_1+n_3+1) + 81 \times \frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ \frac{1}{12}n_2n_3(n_2+n_3+1) + 16 \times \frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) \\
&+ 8 \times \frac{1}{12}n_1n_2n_3 + 18 \times \frac{1}{12}n_1n_2n_4 - 2 \times \frac{1}{12}n_1n_2n_3 - 8 \times \frac{1}{12}n_1n_2n_4 \\
&+ 8 \times 0 + 72 \times \frac{1}{12}n_1n_3n_4 + 8 \times \frac{1}{12}n_1n_2n_3 + 32 \times 0 - 8 \times \frac{1}{12}n_1n_3n_4 + 18 \times 0 \\
&+ 72 \times \frac{1}{12}n_1n_2n_4 + 18 \times \frac{1}{12}n_1n_3n_4 + 8 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 \\
&+ 8 \times \frac{1}{12}n_2n_3n_4 \\
Var(SJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 16 \times \frac{1}{12}(1)(1)(1+1+1) + 81 \times \frac{1}{12}(1)(1)(1+1+1) \\
&+ \frac{1}{12}(1)(1)(1+1+1) + 16 \times \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ 8 \times \frac{1}{12}(1)(1)(1) + 18 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) - 8 \times \frac{1}{12}(1)(1)(1) \\
&+ 8 \times 0 + 72 \times \frac{1}{12}(1)(1)(1) + 8 \times \frac{1}{12}(1)(1)(1) + 32 \times 0 - 8 \times \frac{1}{12}(1)(1)(1) + 18 \times 0 \\
&+ 72 \times \frac{1}{12}(1)(1)(1) + 18 \times \frac{1}{12}(1)(1)(1) + 8 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) \\
&+ 8 \times \frac{1}{12}(1)(1)(1) \\
Var(SJT_{RCBD}) &= \frac{540}{12} = 45
\end{aligned}$$

Four Treatments with 1 Missing - JT BIBD

$$JT_{RCBD} = U_{a12} + U_{a13} + U_{a14} + U_{a23} + U_{a24} + U_{a34}$$

When treatment 1 is missing.

$$\begin{aligned}
JT_{RCBD} &= U_{a23} + U_{a24} + U_{a34} \\
E(JT_{RCBD}) &= E(U_{a23}) + E(U_{a24}) + E(U_{a34}) = \frac{1}{2}n_2n_3 + \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
E(JT_{RCBD}) &= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{3}{2} = 1.5
\end{aligned}$$

$$
\begin{aligned}
Var(JT_{RCBD}) &= Var(U_{a23}) + Var(U_{a24}) + Var(U_{a34}) + 2Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) \\
&\quad + 2Cov(U_{a24}, U_{a34}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&\quad + 2 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 + 2 \times \frac{1}{12}n_2n_3n_4 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 2 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 2 \times \frac{1}{12}(1)(1)(1) \\
Var(JT_{RCBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

When treatment 2 is missing.

$$
\begin{aligned}
JT_{RCBD} &= U_{a13} + U_{a14} + U_{a34} \\
E(JT_{RCBD}) &= E(U_{a13}) + E(U_{a14}) + E(U_{a34}) = \frac{1}{2}n_1n_3 + \frac{1}{2}n_1n_4 + \frac{1}{2}n_3n_4 \\
E(JT_{RCBD}) &= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{3}{2} = 1.5 \\
Var(JT_{RCBD}) &= Var(U_{a13}) + Var(U_{a14}) + Var(U_{a34}) + 2Cov(U_{a13}, U_{a14}) + 2Cov(U_{a13}, U_{a34}) \\
&\quad + 2Cov(U_{a14}, U_{a34}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&\quad + 2 \times \frac{1}{12}n_1n_3n_4 - 2 \times \frac{1}{12}n_1n_3n_4 + 2 \times \frac{1}{12}n_1n_3n_4 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 2 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 2 \times \frac{1}{12}(1)(1)(1) \\
Var(JT_{RCBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

When treatment 3 is missing.

$$
\begin{aligned}
JT_{RCBD} &= U_{a12} + U_{a14} + U_{a24} \\
E(JT_{RCBD}) &= E(U_{a12}) + E(U_{a14}) + E(U_{a24}) = \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_4 \\
E(JT_{RCBD}) &= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{3}{2} = 1.5 \\
Var(JT_{RCBD}) &= Var(U_{a12}) + Var(U_{a14}) + Var(U_{24}) + 2Cov(U_{a12}, U_{a14}) + 2Cov(U_{a12}, U_{24}) \\
&\quad + 2Cov(U_{a14}, U_{24}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_2n_4(n_2 + n_4 + 1) \\
&\quad + 2 \times \frac{1}{12}n_1n_2n_4 - 2 \times \frac{1}{12}n_1n_2n_4 + 2 \times \frac{1}{12}n_1n_2n_4 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 2 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 2 \times \frac{1}{12}(1)(1)(1) \\
Var(JT_{RCBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

When treatment 4 is missing

$$
\begin{aligned}
JT_{RCBD} &= U_{a12} + U_{a13} + U_{a23} \\
E(JT_{RCBD}) &= E(U_{a12}) + E(U_{a13}) + E(U_{a23}) = \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 \\
E(JT_{RCBD}) &= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{3}{2} = 1.5 \\
Var(JT_{RCBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{23}) + 2Cov(U_{a12}, U_{a13}) + 2Cov(U_{a12}, U_{a23}) \\
&\quad + 2Cov(U_{a13}, U_{a12}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1) \\
&\quad + 2 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 2 \times \frac{1}{12}n_1n_2n_3 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 2 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 2 \times \frac{1}{12}(1)(1)(1) \\
Var(JT_{RCBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

Overall mean is:

$$E(JT_{BIBD}) = \frac{3/2 + 3/2 + 3/2 + 3/2}{4} = \frac{3}{2} = 1.5$$

Overall variance is:

$$Var(JT_{BIBD}) = \frac{11/12 + 11/12 + 11/12 + 11/12}{4} = \frac{11}{12} \approx 0.9167$$

Four Treatments with 1 Missing - MJT BIBD

$$MJT_{RCBD} = U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34}$$

When treatment 1 is missing.

$$
\begin{aligned}
MJT_{RCBD} &= U_{a23} + 2U_{a24} + U_{a34} \\
E(MJT_{RCBD}) &= E(U_{a23}) + 2E(U_{a24}) + E(U_{34}) = \frac{1}{2}n_2n_3 + 2 \times \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
E(MJT_{RCBD}) &= \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{4}{2} = 2 \\
Var(MJT_{RCBD}) &= Var(U_{a23}) + 4Var(U_{a24}) + Var(U_{a34}) + 4Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) \\
&\quad + 4Cov(U_{a24}, U_{34}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + 4 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&\quad + 4 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 + 4 \times \frac{1}{12}n_2n_3n_4 \\
Var(MJT_{RCBD}) &= \frac{1}{12}(1)(1)(1 + 1 + 1) + 4 \times \frac{1}{12}(1)(1)(1 + 1 + 1) + \frac{1}{12}(1)(1)(1 + 1 + 1) \\
&\quad + 4 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 4 \times \frac{1}{12}(1)(1)(1)
\end{aligned}
$$

$$
\begin{aligned}
Var(MJT_{RCBD}) &= \frac{24}{12} = 2 \\
&\text{When treatment 2 is missing.} \\
MJT_{RCBD} &= 2U_{a13} + 3U_{a14} + U_{a34} \\
E(MJT_{RCBD}) &= 2E(U_{a13}) + 3E(U_{a14}) + E(U_{a34}) = 2 \times \frac{1}{2}n_1n_3 + 3 \times \frac{1}{2}n_1n_4 + \frac{1}{2}n_3n_4 \\
E(MJT_{RCBD}) &= 2 \times \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{6}{2} = 3 \\
Var(MJT_{RCBD}) &= 4Var(U_{a13}) + 9Var(U_{a14}) + Var(U_{a34}) + 12Cov(U_{a13}, U_{a14}) \\
&+ 4Cov(U_{a13}, U_{a34}) + 6Cov(U_{a14}, U_{a34}) \\
Var(MJT_{RCBD}) &= 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + 9 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&+ 12 \times \frac{1}{12}n_1n_3n_4 - 4 \times \frac{1}{12}n_1n_3n_4 + 6 \times \frac{1}{12}n_1n_3n_4 \\
Var(MJT_{RCBD}) &= 4 \times \frac{1}{12}(1)(1)(1+1+1) + 9 \times \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ 12 \times \frac{1}{12}(1)(1)(1) - 4 \times \frac{1}{12}(1)(1)(1) + 6 \times \frac{1}{12}(1)(1)(1) \\
Var(MJT_{RCBD}) &= \frac{56}{12} \approx 4.6667 \\
&\text{When treatment 3 is missing.} \\
MJT_{RCBD} &= U_{a12} + 3U_{a14} + 2U_{a24} \\
E(MJT_{RCBD}) &= E(U_{a12}) + 3E(U_{a14}) + 2E(U_{a24}) = \frac{1}{2}n_1n_2 + 3 \times \frac{1}{2}n_1n_4 + 2 \times \frac{1}{2}n_2n_4 \\
E(MJT_{RCBD}) &= \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) = \frac{6}{2} = 3 \\
Var(MJT_{RCBD}) &= Var(U_{a12}) + 9Var(U_{a14}) + 4Var(U_{a24}) + 6Cov(U_{a12}, U_{a14}) + 4Cov(U_{a12}, U_{a24}) \\
&+ 12Cov(U_{a14}, U_{a24}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 9 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + 4 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) \\
&+ 6 \times \frac{1}{12}n_1n_2n_4 - 4 \times \frac{1}{12}n_1n_2n_4 + 12 \times \frac{1}{12}n_1n_2n_4 \\
Var(MJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 9 \times \frac{1}{12}(1)(1)(1+1+1) + 4 \times \frac{1}{12}(1)(1)(1+1+1) \\
&+ 6 \times \frac{1}{12}(1)(1)(1) - 4 \times \frac{1}{12}(1)(1)(1) + 12 \times \frac{1}{12}(1)(1)(1) \\
Var(MJT_{RCBD}) &= \frac{56}{12} \approx 4.6667 \\
&\text{When treatment 4 is missing.} \\
MJT_{RCBD} &= U_{a12} + 2U_{a13} + U_{a23} \\
E(MJT_{RCBD}) &= E(U_{a12}) + 2E(U_{a13}) + E(U_{a23}) = \frac{1}{2}n_1n_2 + 2 \times \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 \\
E(MJT_{RCBD}) &= \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{4}{2} = 2 \\
Var(MJT_{RCBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + Var(U_{a23}) + 4Cov(U_{a12}, U_{a13}) + 2Cov(U_{a12}, U_{a23}) \\
&+ 4Cov(U_{a13}, U_{a12})
\end{aligned}
$$

$$Var(MJT_{RCBD}) = \frac{1}{12}n_1n_2(n_1+n_2+1) + 4\times\frac{1}{12}n_1n_3(n_1+n_3+1) + \frac{1}{12}n_2n_3(n_2+n_3+1)$$
$$+ 4\times\frac{1}{12}n_1n_2n_3 - 2\times\frac{1}{12}n_1n_2n_3 + 4\times\frac{1}{12}n_1n_2n_3$$
$$Var(MJT_{RCBD}) = \frac{1}{12}(1)(1)(1+1+1) + 4\times\frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1)$$
$$+ 4\times\frac{1}{12}(1)(1)(1) - 2\times\frac{1}{12}(1)(1)(1) + 4\times\frac{1}{12}(1)(1)(1)$$
$$Var(MJT_{RCBD}) = \frac{24}{12} = 2$$

Overall mean is:

$$E(MJT_{BIBD}) = \frac{2+3+3+2}{4} = \frac{10}{4} = 2.5$$

Overall variance is:

$$Var(MJT_{BIBD}) = \frac{2+56/12+56/12+2}{4} = \frac{10}{3} \approx 3.3333$$

Four Treatments with 1 Missing - SJT BIBD

$$SJT_{RCBD} = U_{a12} + 4U_{a13} + 9U_{a14} + U_{a23} + 4U_{a24} + U_{a34}$$

When treatment 1 is missing.

$$SJT_{RCBD} = U_{a23} + 4U_{a24} + U_{a34}$$
$$E(SJT_{RCBD}) = E(U_{a23}) + 4E(U_{a24}) + E(U_{a34}) = \frac{1}{2}n_2n_3 + 4\times\frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4$$
$$E(SJT_{RCBD}) = \frac{1}{2}(1)(1) + 4\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{6}{2} = 3$$
$$Var(SJT_{RCBD}) = Var(U_{a23}) + 16Var(U_{a24}) + Var(U_{a34}) + 8Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34})$$
$$+ 8Cov(U_{a24}, U_{a34})$$
$$Var(SJT_{RCBD}) = \frac{1}{12}n_2n_3(n_2+n_3+1) + 16\times\frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1)$$
$$+ 8\times\frac{1}{12}n_2n_3n_4 - 2\times\frac{1}{12}n_2n_3n_4 + 8\times\frac{1}{12}n_2n_3n_4$$
$$Var(SJT_{RCBD}) = \frac{1}{12}(1)(1)(1+1+1) + 16\times\frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1)$$
$$+ 8\times\frac{1}{12}(1)(1)(1) - 2\times\frac{1}{12}(1)(1)(1) + 8\times\frac{1}{12}(1)(1)(1)$$
$$Var(SJT_{RCBD}) = \frac{68}{12} \approx 5.6667$$

When treatment 2 is missing.

$$SJT_{RCBD} = 4U_{a13} + 9U_{a14} + U_{a34}$$
$$E(SJT_{RCBD}) = 4E(U_{a13}) + 9E(U_{a14}) + E(U_{a34}) = 4\times\frac{1}{2}n_1n_3 + 9\times\frac{1}{2}n_1n_4 + \frac{1}{2}n_3n_4$$
$$E(SJT_{RCBD}) = 4\times\frac{1}{2}(1)(1) + 9\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{14}{2} = 7$$

$$
\begin{aligned}
Var(SJT_{RCBD}) &= 16Var(U_{a13}) + 81Var(U_{a14}) + Var(U_{a34}) + 72Cov(U_{a13}, U_{a14}) \\
&+ 8Cov(U_{a13}, U_{a34}) + 18Cov(U_{a14}, U_{a34}) \\
Var(SJT_{RCBD}) &= 16 \times \frac{1}{12} n_1 n_3 (n_1 + n_3 + 1) + 81 \times \frac{1}{12} n_1 n_4 (n_1 + n_4 + 1) + \frac{1}{12} n_3 n_4 (n_3 + n_4 + 1) \\
&+ 72 \times \frac{1}{12} n_1 n_3 n_4 - 8 \times \frac{1}{12} n_1 n_3 n_4 + 18 \times \frac{1}{12} n_1 n_3 n_4 \\
Var(SJT_{RCBD}) &= 16 \times \frac{1}{12}(1)(1)(1+1+1) + 81 \times \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ 72 \times \frac{1}{12}(1)(1)(1) - 8 \times \frac{1}{12}(1)(1)(1) + 18 \times \frac{1}{12}(1)(1)(1) \\
Var(SJT_{RCBD}) &= \frac{376}{12} \approx 31.3333
\end{aligned}
$$

When treatment 3 is missing.

$$
\begin{aligned}
SJT_{RCBD} &= U_{a12} + 9U_{a14} + 4U_{a24} \\
E(SJT_{RCBD}) &= E(U_{a12}) + 9E(U_{a14}) + 4E(U_{a24}) = \frac{1}{2} n_1 n_2 + 9 \times \frac{1}{2} n_1 n_4 + 4 \times \frac{1}{2} n_2 n_4 \\
E(SJT_{RCBD}) &= \frac{1}{2}(1)(1) + 9 \times \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) = \frac{14}{2} = 7 \\
Var(SJT_{RCBD}) &= Var(U_{a12}) + 81Var(U_{a14}) + 16Var(U_{a24}) + 18Cov(U_{a12}, U_{a14}) \\
&+ 8Cov(U_{a12}, U_{a24}) + 72Cov(U_{a14}, U_{a24}) \\
Var(SJT_{RCBD}) &= \frac{1}{12} n_1 n_2 (n_1 + n_2 + 1) + 81 \times \frac{1}{12} n_1 n_4 (n_1 + n_4 + 1) + 16 \times \frac{1}{12} n_2 n_4 (n_2 + n_4 + 1) \\
&+ 18 \times \frac{1}{12} n_1 n_2 n_4 - 8 \times \frac{1}{12} n_1 n_2 n_4 + 72 \times \frac{1}{12} n_1 n_2 n_4 \\
Var(SJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 81 \times \frac{1}{12}(1)(1)(1+1+1) + 16 \times \frac{1}{12}(1)(1)(1+1+1) \\
&+ 18 \times \frac{1}{12}(1)(1)(1) - 8 \times \frac{1}{12}(1)(1)(1) + 72 \times \frac{1}{12}(1)(1)(1) \\
Var(SJT_{RCBD}) &= \frac{376}{12} \approx 31.3333
\end{aligned}
$$

When treatment 4 is missing.

$$
\begin{aligned}
SJT_{RCBD} &= U_{a12} + 4U_{a13} + U_{a23} \\
E(SJT_{RCBD}) &= E(U_{a12}) + 4E(U_{a13}) + E(U_{a23}) = \frac{1}{2} n_1 n_2 + 4 \times \frac{1}{2} n_1 n_3 + \frac{1}{2} n_2 n_3 \\
E(SJT_{RCBD}) &= \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) = \frac{6}{2} = 3 \\
Var(SJT_{RCBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + Var(U_{a23}) + 8Cov(U_{a12}, U_{a13}) \\
&+ 2Cov(U_{a12}, U_{a23}) + 8Cov(U_{a13}, U_{a12}) \\
Var(SJT_{RCBD}) &= \frac{1}{12} n_1 n_2 (n_1 + n_2 + 1) + 16 \times \frac{1}{12} n_1 n_3 (n_1 + n_3 + 1) + \frac{1}{12} n_2 n_3 (n_2 + n_3 + 1) \\
&+ 8 \times \frac{1}{12} n_1 n_2 n_3 - 2 \times \frac{1}{12} n_1 n_2 n_3 + 8 \times \frac{1}{12} n_1 n_2 n_3 \\
Var(SJT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + 16 \times \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ 8 \times \frac{1}{12}(1)(1)(1) - 2 \times \frac{1}{12}(1)(1)(1) + 8 \times \frac{1}{12}(1)(1)(1)
\end{aligned}
$$

$$Var(SJT_{RCBD}) = \frac{68}{12} \approx 5.6667$$

Overall mean is:

$$E(SJT_{BIBD}) = \frac{3+7+7+3}{4} = 5$$

Overall variance is:

$$Var(SJT_{BIBD}) = \frac{68/12 + 376/12 + 376/12 + 68/12}{4} = 18.5 \approx 3.3333$$

Four Treatments with 2 Missing - JT BIBD

$$JT_{RCBD} = U_{a12} + U_{a13} + U_{a14} + U_{a23} + U_{a24} + U_{a34}$$

When treatments 1 & 2 are missing.

$$JT_{RCBD} = U_{a34}$$

$$E(JT_{RCBD}) = E(U_{a34}) = \frac{1}{2}n_3n_4 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(JT_{RCBD}) = Var(U_{a34}) = \frac{1}{12}n_3n_4(n_3+n_4+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

When treatments 1 & 3 are missing.

$$JT_{RCBD} = U_{a24}$$

$$E(JT_{RCBD}) = E(U_{a24}) = \frac{1}{2}n_2n_4 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(JT_{RCBD}) = Var(U_{a24}) = \frac{1}{12}n_2n_4(n_2+n_4+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

When treatments 1 & 4 are missing.

$$JT_{RCBD} = U_{a23}$$

$$E(JT_{RCBD}) = E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(JT_{RCBD}) = Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2+n_3+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

When treatments 2 & 3 are missing.

$$JT_{RCBD} = U_{a14}$$

$$E(JT_{RCBD}) = E(U_{a14}) = \frac{1}{2}n_1n_4 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(JT_{RCBD}) = Var(U_{a14}) = \frac{1}{12}n_1n_4(n_1+n_4+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

When treatment 2 & 4 are missing.

$$JT_{RCBD} = U_{a13}$$

$$E(JT_{RCBD}) = E(U_{a13}) = \frac{1}{2}n_1n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(JT_{RCBD}) = Var(U_{a13}) = \frac{1}{12}n_1n_3(n_1+n_3+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

When treatments 3 & 4 are missing.

$$JT_{RCBD} = U_{a12}$$

$$E(JT_{RCBD}) = E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(JT_{RCBD}) = Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1+n_2+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

Overall mean is:

$$E(JT_{BIBD}) = \frac{1/2+1/2+1/2+1/2+1/2+1/2}{6} = \frac{1}{2} = 0.5$$

Overall variance is:

$$Var(JT_{BIBD}) = \frac{3/12+3/12+3/12+3/12+3/12+3/12}{6} = \frac{3}{12} \approx 0.25$$

Four Treatments with 2 Missing - MJT BIBD

$$MJT_{RCBD} = U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34}$$

When treatments 1 & 2 are missing.

$$MJT_{RCBD} = U_{a34}$$

$$E(MJT_{RCBD}) = E(U_{a34}) = \frac{1}{2}n_3n_4 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(MJT_{RCBD}) = Var(U_{34}) = \frac{1}{12}n_3n_4(n_3+n_4+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

When treatments 1 & 3 are missing.

$$MJT_{RCBD} = 2U_{a24}$$

$$E(MJT_{RCBD}) = 2E(U_{a24}) = 2\times\frac{1}{2}n_2n_4 = 2\times\frac{1}{2}(1)(1) = 1$$

$$Var(MJT_{RCBD}) = 4Var(U_{a24}) = 4\times\frac{1}{12}n_2n_4(n_2+n_4+1) = 4\times\frac{1}{12}(1)(1)(1+1+1)$$

$$Var(MJT_{RCBD}) = 1$$

When treatments 1 & 4 are missing.

$$MJT_{RCBD} = U_{a23}$$

$$E(MJT_{RCBD}) = E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$

$$Var(MJT_{RCBD}) = Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2+n_3+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25$$

When treatments 2 & 3 are missing.

$$MJT_{RCBD} = 3U_{a14}$$

$$E(MJT_{RCBD}) = 3E(U_{a14}) = 3\times\frac{1}{2}n_1n_4 = 3\times\frac{1}{2}(1)(1) = \frac{3}{2} = 1.5$$

$$Var(MJT_{RCBD}) = 9Var(U_{a14}) = 9\times\frac{1}{12}n_1n_4(n_1+n_4+1) = 9\times\frac{1}{12}(1)(1)(1+1+1)$$

$$Var(MJT_{RCBD}) = \frac{27}{12} = 2.25$$

When treatment 2 & 4 are missing.

$$MJT_{RCBD} = 2U_{a13}$$
$$E(MJT_{RCBD}) = 2E(U_{a13}) = 2 \times \frac{1}{2}n_1n_3 = 2 \times \frac{1}{2}(1)(1) = 1$$
$$Var(MJT_{RCBD}) = 4Var(U_{a13}) = 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) = 4 \times \frac{1}{12}(1)(1)(1 + 1 + 1)$$
$$Var(MJT_{RCBD}) = 1$$

When treatments 3 & 4 are missing.

$$MJT_{RCBD} = U_{a12}$$
$$E(MJT_{RCBD}) = E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$
$$Var(MJT_{RCBD}) = Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) = \frac{1}{12}(1)(1)(1 + 1 + 1) = \frac{3}{12} = 0.25$$

Overall mean is:

$$E(MJT_{BIBD}) = \frac{1/2 + 1 + 1/2 + 3/2 + 1 + 1/2}{6} = \frac{5}{6} \approx 0.8333$$

Overall variance is:

$$Var(MJT_{BIBD}) = \frac{3/12 + 1 + 3/12 + 27/12 + 1 + 3/12}{6} = \frac{5}{6} \approx 0.8333$$

Four Treatments with 2 Missing - SJT BIBD

$$SJT_{RCBD} = U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34}$$

When treatments 1 & 2 are missing.

$$SJT_{RCBD} = U_{a34}$$
$$E(SJT_{RCBD}) = E(U_{a34}) = \frac{1}{2}n_3n_4 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$
$$Var(SJT_{RCBD}) = Var(U_{a34}) = \frac{1}{12}n_3n_4(n_3 + n_4 + 1) = \frac{1}{12}(1)(1)(1 + 1 + 1) = \frac{3}{12} = 0.25$$

When treatments 1 & 3 are missing.

$$SJT_{RCBD} = 4U_{a24}$$
$$E(SJT_{RCBD}) = 4E(U_{a24}) = 4 \times \frac{1}{2}n_2n_4 = 4 \times \frac{1}{2}(1)(1) = 2$$
$$Var(SJT_{RCBD}) = 16Var(U_{a24}) = 16 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) = 16 \times \frac{1}{12}(1)(1)(1 + 1 + 1)$$
$$Var(SJT_{RCBD}) = 4$$

When treatments 1 & 4 are missing.

$$SJT_{RCBD} = U_{a23}$$
$$E(SJT_{RCBD}) = E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5$$
$$Var(SJT_{RCBD}) = Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2 + n_3 + 1) = \frac{1}{12}(1)(1)(1 + 1 + 1) = \frac{3}{12} = 0.25$$

When treatments 2 & 3 are missing.

$$\begin{aligned}
SJT_{RCBD} &= 9U_{a14}\\
E(SJT_{RCBD}) &= 9E(U_{a14}) = 9 \times \frac{1}{2}n_1n_4 = 9 \times \frac{1}{2}(1)(1) = \frac{9}{2} = 4.5\\
Var(SJT_{RCBD}) &= 81Var(U_{a14}) = 81 \times \frac{1}{12}n_1n_4(n_1+n_4+1) = 81 \times \frac{1}{12}(1)(1)(1+1+1)\\
Var(SJT_{RCBD}) &= \frac{243}{12} = 20.25
\end{aligned}$$

When treatment 2 & 4 are missing.

$$\begin{aligned}
SJT_{RCBD} &= 4U_{a13}\\
E(SJT_{RCBD}) &= 4E(U_{a13}) = 4 \times \frac{1}{2}n_1n_3 = 4 \times \frac{1}{2}(1)(1) = 2\\
Var(SJT_{RCBD}) &= 16Var(U_{a13}) = 16 \times \frac{1}{12}n_1n_3(n_1+n_3+1) = 16 \times \frac{1}{12}(1)(1)(1+1+1)\\
Var(SJT_{RCBD}) &= 4
\end{aligned}$$

When treatments 3 & 4 are missing.

$$\begin{aligned}
SJT_{RCBD} &= U_{a12}\\
E(SJT_{RCBD}) &= E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = \frac{1}{2} = 0.5\\
Var(SJT_{RCBD}) &= Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1+n_2+1) = \frac{1}{12}(1)(1)(1+1+1) = \frac{3}{12} = 0.25
\end{aligned}$$

Overall mean is:

$$E(SJT_{BIBD}) = \frac{1/2+2+1/2+9/2+2+1/2}{6} = \frac{5}{3} \approx 1.6667$$

Overall variance is:

$$Var(SJT_{BIBD}) = \frac{3/12+1+3/12+27/12+1+3/12}{6} = \frac{29}{6} \approx 4.8333$$

Five treatments - JT RCBD

$$\begin{aligned}
JT_{RCBD} &= U_{a12}+U_{a13}+U_{a14}+U_{a15}+U_{a23}+U_{a24}+U_{a25}+U_{a34}+U_{a35}+U_{a45}\\
E(JT_{RCBD}) &= E(U_{a12})+E(U_{a13})+E(U_{a14})+E(U_{a15})+E(U_{a23})+E(U_{a24})+E(U_{a25})\\
&\quad + E(U_{a34})+E(U_{a35})+E(U_{a45})\\
&= \frac{1}{2}n_1n_2+\frac{1}{2}n_1n_3+\frac{1}{2}n_1n_4+\frac{1}{2}n_1n_5+\frac{1}{2}n_2n_3+\frac{1}{2}n_2n_4+\frac{1}{2}n_2n_5+\frac{1}{2}n_3n_4+\frac{1}{2}n_3n_5\\
&\quad + \frac{1}{2}n_4n_5\\
&= \frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)\\
&\quad + \frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)\\
E(JT_{RCBD}) &= \frac{10}{2} = 5
\end{aligned}$$

$$
\begin{aligned}
Var(JT_{RCBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{a14}) + Var(U_{a15}) + Var(U_{a23}) + Var(U_{a24}) \\
&+ Var(U_{a25}) + Var(U_{a34}) + Var(U_{a35}) + Var(U_{a45}) + 2Cov(U_{a12}, U_{a13}) \\
&+ 2Cov(U_{a12}, U_{a14}) + 2Cov(U_{a12}, U_{a15}) + 2Cov(U_{a12}, U_{a23}) + 2Cov(U_{a12}, U_{a24}) \\
&+ 2Cov(U_{a12}, U_{a25}) + 2Cov(U_{a12}, U_{a34}) + 2Cov(U_{a12}, U_{a35}) + 2Cov(U_{a12}, U_{a45}) \\
&+ 2Cov(U_{a13}, U_{a14}) + 2Cov(U_{a13}, U_{a15}) + 2Cov(U_{a13}, U_{a23}) + 2Cov(U_{a13}, U_{a24}) \\
&+ 2Cov(U_{a13}, U_{a25}) + 2Cov(U_{a13}, U_{a34}) + 2Cov(U_{a13}, U_{a35}) + 2Cov(U_{a13}, U_{a45}) \\
&+ 2Cov(U_{a14}, U_{a15}) + 2Cov(U_{a14}, U_{a23}) + 2Cov(U_{a14}, U_{a24}) + 2Cov(U_{a14}, U_{a25}) \\
&+ 2Cov(U_{a14}, U_{a34}) + 2Cov(U_{a14}, U_{a35}) + 2Cov(U_{a14}, U_{a45}) + 2Cov(U_{a15}, U_{a23}) \\
&+ 2Cov(U_{a15}, U_{a24}) + 2Cov(U_{a15}, U_{a25}) + 2Cov(U_{a15}, U_{a34}) + 2Cov(U_{a15}, U_{a35}) \\
&+ 2Cov(U_{a15}, U_{a45}) + 2Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a25}) + 2Cov(U_{a23}, U_{a34}) \\
&+ 2Cov(U_{a23}, U_{a35}) + 2Cov(U_{a23}, U_{a45}) + 2Cov(U_{a24}, U_{a25}) + 2Cov(U_{a24}, U_{a34}) \\
&+ 2Cov(U_{a24}, U_{a35}) + 2Cov(U_{a24}, U_{a45}) + 2Cov(U_{a25}, U_{a34}) + 2Cov(U_{a25}, U_{a35}) \\
&+ 2Cov(U_{a25}, U_{a45}) + 2Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 2Cov(U_{a35}, U_{a45}) \\
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + \frac{1}{12}n_1n_3(n_1+n_3+1) + \frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ \frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_2n_3(n_2+n_3+1) + \frac{1}{12}n_2n_4(n_2+n_4+1) \\
&+ \frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) + \frac{1}{12}n_3n_5(n_3+n_5+1) \\
&+ \frac{1}{12}n_4n_5(n_4+n_5+1) + 2\times\frac{1}{12}n_1n_2n_3 + 2\times\frac{1}{12}n_1n_2n_4 \\
&+ 2\times\frac{1}{12}n_1n_2n_5 - 2\times\frac{1}{12}n_1n_2n_3 - 2\times\frac{1}{12}n_1n_2n_4 - 2\times\frac{1}{12}n_1n_2n_5 + 2\times 0 + 2\times 0 \\
&+ 2\times 0 + 2\times\frac{1}{12}n_1n_3n_4 + 2\times\frac{1}{12}n_1n_3n_5 + 2\times\frac{1}{12}n_1n_2n_3 + 2\times 0 + 2\times 0 \\
&- 2\times\frac{1}{12}n_1n_3n_4 - 2\times\frac{1}{12}n_1n_3n_5 + 2\times 0 + 2\times\frac{1}{12}n_1n_4n_5 + 2\times 0 + 2\times\frac{1}{12}n_1n_2n_4 \\
&+ 2\times 0 + 2\times\frac{1}{12}n_1n_3n_4 + 2\times 0 - 2\times\frac{1}{12}n_1n_4n_5 + 2\times 0 + 2\times 0 + 2\times\frac{1}{12}n_1n_2n_5 \\
&+ 2\times 0 + 2\times\frac{1}{12}n_1n_3n_5 + 2\times\frac{1}{12}n_1n_4n_5 + 2\times\frac{1}{12}n_2n_3n_4 + 2\times\frac{1}{12}n_2n_3n_5 \\
&- 2\times\frac{1}{12}n_2n_3n_4 - 2\times\frac{1}{12}n_2n_3n_5 + 2\times 0 + 2\times\frac{1}{12}n_2n_4n_5 + 2\times\frac{1}{12}n_2n_3n_4 \\
&+ 2\times 0 - 2\times\frac{1}{12}n_2n_4n_5 + 2\times 0 + 2\times\frac{1}{12}n_2n_3n_5 + 2\times\frac{1}{12}n_2n_4n_5 + 2\times\frac{1}{12}n_3n_4n_5 \\
&- 2\times\frac{1}{12}n_3n_4n_5 + 2\times\frac{1}{12}n_3n_4n_5
\end{aligned}
$$

But some of the covariances will cancel out, or will be equal to 0.

$$
\begin{aligned}
Var(JT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + \frac{1}{12}n_1n_3(n_1+n_3+1) + \frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ \frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_2n_3(n_2+n_3+1) + \frac{1}{12}n_2n_4(n_2+n_4+1) \\
&+ \frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) + \frac{1}{12}n_3n_5(n_3+n_5+1) \\
&+ \frac{1}{12}n_4n_5(n_4+n_5+1) + 2\times\frac{1}{12}n_1n_2n_3 + 2\times\frac{1}{12}n_1n_2n_4 + 2\times\frac{1}{12}n_1n_3n_4 \\
&+ 2\times\frac{1}{12}n_1n_2n_5 + 2\times\frac{1}{12}n_1n_3n_5 + 2\times\frac{1}{12}n_1n_4n_5 + 2\times\frac{1}{12}n_2n_3n_4 \\
&+ 2\times\frac{1}{12}n_2n_3n_5 + 2\times\frac{1}{12}n_2n_4n_5 + 2\times\frac{1}{12}n_3n_4n_5 \\
Var(JT_{RCBD}) &= \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) + \frac{1}{12}(1)(1)(1+1+1) \\
&+ \frac{1}{12}(1)(1)(1+1+1) + \frac{2}{12}(1)(1)(1) + \frac{2}{12}(1)(1)(1) + \frac{2}{12}(1)(1)(1) \\
&+ \frac{2}{12}(1)(1)(1) + \frac{2}{12}(1)(1)(1) + \frac{2}{12}(1)(1)(1) + \frac{2}{12}(1)(1)(1) + \frac{2}{12}(1)(1)(1) \\
&+ \frac{2}{12}(1)(1)(1) + \frac{2}{12}(1)(1)(1)
\end{aligned}
$$

$$Var(JT_{RCBD}) = \frac{25}{6} \approx 4.1667$$

Five treatments - MJT RCBD

$$
\begin{aligned}
MJT_{RCBD} &= U_{a12} + 2U_{a13} + 3U_{a14} + 4U_{a15} + U_{a23} + 2U_{a24} + 3U_{a25} + U_{a34} + 2U_{a35} + U_{a45} \\
E(MJT_{RCBD}) &= E(U_{a12}) + 2E(U_{a13}) + 3E(U_{a14}) + 4E(U_{a15}) + E(U_{a23}) + 2E(U_{a24}) \\
&+ 3E(U_{a25}) + E(U_{a34}) + 2E(U_{a35}) + E(U_{a45}) \\
&= \frac{1}{2}n_1n_2 + 2\times\frac{1}{2}n_1n_3 + 3\times\frac{1}{2}n_1n_4 + 4\times\frac{1}{2}n_1n_5 + \frac{1}{2}n_2n_3 + 2\times\frac{1}{2}n_2n_4 \\
&+ 3\times\frac{1}{2}n_2n_5 + \frac{1}{2}n_3n_4 + 2\times\frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 \\
&= \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + 3\times\frac{1}{2}(1)(1) + 4\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) \\
&+ 3\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{RCBD}) &= \frac{20}{2} = 10
\end{aligned}
$$

$$
\begin{aligned}
Var(MJT_{RCBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + 9Var(U_{a14}) + 16Var(U_{a15}) + Var(U_{a23}) \\
&+ 4Var(U_{a24}) + 9Var(U_{a25}) + Var(U_{a34}) + 4Var(U_{a35}) + Var(U_{a45}) \\
&+ 4Cov(U_{a12}, U_{a13}) + 6Cov(U_{a12}, U_{a14}) + 8Cov(U_{a12}, U_{a15}) + 2Cov(U_{a12}, U_{a23}) \\
&+ 4Cov(U_{a12}, U_{a24}) + 6Cov(U_{a12}, U_{a25}) + 2Cov(U_{a12}, U_{a34}) + 4Cov(U_{a12}, U_{a35}) \\
&+ 2Cov(U_{a12}, U_{a45}) + 12Cov(U_{a13}, U_{a14}) + 16Cov(U_{a13}, U_{a15}) + 4Cov(U_{a13}, U_{a23}) \\
&+ 8Cov(U_{a13}, U_{a24}) + 12Cov(U_{a13}, U_{a25}) + 4Cov(U_{a13}, U_{a34}) + 8Cov(U_{a13}, U_{a35}) \\
&+ 4Cov(U_{a13}, U_{a45}) + 24Cov(U_{a14}, U_{a15}) + 6Cov(U_{a14}, U_{a23}) + 12Cov(U_{a14}, U_{a24}) \\
&+ 18Cov(U_{a14}, U_{a25}) + 6Cov(U_{a14}, U_{a34}) + 12Cov(U_{a14}, U_{a35}) + 6Cov(U_{a14}, U_{a45}) \\
&+ 8Cov(U_{a15}, U_{a23}) + 16Cov(U_{a15}, U_{a24}) + 24Cov(U_{a15}, U_{a25}) + 8Cov(U_{a15}, U_{a34}) \\
&+ 16Cov(U_{a15}, U_{a35}) + 8Cov(U_{a15}, U_{a45}) + 4Cov(U_{a23}, U_{a24}) + 6Cov(U_{a23}, U_{a25}) \\
&+ 2Cov(U_{a23}, U_{a34}) + 4Cov(U_{a23}, U_{a35}) + 2Cov(U_{a23}, U_{a45}) + 12Cov(U_{a24}, U_{a25}) \\
&+ 4Cov(U_{a24}, U_{a34}) + 8Cov(U_{a24}, U_{a35}) + 4Cov(U_{a24}, U_{a45}) + 6Cov(U_{a25}, U_{a34}) \\
&+ 12Cov(U_{a25}, U_{a35}) + 6Cov(U_{a25}, U_{a45}) + 4Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) \\
&+ 4Cov(U_{a35}, U_{a45}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 4\times\frac{1}{12}n_1n_3(n_1+n_3+1) + 9\times\frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ 16\times\frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_2n_3(n_2+n_3+1) + 4\times\frac{1}{12}n_2n_4(n_2+n_4+1) \\
&+ 9\times\frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) + 4\times\frac{1}{12}n_3n_5(n_3+n_5+1) \\
&+ \frac{1}{12}n_4n_5(n_4+n_5+1) + 4\times\frac{1}{12}n_1n_2n_3 + 6\times\frac{1}{12}n_1n_2n_4 + 8\times\frac{1}{12}n_1n_2n_5 \\
&- 2\times\frac{1}{12}n_1n_2n_3 - 4\times\frac{1}{12}n_1n_2n_4 - 6\times\frac{1}{12}n_1n_2n_5 + 2\times 0 + 4\times 0 + 2\times 0 \\
&+ 12\times\frac{1}{12}n_1n_3n_4 + 16\times\frac{1}{12}n_1n_3n_5 + 4\times\frac{1}{12}n_1n_2n_3 + 8\times 0 + 12\times 0 \\
&- 4\times\frac{1}{12}n_1n_3n_4 - 8\times\frac{1}{12}n_1n_3n_5 + 4\times 0 + 24\times\frac{1}{12}n_1n_4n_5 + 6\times 0 \\
&+ 12\times\frac{1}{12}n_1n_2n_4 + 18\times 0 + 6\times\frac{1}{12}n_1n_3n_4 + 12\times 0 - 6\times\frac{1}{12}n_1n_4n_5 + 8\times 0 \\
&+ 16\times 0 + 24\times\frac{1}{12}n_1n_2n_5 + 8\times 0 + 16\times\frac{1}{12}n_1n_3n_5 + 8\times\frac{1}{12}n_1n_4n_5 \\
&+ 4\times\frac{1}{12}n_2n_3n_4 + 6\times\frac{1}{12}n_2n_3n_5 - 2\times\frac{1}{12}n_2n_3n_4 - 4\times\frac{1}{12}n_2n_3n_5 + 2\times 0 \\
&+ 12\times\frac{1}{12}n_2n_4n_5 + 4\times\frac{1}{12}n_2n_3n_4 + 8\times 0 - 4\times\frac{1}{12}n_2n_4n_5 + 6\times 0 \\
&+ 12\times\frac{1}{12}n_2n_3n_5 + 6\times\frac{1}{12}n_2n_4n_5 + 4\times\frac{1}{12}n_3n_4n_5 - 2\times\frac{1}{12}n_3n_4n_5 \\
&+ 4\times\frac{1}{12}n_3n_4n_5
\end{aligned}
$$

We can simplify above equation by first adding coefficients of the first 10 terms and multiplying it by 3 divided by 12 since the sample size is 1 for each treatment and adding the results to the sum of the rest of coefficient of the non zero covariance divided by 12. That is

$$
\begin{aligned}
n_1 = n_2 = n_3 = n_4 = n_5 = n = 1 \\
Var(MJT_{RCBD}) &= 50 \times \frac{1}{12} n \cdot n(n+n+1) + 150 \times \frac{1}{12} n \cdot n \cdot n \\
Var(MJT_{RCBD}) &= 50 \times \frac{1}{12}(1)(1)(1+1+1) + 150 \times \frac{1}{12}(1)(1)(1) \\
Var(MJT_{RCBD}) &= 50 \times \frac{3}{12} + 150 \times \frac{1}{12} = 25
\end{aligned}
$$

Five treatments - SJT RCBD

$$
\begin{aligned}
SJT_{RCBD} &= U_{a12} + 4U_{a13} + 9U_{a14} + 16U_{a15} + U_{a23} + 4U_{a24} + 9U_{a25} + U_{a34} + 4U_{a35} + U_{a45} \\
E(SJT_{RCBD}) &= E(U_{a12}) + 4E(U_{a13}) + 9E(U_{a14}) + 16E(U_{a15}) + E(U_{a23}) + 4E(U_{a24}) \\
&+ 9E(U_{a25}) + E(U_{a34}) + 4E(U_{a35}) + E(U_{a45}) \\
&= \frac{1}{2}n_1n_2 + 4 \times \frac{1}{2}n_1n_3 + 9 \times \frac{1}{2}n_1n_4 + 16 \times \frac{1}{2}n_1n_5 + \frac{1}{2}n_2n_3 + 4 \times \frac{1}{2}n_2n_4 \\
&+ 9 \times \frac{1}{2}n_2n_5 + \frac{1}{2}n_3n_4 + 4 \times \frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 \\
&= (1+4+9+16+1+4+9+1+4+1) \times \frac{1}{2}(1)(1) \\
E(SJT_{RCBD}) &= \frac{50}{2} = 25 \\
Var(SJT_{RCBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + 81Var(U_{a14}) + 256Var(U_{a15}) + Var(U_{a23}) \\
&+ 16Var(U_{a24}) + 81Var(U_{a25}) + Var(U_{a34}) + 16Var(U_{a35}) + Var(U_{a45}) \\
&+ 8Cov(U_{a12}, U_{a13}) + 18Cov(U_{a12}, U_{a14}) + 32Cov(U_{a12}, U_{a15}) \\
&+ 2Cov(U_{a12}, U_{a23}) + 8Cov(U_{a12}, U_{a24}) + 18Cov(U_{a12}, U_{a25}) \\
&+ 2Cov(U_{a12}, U_{a34}) + 8Cov(U_{a12}, U_{a35}) + 2Cov(U_{a12}, U_{a45}) \\
&+ 72Cov(U_{a13}, U_{a14}) + 128Cov(U_{a13}, U_{a15}) + 8Cov(U_{a13}, U_{a23}) \\
&+ 32Cov(U_{a13}, U_{a24}) + 72Cov(U_{a13}, U_{a25}) + 8Cov(U_{a13}, U_{a34}) \\
&+ 32Cov(U_{a13}, U_{a35}) + 8Cov(U_{a13}, U_{a45}) + 288Cov(U_{a14}, U_{a15}) \\
&+ 18Cov(U_{a14}, U_{a23}) + 72Cov(U_{a14}, U_{a24}) + 162Cov(U_{a14}, U_{a25}) \\
&+ 18Cov(U_{a14}, U_{a34}) + 72Cov(U_{a14}, U_{a35}) + 18Cov(U_{a14}, U_{a45}) \\
&+ 32Cov(U_{a15}, U_{a23}) + 128Cov(U_{a15}, U_{a24}) + 288Cov(U_{a15}, U_{a25}) \\
&+ 32Cov(U_{a15}, U_{a34}) + 128Cov(U_{a15}, U_{a35}) + 32Cov(U_{a15}, U_{a45}) \\
&+ 8Cov(U_{a23}, U_{a24}) + 18Cov(U_{a23}, U_{a25}) + 2Cov(U_{a23}, U_{a34}) \\
&+ 8Cov(U_{a23}, U_{a35}) + 2Cov(U_{a23}, U_{a45}) + 72Cov(U_{a24}, U_{a25}) \\
&+ 8Cov(U_{a24}, U_{a34}) + 32Cov(U_{a24}, U_{a35}) + 8Cov(U_{a24}, U_{a45}) \\
&+ 18Cov(U_{a25}, U_{a34}) + 72Cov(U_{a25}, U_{a35}) + 18Cov(U_{a25}, U_{a45}) \\
&+ 8Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 8Cov(U_{a35}, U_{a45})
\end{aligned}
$$

$$
\begin{aligned}
Var(SJT_{RCBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 16\times\frac{1}{12}n_1n_3(n_1+n_3+1) + 81\times\frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ 256\times\frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_2n_3(n_2+n_3+1) + 16\times\frac{1}{12}n_2n_4(n_2+n_4+1) \\
&+ 81\times\frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) + 16\times\frac{1}{12}n_3n_5(n_3+n_5+1) \\
&+ \frac{1}{12}n_4n_5(n_4+n_5+1) + 8\times\frac{1}{12}n_1n_2n_3 + 18\times\frac{1}{12}n_1n_2n_4 + 32\times\frac{1}{12}n_1n_2n_5 \\
&- 2\times\frac{1}{12}n_1n_2n_3 - 8\times\frac{1}{12}n_1n_2n_4 - 18\times\frac{1}{12}n_1n_2n_5 + 2\times 0 + 8\times 0 + 2\times 0 \\
&+ 72\times\frac{1}{12}n_1n_3n_4 + 128\times\frac{1}{12}n_1n_3n_5 + 8\times\frac{1}{12}n_1n_2n_3 + 32\times 0 + 72\times 0 \\
&- 8\times\frac{1}{12}n_1n_3n_4 - 32\times\frac{1}{12}n_1n_3n_5 + 8\times 0 + 288\times\frac{1}{12}n_1n_4n_5 + 18\times 0 \\
&+ 72\times\frac{1}{12}n_1n_2n_4 + 162\times 0 + 18\times\frac{1}{12}n_1n_3n_4 + 72\times 0 - 18\times\frac{1}{12}n_1n_4n_5 + 32\times 0 \\
&+ 128\times 0 + 288\times\frac{1}{12}n_1n_2n_5 + 32\times 0 + 128\times\frac{1}{12}n_1n_3n_5 + 32\times\frac{1}{12}n_1n_4n_5 \\
&+ 8\times\frac{1}{12}n_2n_3n_4 + 18\times\frac{1}{12}n_2n_3n_5 - 2\times\frac{1}{12}n_2n_3n_4 - 8\times\frac{1}{12}n_2n_3n_5 + 2\times 0 \\
&+ 72\times\frac{1}{12}n_2n_4n_5 + 8\times\frac{1}{12}n_2n_3n_4 + 32\times 0 - 8\times\frac{1}{12}n_2n_4n_5 + 18\times 0 \\
&+ 72\times\frac{1}{12}n_2n_3n_5 + 18\times\frac{1}{12}n_2n_4n_5 + 8\times\frac{1}{12}n_3n_4n_5 - 2\times\frac{1}{12}n_3n_4n_5 \\
&+ 8\times\frac{1}{12}n_3n_4n_5
\end{aligned}
$$

Let say, $n_1 = n_2 = n_3 = n_4 = n_5 = n = 1$

$$
\begin{aligned}
Var(SJT_{RCBD}) &= 470\times\frac{1}{12}n\cdot n(n+n+1) + 1198\times\frac{1}{12}n\cdot n \\
Var(SJT_{RCBD}) &= 470\times\frac{1}{12}(1)(1)(1+1+1) + 1198\times\frac{1}{12}(1)(1) \\
Var(SJT_{RCBD}) &= \frac{2608}{12} \approx 217.3333
\end{aligned}
$$

Five treatments 1 missing - JT BIBD

When treatment 1 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a23} + U_{a24} + U_{a25} + U_{a34} + U_{a35} + U_{a45} \\
E(JT_{BIBD}) &= E(U_{a23}) + E(U_{a24}) + E(U_{a25}) + E(U_{a34}) + E(U_{a35}) + E(U_{a45}) \\
&= \frac{1}{2}n_2n_3 + \frac{1}{2}n_2n_4 + \frac{1}{2}n_2n_5 + \frac{1}{2}n_3n_4 + \frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 \\
&= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{6}{2} = 3
\end{aligned}
$$

$$
\begin{aligned}
Var(JT_{BIBD}) &= Var(U_{a23}) + Var(U_{a24}) + Var(U_{a25}) + Var(U_{a34}) + Var(U_{a35}) + Var(U_{a45}) \\
&+ 2Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a25}) + 2Cov(U_{a23}, U_{a34}) \\
&+ 2Cov(U_{a23}, U_{a35}) + 2Cov(U_{a23}, U_{a45}) + 2Cov(U_{a24}, U_{a25}) + 2Cov(U_{a24}, U_{a34}) \\
&+ 2Cov(U_{a24}, U_{a35}) + 2Cov(U_{a24}, U_{a45}) + 2Cov(U_{a25}, U_{a34}) + 2Cov(U_{a25}, U_{a35}) \\
&+ 2Cov(U_{a25}, U_{a45}) + 2Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 2Cov(U_{a35}, U_{a45}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_2n_5(n_2 + n_5 + 1) \\
&+ \frac{1}{12}n_3n_4(n_3 + n_4 + 1) + \frac{1}{12}n_3n_5(n_3 + n_5 + 1) + \frac{1}{12}n_4n_5(n_4 + n_5 + 1) \\
&+ 2 \times \frac{1}{12}n_2n_3n_4 + 2 \times \frac{1}{12}n_2n_3n_5 - 2 \times \frac{1}{12}n_2n_3n_4 \\
&- 2 \times \frac{1}{12}n_2n_3n_5 + 2 \times 0 + 2 \times \frac{1}{12}n_2n_4n_5 + 2 \times \frac{1}{12}n_2n_3n_4 + 2 \times 0 \\
&- 2 \times \frac{1}{12}n_2n_4n_5 + 2 \times 0 + 2 \times \frac{1}{12}n_2n_3n_5 + 2 \times \frac{1}{12}n_2n_4n_5 + 2 \times \frac{1}{12}n_3n_4n_5 \\
&- 2 \times \frac{1}{12}n_3n_4n_5 + 2 \times \frac{1}{12}n_3n_4n_5 \\
Var(JT_{BIBD}) &= 6 \times \frac{3}{12} + 8 \times \frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{26}{12} \approx 2.1667
\end{aligned}
$$

When treatment 2 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a13} + U_{a14} + U_{a15} + U_{a34} + U_{a35} + U_{a45} \\
E(JT_{BIBD}) &= E(U_{a13}) + E(U_{a14}) + E(U_{a15}) + E(U_{a34}) + E(U_{a35}) + E(U_{a45}) \\
&= \frac{1}{2}n_1n_3 + \frac{1}{2}n_1n_4 + \frac{1}{2}n_1n_5 + +\frac{1}{2}n_3n_4 + \frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 \\
&= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{6}{2} = 3 \\
Var(JT_{BIBD}) &= Var(U_{a13}) + Var(U_{a14}) + Var(U_{a15}) + Var(U_{a34}) + Var(U_{a35}) + Var(U_{a45}) \\
&+ 2Cov(U_{a13}, U_{a14}) + 2Cov(U_{a13}, U_{a15}) + 2Cov(U_{a13}, U_{a34}) + 2Cov(U_{a13}, U_{a35}) \\
&+ 2Cov(U_{a13}, U_{a45}) + 2Cov(U_{a14}, U_{a15}) + 2Cov(U_{a14}, U_{a34}) + 2Cov(U_{a14}, U_{a35}) \\
&+ 2Cov(U_{a14}, U_{a45}) + 2Cov(U_{a15}, U_{a34}) + 2Cov(U_{a15}, U_{a35}) + 2Cov(U_{a15}, U_{a45}) \\
&+ 2Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 2Cov(U_{a35}, U_{a45}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_1n_5(n_1 + n_5 + 1) \\
&+ \frac{1}{12}n_3n_4(n_3 + n_4 + 1) + \frac{1}{12}n_3n_5(n_3 + n_5 + 1) + \frac{1}{12}n_4n_5(n_4 + n_5 + 1) \\
&+ 2 \times \frac{1}{12}n_1n_3n_4 + 2 \times \frac{1}{12}n_1n_3n_5 - 2 \times \frac{1}{12}n_1n_3n_4 \\
&- 2 \times \frac{1}{12}n_1n_3n_5 + 2 \times 0 + 2 \times \frac{1}{12}n_1n_4n_5 + 2 \times \frac{1}{12}n_1n_3n_4 + 2 \times 0 \\
&- 2 \times \frac{1}{12}n_1n_4n_5 + 2 \times 0 + 2 \times \frac{1}{12}n_1n_3n_5 + 2 \times \frac{1}{12}n_1n_4n_5 + 2 \times \frac{1}{12}n_3n_4n_5 \\
&- 2 \times \frac{1}{12}n_3n_4n_5 + 2 \times \frac{1}{12}n_3n_4n_5
\end{aligned}
$$

$$Var(JT_{BIBD}) = 6 \times \frac{3}{12} + 8 \times \frac{1}{12}$$
$$Var(JT_{BIBD}) = \frac{26}{12} \approx 2.1667$$

When treatment 3 is missing.

$$\begin{aligned}
JT_{BIBD} &= U_{a12} + U_{a14} + U_{a15} + U_{a24} + U_{a25} + U_{a45} \\
E(JT_{BIBD}) &= E(U_{a12}) + E(U_{a14}) + E(U_{a15}) + E(U_{a24}) + E(U_{a25}) + E(U_{a45}) \\
&= \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_4 + \frac{1}{2}n_1n_5 + \frac{1}{2}n_2n_4 + \frac{1}{2}n_2n_5 + \frac{1}{2}n_4n_5 \\
&= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1 + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{6}{2} = 3 \\
Var(JT_{BIBD}) &= Var(U_{a12}) + Var(U_{a14}) + Var(U_{a15}) + Var(U_{a24}) + Var(U_{a25}) + Var(U_{a45}) \\
&+ 2Cov(U_{a12}, U_{a14}) + 2Cov(U_{a12}, U_{a15}) + 2Cov(U_{a12}, U_{a24}) + 2Cov(U_{a12}, U_{a25}) \\
&+ 2Cov(U_{a12}, U_{a45}) + 2Cov(U_{a14}, U_{a15}) + 2Cov(U_{a14}, U_{a24}) + 2Cov(U_{a14}, U_{a25}) \\
&+ 2Cov(U_{a14}, U_{a45}) + 2Cov(U_{a15}, U_{a24}) + 2Cov(U_{a15}, U_{a25}) + 2Cov(U_{a15}, U_{a45}) \\
&+ 2Cov(U_{a24}, U_{a25}) + 2Cov(U_{a24}, U_{a45}) + +2Cov(U_{a25}, U_{a45}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_1n_5(n_1 + n_5 + 1) \\
&+ \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_2n_5(n_2 + n_5 + 1) + \frac{1}{12}n_4n_5(n_4 + n_5 + 1) \\
&+ 2 \times \frac{1}{12}n_1n_2n_4 + 2 \times \frac{1}{12}n_1n_2n_5 - 2 \times \frac{1}{12}n_1n_2n_4 - 2 \times \frac{1}{12}n_1n_2n_5 \\
&+ 2 \times 0 + 2 \times \frac{1}{12}n_1n_4n_5 + 2 \times \frac{1}{12}n_1n_2n_4 + 2 \times 0 - 2 \times \frac{1}{12}n_1n_4n_5 + 2 \times 0 \\
&+ 2 \times \frac{1}{12}n_1n_2n_5 + 2 \times \frac{1}{12}n_1n_4n_5 + 2 \times \frac{1}{12}n_2n_4n_5 - 2 \times \frac{1}{12}n_2n_4n_5 + 2 \times \frac{1}{12}n_2n_4n_5 \\
Var(JT_{BIBD}) &= 6 \times \frac{3}{12} + 8 \times \frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{26}{12} \approx 2.1667
\end{aligned}$$

When treatment 4 is missing.

$$\begin{aligned}
JT_{BIBD} &= U_{a12} + U_{a13} + U_{a15} + U_{a23} + U_{a25} + U_{a35} \\
E(JT_{BIBD}) &= E(U_{a12}) + E(U_{a13}) + E(U_{a15}) + E(U_{a23}) + E(U_{a25}) + E(U_{a35}) \\
&= \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_3 + \frac{1}{2}n_1n_5 + \frac{1}{2}n_2n_3 + \frac{1}{2}n_2n_5 + \frac{1}{2}n_3n_5 \\
&= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{6}{2} = 3 \\
Var(JT_{BIBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{a15}) + Var(U_{a23}) + Var(U_{a25}) + Var(U_{a35}) \\
&+ 2Cov(U_{a12}, U_{a13}) + 2Cov(U_{a12}, U_{a15}) + 2Cov(U_{a12}, U_{a23}) + 2Cov(U_{a12}, U_{a25}) \\
&+ 2Cov(U_{a12}, U_{a35}) + 2Cov(U_{a13}, U_{a15}) + 2Cov(U_{a13}, U_{a23}) + 2Cov(U_{a13}, U_{a25}) \\
&+ 2Cov(U_{a13}, U_{a35}) + 2Cov(U_{a15}, U_{a23}) + 2Cov(U_{a15}, U_{a25}) + 2Cov(U_{a15}, U_{a35}) \\
&+ 2Cov(U_{a23}, U_{a25}) + 2Cov(U_{a23}, U_{a35}) + 2Cov(U_{a25}, U_{a35})
\end{aligned}$$

$$
\begin{aligned}
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + \frac{1}{12}n_1n_3(n_1+n_3+1) + \frac{1}{12}n_1n_5(n_1+n_5+1) \\
&+ \frac{1}{12}n_2n_3(n_2+n_3+1) + \frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_3n_5(n_3+n_5+1) \\
&+ 2\times\frac{1}{12}n_1n_2n_3 + 2\times\frac{1}{12}n_1n_2n_5 - 2\times\frac{1}{12}n_1n_2n_3 - 2\times\frac{1}{12}n_1n_2n_5 + 2\times 0 \\
&+ 2\times\frac{1}{12}n_1n_3n_5 + 2\times\frac{1}{12}n_1n_2n_3 + 2\times 0 - 2\times\frac{1}{12}n_1n_3n_5 + 2\times 0 \\
&+ 2\times\frac{1}{12}n_1n_2n_5 + 2\times\frac{1}{12}n_1n_3n_5 + 2\times\frac{1}{12}n_2n_3n_5 - 2\times\frac{1}{12}n_2n_3n_5 \\
&+ 2\times\frac{1}{12}n_2n_3n_5 \\
Var(JT_{BIBD}) &= 6\times\frac{3}{12} + 8\times\frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{26}{12} \approx 2.1667
\end{aligned}
$$

When treatment 5 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a12} + U_{a13} + U_{a14} + U_{a23} + U_{a24} + U_{a34} \\
E(JT_{BIBD}) &= E(U_{a12}) + E(U_{a13}) + E(U_{a14}) + E(U_{a23}) + E(U_{a24}) + E(U_{a34}) \\
&= \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_3 + \frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_3 + \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{6}{2} = 3 \\
Var(JT_{BIBD}) &= Var(U_{a12}) + Var(U_{a13}) + Var(U_{a14}) + Var(U_{a23}) + Var(U_{a24}) + Var(U_{a34}) \\
&+ 2Cov(U_{a12},U_{a13}) + 2Cov(U_{a12},U_{a14}) + 2Cov(U_{a12},U_{a23}) + 2Cov(U_{a12},U_{a24}) \\
&+ 2Cov(U_{a12},U_{a34}) + 2Cov(U_{a13},U_{a14}) + 2Cov(U_{a13},U_{a23}) + 2Cov(U_{a13},U_{a24}) \\
&+ 2Cov(U_{a13},U_{a34}) + 2Cov(U_{a14},U_{a23}) + 2Cov(U_{a14},U_{a24}) + 2Cov(U_{a14},U_{a34}) \\
&+ 2Cov(U_{a23},U_{a24}) + 2Cov(U_{a23},U_{a34}) + 2Cov(U_{a24},U_{a34}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + \frac{1}{12}n_1n_3(n_1+n_3+1) + \frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ \frac{1}{12}n_2n_3(n_2+n_3+1) + \frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) \\
&+ 2\times\frac{1}{12}n_1n_2n_3 + 2\times\frac{1}{12}n_1n_2n_4 - 2\times\frac{1}{12}n_1n_2n_3 - 2\times\frac{1}{12}n_1n_2n_4 + 2\times 0 \\
&+ 2\times\frac{1}{12}n_1n_3n_4 + 2\times\frac{1}{12}n_1n_2n_3 + 2\times 0 - 2\times\frac{1}{12}n_1n_3n_4 + 2\times 0 \\
&+ 2\times\frac{1}{12}n_1n_2n_4 + 2\times\frac{1}{12}n_1n_3n_4 + 2\times\frac{1}{12}n_2n_3n_4 - 2\times\frac{1}{12}n_2n_3n_4 \\
&+ 2\times\frac{1}{12}n_2n_3n_4 \\
Var(JT_{BIBD}) &= 6\times\frac{3}{12} + 8\times\frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{26}{12} \approx 2.1667
\end{aligned}
$$

Overall mean is:

$$E(JT_{BIBD}) = \frac{3+3+3+3+3}{5} = \frac{18}{5} = 3$$

Overall variance is:

$$Var(JT_{BIBD}) = \frac{26/12+26/12+26/12+26/12+26/12}{5} = \frac{26}{12} \approx 2.1667$$

Five treatments 1 missing - MJT BIBD

When treatment 1 is missing.

$$\begin{aligned}
MJT_{BIBD} &= U_{a23} + 2U_{a24} + 3U_{a25} + U_{a34} + 2U_{a35} + U_{a45} \\
E(MJT_{BIBD}) &= E(U_{a23}) + 2E(U_{a24}) + 3E(U_{a25}) + E(U_{a34}) + 2E(U_{a35}) + E(U_{a45}) \\
&= \frac{1}{2}n_2n_3 + 2\times\frac{1}{2}n_2n_4 + 3\times\frac{1}{2}n_2n_5 + \frac{1}{2}n_3n_4 + 2\times\frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 \\
&= \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + 3\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{BIBD}) &= \frac{10}{2} = 5 \\
Var(MJT_{BIBD}) &= Var(U_{a23}) + 4Var(U_{a24}) + 9Var(U_{a25}) + Var(U_{a34}) + 4Var(U_{a35}) \\
&+ Var(U_{a45}) + 4Cov(U_{a23}, U_{a24}) + 6Cov(U_{a23}, U_{a25}) + 2Cov(U_{a23}, U_{a34}) \\
&+ 4Cov(U_{a23}, U_{a35}) + 2Cov(U_{a23}, U_{a45}) + 12Cov(U_{a24}, U_{a25}) + 4Cov(U_{a24}, U_{a34}) \\
&+ 8Cov(U_{a24}, U_{a35}) + 4Cov(U_{a24}, U_{a45}) + 6Cov(U_{a25}, U_{a34}) + 12Cov(U_{a25}, U_{a35}) \\
&+ 6Cov(U_{a25}, U_{a45}) + 4Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 4Cov(U_{a35}, U_{a45}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_2n_3(n_2+n_3+1) + 4\times\frac{1}{12}n_2n_4(n_2+n_4+1) + 9\times\frac{1}{12}n_2n_5(n_2+n_5+1) \\
&+ \frac{1}{12}n_3n_4(n_3+n_4+1) + 4\times\frac{1}{12}n_3n_5(n_3+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1) \\
&+ 4\times\frac{1}{12}n_2n_3n_4 + 6\times\frac{1}{12}n_2n_3n_5 - 2\times\frac{1}{12}n_2n_3n_4 - 4\times\frac{1}{12}n_2n_3n_5 + 2\times 0 \\
&+ 12\times\frac{1}{12}n_2n_4n_5 + 4\times\frac{1}{12}n_2n_3n_4 + 8\times 0 - 4\times\frac{1}{12}n_2n_4n_5 + 6\times 0 \\
&+ 12\times\frac{1}{12}n_2n_3n_5 + 6\times\frac{1}{12}n_2n_4n_5 + 4\times\frac{1}{12}n_3n_4n_5 - 2\times\frac{1}{12}n_3n_4n_5 \\
&+ 4\times\frac{1}{12}n_3n_4n_5 \\
Var(MJT_{RCBD}) &= 20\times\frac{3}{12} + 40\times\frac{1}{12} \\
Var(MJT_{RCBD}) &= \frac{100}{12} \approx 8.3333
\end{aligned}$$

When treatment 2 is missing.

$$\begin{aligned}
MJT_{BIBD} &= 2U_{a13} + 3U_{a14} + 4U_{a15} + U_{a34} + 2U_{a35} + U_{a45} \\
E(MJT_{BIBD}) &= 2E(U_{a13}) + 3E(U_{a14}) + 4E(U_{a15}) + +E(U_{a34}) + 2E(U_{a35}) + E(U_{a45}) \\
&= 2\times\frac{1}{2}n_1n_3 + 3\times\frac{1}{2}n_1n_4 + 4\times\frac{1}{2}n_1n_5 + \frac{1}{2}n_3n_4 + 2\times\frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 \\
&= 2\times\frac{1}{2}(1)(1) + 3\times\frac{1}{2}(1)(1) + 4\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1)
\end{aligned}$$

$$
\begin{aligned}
E(MJT_{BIBD}) &= \frac{13}{2} = 6.5 \\
Var(MJT_{BIBD}) &= 4Var(U_{a13}) + 9Var(U_{a14}) + 16Var(U_{a15}) + Var(U_{a34}) + 4Var(U_{a35}) \\
&+ Var(U_{a45}) + 12Cov(U_{a13}, U_{a14}) + 16Cov(U_{a13}, U_{a15}) + 4Cov(U_{a13}, U_{a34}) \\
&+ 8Cov(U_{a13}, U_{a35}) + 4Cov(U_{a13}, U_{a45}) + 24Cov(U_{a14}, U_{a15}) + 6Cov(U_{a14}, U_{a34}) \\
&+ 12Cov(U_{a14}, U_{a35}) + 6Cov(U_{a14}, U_{a45}) + 8Cov(U_{a15}, U_{a34}) + 16Cov(U_{a15}, U_{a35}) \\
&+ 8Cov(U_{a15}, U_{a45}) + 4Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 4Cov(U_{a35}, U_{a45}) \\
Var(MJT_{BIBD}) &= 4 \times \frac{1}{12} n_1 n_3 (n_1 + n_3 + 1) + 9 \times \frac{1}{12} n_1 n_4 (n_1 + n_4 + 1) \\
&+ 16 \times \frac{1}{12} n_1 n_5 (n_1 + n_5 + 1) + \frac{1}{12} n_3 n_4 (n_3 + n_4 + 1) \\
&+ 4 \times \frac{1}{12} n_3 n_5 (n_3 + n_5 + 1) + \frac{1}{12} n_4 n_5 (n_4 + n_5 + 1) \\
&+ 12 \times \frac{1}{12} n_1 n_3 n_4 + 16 \times \frac{1}{12} n_1 n_3 n_5 - 4 \times \frac{1}{12} n_1 n_3 n_4 - 8 \times \frac{1}{12} n_1 n_3 n_5 + 4 \times 0 \\
&+ 24 \times \frac{1}{12} n_1 n_4 n_5 + 6 \times \frac{1}{12} n_1 n_3 n_4 + 12 \times 0 - 6 \times \frac{1}{12} n_1 n_4 n_5 + 8 \times 0 \\
&+ 16 \times \frac{1}{12} n_1 n_3 n_5 + 8 \times \frac{1}{12} n_1 n_4 n_5 + 4 \times \frac{1}{12} n_3 n_4 n_5 - 2 \times \frac{1}{12} n_3 n_4 n_5 \\
&+ 4 \times \frac{1}{12} n_3 n_4 n_5 \\
Var(MJT_{BIBD}) &= 35 \times \frac{3}{12} + 70 \times \frac{1}{12} \\
Var(MJT_{BIBD}) &= \frac{175}{12} \approx 14.5833
\end{aligned}
$$

When treatment 3 is missing.

$$
\begin{aligned}
MJT_{BIBD} &= U_{a12} + 3U_{a14} + 4U_{a15} + 2U_{a24} + 3U_{a25} + U_{a45} \\
E(MJT_{BIBD}) &= E(U_{a12}) + 3E(U_{a14}) + 4E(U_{a15}) + 2E(U_{a24}) + 3E(U_{a25}) + E(U_{a45}) \\
&= \frac{1}{2} n_1 n_2 + 3 \times \frac{1}{2} n_1 n_4 + 4 \times \frac{1}{2} n_1 n_5 + 2 \times \frac{1}{2} n_2 n_4 + 3 \times \frac{1}{2} n_2 n_5 + \frac{1}{2} n_4 n_5 \\
&= \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{BIBD}) &= \frac{14}{2} = 7 \\
Var(MJT_{BIBD}) &= Var(U_{a12}) + 9Var(U_{a14}) + 16Var(U_{a15}) + 4Var(U_{a24}) + 9Var(U_{a25}) \\
&+ Var(U_{a45}) + 6Cov(U_{a12}, U_{a14}) + 8Cov(U_{a12}, U_{a15}) + 4Cov(U_{a12}, U_{a24}) \\
&+ 6Cov(U_{a12}, U_{a25}) + 2Cov(U_{a12}, U_{a45}) + 24Cov(U_{a14}, U_{a15}) \\
&+ 12Cov(U_{a14}, U_{a24}) + 18Cov(U_{a14}, U_{a25}) + 6Cov(U_{a14}, U_{a45}) \\
&+ 16Cov(U_{a15}, U_{a24}) + 24Cov(U_{a15}, U_{a25} + 8Cov(U_{a15}, U_{a45}) \\
&+ 12Cov(U_{a24}, U_{a25}) + 4Cov(U_{a24}, U_{a45}) + 6Cov(U_{a25}, U_{a45})
\end{aligned}
$$

$$
\begin{aligned}
Var(MJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 9\times\frac{1}{12}n_1n_4(n_1+n_4+1) \\
&+ 16\times\frac{1}{12}n_1n_5(n_1+n_5+1) + 4\times\frac{1}{12}n_2n_4(n_2+n_4+1) \\
&+ 9\times\frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1) \\
&+ 6\times\frac{1}{12}n_1n_2n_4 + 8\times\frac{1}{12}n_1n_2n_5 - 4\times\frac{1}{12}n_1n_2n_4 - 6\times\frac{1}{12}n_1n_2n_5 + 2\times 0 \\
&+ 24\times\frac{1}{12}n_1n_4n_5 + 12\times\frac{1}{12}n_1n_2n_4 + 18\times 0 - 6\times\frac{1}{12}n_1n_4n_5 + 16\times 0 \\
&+ 24\times\frac{1}{12}n_1n_2n_5 + 8\times\frac{1}{12}n_1n_4n_5 + 12\times\frac{1}{12}n_2n_4n_5 - 4\times\frac{1}{12}n_2n_4n_5 \\
&+ 6\times\frac{1}{12}n_2n_4n_5 \\
Var(MJT_{BIBD}) &= 40\times\frac{3}{12} + 80\times\frac{1}{12} \\
Var(MJT_{BIBD}) &= \frac{200}{12} \approx 16.6667
\end{aligned}
$$

When treatment 4 is missing.

$$
\begin{aligned}
MJT_{BIBD} &= U_{a12} + 2U_{a13} + 4U_{a15} + U_{a23} + 3U_{a25} + 2U_{a35} \\
E(MJT_{BIBD}) &= E(U_{a12}) + 2E(U_{a13}) + 4E(U_{a15}) + E(U_{a23}) + 3E(U_{a25}) + 2E(U_{a35}) \\
&= \frac{1}{2}n_1n_2 + 2\times\frac{1}{2}n_1n_3 + 4\times\frac{1}{2}n_1n_5 + \frac{1}{2}n_2n_3 + 3\times\frac{1}{2}n_2n_5 + 2\times\frac{1}{2}n_3n_5 \\
&= \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + 4\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 3\times\frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) \\
E(MJT_{BIBD}) &= \frac{13}{2} = 6.5 \\
Var(MJT_{BIBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + 16Var(U_{a15}) + Var(U_{a23}) + 9Var(U_{a25}) \\
&+ 4Var(U_{a35}) + 4Cov(U_{a12},U_{a13}) + 8Cov(U_{a12},U_{a15}) + 2Cov(U_{a12},U_{a23}) \\
&+ 6Cov(U_{a12},U_{a25}) + 4Cov(U_{a12},U_{a35}) + 16Cov(U_{a13},U_{a15}) \\
&+ 4Cov(U_{a13},U_{a23}) + 12Cov(U_{a13},U_{a25}) + 8Cov(U_{a13},U_{a35}) \\
&+ 8Cov(U_{a15},U_{a23}) + 24Cov(U_{a15},U_{a25}) + 16Cov(U_{a15},U_{a35}) \\
&+ 6Cov(U_{a23},U_{a25}) + 4Cov(U_{a23},U_{a35}) + 12Cov(U_{a25},U_{a35}) \\
Var(MJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 4\times\frac{1}{12}n_1n_3(n_1+n_3+1) \\
&+ 16\times\frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_2n_3(n_2+n_3+1) \\
&+ 9\times\frac{1}{12}n_2n_5(n_2+n_5+1) + 4\times\frac{1}{12}n_3n_5(n_3+n_5+1) \\
&+ 4\times\frac{1}{12}n_1n_2n_3 + 8\times\frac{1}{12}n_1n_2n_5 - 2\times\frac{1}{12}n_1n_2n_3 - 6\times\frac{1}{12}n_1n_2n_5 + 4\times 0+ \\
&+ 16\times\frac{1}{12}n_1n_3n_5 + 4\times\frac{1}{12}n_1n_2n_3 + 12\times 0 - 8\times\frac{1}{12}n_1n_3n_5 + 8\times 0 \\
&+ 24\times\frac{1}{12}n_1n_2n_5 + 16\times\frac{1}{12}n_1n_3n_5 + 6\times\frac{1}{12}n_2n_3n_5 - 4\times\frac{1}{12}n_2n_3n_5 \\
&+ 12\times\frac{1}{12}n_2n_3n_5
\end{aligned}
$$

$$Var(MJT_{BIBD}) = 35 \times \frac{3}{12} + 70 \times \frac{1}{12}$$
$$Var(MJT_{BIBD}) = \frac{175}{12} \approx 14.5833$$

When treatment 5 is missing.

$$\begin{aligned}
MJT_{BIBD} &= U_{a12} + 2U_{a13} + 3U_{a14} + U_{a23} + 2U_{a24} + U_{a34} \\
E(MJT_{BIBD}) &= E(U_{a12}) + 2E(U_{a13}) + 3E(U_{a14}) + E(U_{a23}) + 2E(U_{a24}) + E(U_{a34}) \\
&= \frac{1}{2}n_1n_2 + 2 \times \frac{1}{2}n_1n_3 + 3 \times \frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_3 + 2 \times \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{BIBD}) &= \frac{10}{2} = 5 \\
Var(MJT_{BIBD}) &= Var(U_{a12}) + 4Var(U_{a13}) + 9Var(U_{a14}) + Var(U_{a23}) + 4Var(U_{a24}) \\
&+ Var(U_{a34}) + 4Cov(U_{a12}, U_{a13}) + 6Cov(U_{a12}, U_{a14}) + 2Cov(U_{a12}, U_{a23}) \\
&+ 4Cov(U_{a12}, U_{a24}) + 2Cov(U_{a12}, U_{a34}) + 12Cov(U_{a13}, U_{a14}) \\
&+ 4Cov(U_{a13}, U_{a23}) + 8Cov(U_{a13}, U_{a24}) + 4Cov(U_{a13}, U_{a34}) \\
&+ 6Cov(U_{a14}, U_{a23}) + 12Cov(U_{a14}, U_{a24}) + 6Cov(U_{a14}, U_{a34}) \\
&+ 4Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) + 4Cov(U_{a24}, U_{a34}) \\
Var(MJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + 9 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) \\
&+ \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + 4 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&+ 4 \times \frac{1}{12}n_1n_2n_3 + 6 \times \frac{1}{12}n_1n_2n_4 - 2 \times \frac{1}{12}n_1n_2n_3 - 4 \times \frac{1}{12}n_1n_2n_4 + 2 \times 0 \\
&+ 12 \times \frac{1}{12}n_1n_3n_4 + 4 \times \frac{1}{12}n_1n_2n_3 + 8 \times 0 - 4 \times \frac{1}{12}n_1n_3n_4 + 6 \times 0 \\
&+ 12 \times \frac{1}{12}n_1n_2n_4 + 6 \times \frac{1}{12}n_1n_3n_4 + 4 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 \\
&+ 4 \times \frac{1}{12}n_2n_3n_4 \\
Var(MJT_{BIBD}) &= 20 \times \frac{3}{12} + 40 \times \frac{1}{12} \\
Var(MJT_{BIBD}) &= \frac{100}{12} \approx 8.3333
\end{aligned}$$

Overall mean is:

$$E(MJT_{BIBD}) = \frac{5 + 6.5 + 7 + 6.5 + 5}{5} = \frac{30}{5} = 6$$

Overall variance is:

$$Var(MJT_{BIBD}) = \frac{100/12 + 175/12 + 200/12 + 175/12 + 100/12}{5} = 12.5$$

Five treatments 1 missing - SJT BIBD

$$\begin{aligned}
&\text{When treatment 1 is missing.}\\
SJT_{BIBD} &= U_{a23} + 4U_{a24} + 9U_{a25} + U_{a34} + 4U_{a35} + U_{a45}\\
E(SJT_{BIBD}) &= E(U_{a23}) + 4E(U_{a24}) + 9E(U_{a25}) + E(U_{a34}) + 4E(U_{a35}) + E(U_{a45})\\
&= \frac{1}{2}n_2n_3 + 4\times\frac{1}{2}n_2n_4 + 9\times\frac{1}{2}n_2n_5 + \frac{1}{2}n_3n_4 + 4\times\frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5\\
&= (1+4+9+1+4+1)\times\frac{1}{2}(1)(1)\\
E(SJT_{BIBD}) &= \frac{20}{2} = 10\\
Var(SJT_{BIBD}) &= Var(U_{a23}) + 16Var(U_{a24}) + 81Var(U_{a25}) + Var(U_{a34}) + 16Var(U_{a35})\\
&+ Var(U_{a45}) + 8Cov(U_{a23}, U_{a24}) + 18Cov(U_{a23}, U_{a25}) + 2Cov(U_{a23}, U_{a34})\\
&+ 8Cov(U_{a23}, U_{a35}) + 2Cov(U_{a23}, U_{a45}) + 72Cov(U_{a24}, U_{a25})\\
&+ 8Cov(U_{a24}, U_{a34}) + 32Cov(U_{a24}, U_{a35}) + 8Cov(U_{a24}, U_{a45})\\
&+ 18Cov(U_{a25}, U_{a34}) + 72Cov(U_{a25}, U_{a35}) + 18Cov(U_{a25}, U_{a45})\\
&+ 8Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 8Cov(U_{a35}, U_{a45})\\
Var(SJT_{BIBD}) &= \frac{1}{12}n_2n_3(n_2+n_3+1) + 16\times\frac{1}{12}n_2n_4(n_2+n_4+1) + 81\times\frac{1}{12}n_2n_5(n_2+n_5+1)\\
&+ \frac{1}{12}n_3n_4(n_3+n_4+1) + 16\times\frac{1}{12}n_3n_5(n_3+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1)\\
&+ 8\times\frac{1}{12}n_2n_3n_4 + 18\times\frac{1}{12}n_2n_3n_5 - 2\times\frac{1}{12}n_2n_3n_4 - 8\times\frac{1}{12}n_2n_3n_5 + 2\times 0\\
&+ 72\times\frac{1}{12}n_2n_4n_5 + 8\times\frac{1}{12}n_2n_3n_4 + 32\times 0 - 8\times\frac{1}{12}n_2n_4n_5 + 18\times 0\\
&+ 72\times\frac{1}{12}n_2n_3n_5 + 18\times\frac{1}{12}n_2n_4n_5 + 8\times\frac{1}{12}n_3n_4n_5 - 2\times\frac{1}{12}n_3n_4n_5\\
&+ 8\times\frac{1}{12}n_3n_4n_5\\
Var(SJT_{BIBD}) &= 116\times\frac{3}{12} + 192\times\frac{1}{12}\\
Var(SJT_{BIBD}) &= \frac{540}{12} = 45\\
&\text{When treatment 2 is missing.}\\
SJT_{BIBD} &= 4U_{a13} + 9U_{a14} + 16U_{a15} + U_{a34} + 4U_{a35} + U_{a45}\\
E(SJT_{BIBD}) &= 4E(U_{a13}) + 9E(U_{a14}) + 16E(U_{a15}) + E(U_{a34}) + 4E(U_{a35}) + E(U_{a45})\\
&= 4\times\frac{1}{2}n_1n_3 + 9\times\frac{1}{2}n_1n_4 + 16\times\frac{1}{2}n_1n_5 + \frac{1}{2}n_3n_4 + 4\times\frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5\\
&= (4+9+16+1+4+1)\times\frac{1}{2}(1)(1)\\
E(SJT_{BIBD}) &= \frac{35}{2} = 17.5
\end{aligned}$$

$$
\begin{aligned}
Var(SJT_{BIBD}) &= 16Var(U_{a13}) + 81Var(U_{a14}) + 256Var(U_{a15}) + Var(U_{a34}) + 16Var(U_{a35}) \\
&+ Var(U_{a45}) + 72Cov(U_{a13}, U_{a14}) + 128Cov(U_{a13}, U_{a15}) + 8Cov(U_{a13}, U_{a34}) \\
&+ 32Cov(U_{a13}, U_{a35}) + 8Cov(U_{a13}, U_{a45}) + 288Cov(U_{a14}, U_{a15}) \\
&+ 18Cov(U_{a14}, U_{a34}) + 72Cov(U_{a14}, U_{a35}) + 18Cov(U_{a14}, U_{a45}) \\
&+ 32Cov(U_{a15}, U_{a34}) + 128Cov(U_{a15}, U_{a35}) + 32Cov(U_{a15}, U_{a45}) \\
&+ 8Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) + 8Cov(U_{a35}, U_{a45}) \\
Var(SJT_{BIBD}) &= 16 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + 81 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) \\
&+ 256 \times \frac{1}{12}n_1n_5(n_1 + n_5 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&+ 16 \times \frac{1}{12}n_3n_5(n_3 + n_5 + 1) + \frac{1}{12}n_4n_5(n_4 + n_5 + 1) \\
&+ 72 \times \frac{1}{12}n_1n_3n_4 + 128 \times \frac{1}{12}n_1n_3n_5 - 8 \times \frac{1}{12}n_1n_3n_4 - 32 \times \frac{1}{12}n_1n_3n_5 + 8 \times 0 \\
&+ 288 \times \frac{1}{12}n_1n_4n_5 + 18 \times \frac{1}{12}n_1n_3n_4 + 72 \times 0 - 18 \times \frac{1}{12}n_1n_4n_5 + 32 \times 0 \\
&+ 128 \times \frac{1}{12}n_1n_3n_5 + 32 \times \frac{1}{12}n_1n_4n_5 + 8 \times \frac{1}{12}n_3n_4n_5 - 2 \times \frac{1}{12}n_3n_4n_5 \\
&+ 8 \times \frac{1}{12}n_3n_4n_5 \\
Var(SJT_{BIBD}) &= 371 \times \frac{3}{12} + 622 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{1735}{12} \approx 144.5833
\end{aligned}
$$

When treatment 3 is missing.

$$
\begin{aligned}
SJT_{BIBD} &= U_{a12} + 9U_{a14} + 16U_{a15} + 4U_{a24} + 9U_{a25} + U_{a45} \\
E(SJT_{BIBD}) &= E(U_{a12}) + 9E(U_{a14}) + 16E(U_{a15}) + 4E(U_{a24}) + 9E(U_{a25}) + E(U_{a45}) \\
&= \frac{1}{2}n_1n_2 + 9 \times \frac{1}{2}n_1n_4 + 16 \times \frac{1}{2}n_1n_5 + 4 \times \frac{1}{2}n_2n_4 + 9 \times \frac{1}{2}n_2n_5 + \frac{1}{2}n_4n_5 \\
&= (1 + 9 + 16 + 4 + 9 + 1) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{40}{2} = 20 \\
Var(SJT_{BIBD}) &= Var(U_{a12}) + 81Var(U_{a14}) + 256Var(U_{a15}) + 16Var(U_{a24}) + 81Var(U_{a25}) \\
&+ Var(U_{a34}) + 18Cov(U_{a12}, U_{a14}) + 32Cov(U_{a12}, U_{a15}) + 8Cov(U_{a12}, U_{a24}) \\
&+ 18Cov(U_{a12}, U_{a25}) + 2Cov(U_{a12}, U_{a45}) + 288Cov(U_{a14}, U_{a15}) \\
&+ 72Cov(U_{a14}, U_{a24}) + 162Cov(U_{a14}, U_{a25}) + 18Cov(U_{a14}, U_{a45}) \\
&+ 128Cov(U_{a15}, U_{a24}) + 288Cov(U_{a15}, U_{a25}) + 32Cov(U_{a15}, U_{a45}) \\
&+ 72Cov(U_{a24}, U_{a25}) + 8Cov(U_{a24}, U_{a45}) + 18Cov(U_{a25}, U_{a45})
\end{aligned}
$$

$$
\begin{aligned}
Var(SJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 81\times\frac{1}{12}n_1n_4(n_1+n_4+1) + 256\times\frac{1}{12}n_1n_5(n_1+n_5+1)\\
&+ 16\times\frac{1}{12}n_2n_4(n_2+n_4+1) + 81\times\frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1)\\
&+ 18\times\frac{1}{12}n_1n_2n_4 + 32\times\frac{1}{12}n_1n_2n_5 - 8\times\frac{1}{12}n_1n_2n_4 - 18\times\frac{1}{12}n_1n_2n_5 + 2\times 0\\
&+ 288\times\frac{1}{12}n_1n_4n_5 + 72\times\frac{1}{12}n_1n_2n_4 + 162\times 0 - 18\times\frac{1}{12}n_1n_4n_5 + 128\times 0\\
&+ 288\times\frac{1}{12}n_1n_2n_5 + 32\times\frac{1}{12}n_1n_4n_5 + 72\times\frac{1}{12}n_2n_4n_5 - 8\times\frac{1}{12}n_2n_4n_5\\
&+ 18\times\frac{1}{12}n_2n_4n_5\\
Var(SJT_{BIBD}) &= 436\times\frac{3}{12} + 768\times\frac{1}{12}\\
Var(SJT_{BIBD}) &= \frac{2076}{12} = 173
\end{aligned}
$$

When treatment 4 is missing.

$$
\begin{aligned}
SJT_{BIBD} &= U_{a12} + 4U_{a13} + 16U_{a15} + U_{a23} + 9U_{a25} + 4U_{a35}\\
E(SJT_{BIBD}) &= E(U_{a12}) + 4E(U_{a13}) + 16E(U_{a15}) + E(U_{a23}) + 9E(U_{a25}) + 4E(U_{a35})\\
&= \frac{1}{2}n_1n_2 + 4\times\frac{1}{2}n_1n_3 + 16\times\frac{1}{2}n_1n_5 + \frac{1}{2}n_2n_3 + 9\times\frac{1}{2}n_2n_5 + 4\times\frac{1}{2}n_3n_5\\
&= (1+4+16+1+9+4)\times\frac{1}{2}(1)(1)\\
E(SJT_{BIBD}) &= \frac{35}{2} = 17.5\\
Var(SJT_{BIBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + 256Var(U_{a15}) + Var(U_{a23}) + 81Var(U_{a25})\\
&+ 16Var(U_{a35}) + 8Cov(U_{a12},U_{a13}) + 32Cov(U_{a12},U_{a15}) + 2Cov(U_{a12},U_{a23})\\
&+ 18Cov(U_{a12},U_{a25}) + 8Cov(U_{a12},U_{a35}) + 128Cov(U_{a13},U_{a15})\\
&+ 8Cov(U_{a13},U_{a23}) + 72Cov(U_{a13},U_{a25}) + 32Cov(U_{a13},U_{a35})\\
&+ 32Cov(U_{a15},U_{a23}) + 288Cov(U_{a15},U_{a25}) + 128Cov(U_{a15},U_{a35})\\
&+ 18Cov(U_{a23},U_{a25}) + 8Cov(U_{a23},U_{a35}) + 72Cov(U_{a25},U_{a35})\\
Var(SJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 16\times\frac{1}{12}n_1n_3(n_1+n_3+1)\\
&+ 256\times\frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_2n_3(n_2+n_3+1)\\
&+ 81\times\frac{1}{12}n_2n_5(n_2+n_5+1) + 16\times\frac{1}{12}n_3n_5(n_3+n_5+1)\\
&+ 8\times\frac{1}{12}n_1n_2n_3 + 32\times\frac{1}{12}n_1n_2n_5 - 2\times\frac{1}{12}n_1n_2n_3 - 18\times\frac{1}{12}n_1n_2n_5 + 8\times 0\\
&+ 128\times\frac{1}{12}n_1n_3n_5 + 8\times\frac{1}{12}n_1n_2n_3 + 72\times 0 - 32\times\frac{1}{12}n_1n_3n_5 + 32\times 0\\
&+ 288\times\frac{1}{12}n_1n_2n_5 + 128\times\frac{1}{12}n_1n_3n_5 + 18\times\frac{1}{12}n_2n_3n_5 - 8\times\frac{1}{12}n_2n_3n_5\\
&+ 72\times\frac{1}{12}n_2n_3n_5\\
Var(SJT_{BIBD}) &= 371\times\frac{3}{12} + 622\times\frac{1}{12}
\end{aligned}
$$

$$Var(SJT_{BIBD}) = \frac{1735}{12} \approx 144.5833$$

When treatment 5 is missing.

$$\begin{aligned}
SJT_{BIBD} &= U_{a12} + 4U_{a13} + 9U_{a14} + U_{a23} + 4U_{a24} + U_{a34} \\
E(SJT_{BIBD}) &= E(U_{a12}) + 4E(U_{a13}) + 9E(U_{a14}) + E(U_{a23}) + 4E(U_{a24}) + E(U_{a34}) \\
&= \frac{1}{2}n_1n_2 + 4 \times \frac{1}{2}n_1n_3 + 9 \times \frac{1}{2}n_1n_4 + \frac{1}{2}n_2n_3 + 4 \times \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= (1+4+9+1+4+1) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{20}{2} = 10 \\
Var(SJT_{BIBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + 81Var(U_{a14}) + Var(U_{a23}) + 16Var(U_{a24}) \\
&+ Var(U_{a34}) + 8Cov(U_{a12}, U_{a13}) + 18Cov(U_{a12}, U_{a14}) + 2Cov(U_{a12}, U_{a23}) \\
&+ 8Cov(U_{a12}, U_{a24}) + 2Cov(U_{a12}, U_{a34}) + 72Cov(U_{a13}, U_{a14}) \\
&+ 8Cov(U_{a13}, U_{a23}) + 32Cov(U_{a13}, U_{a24}) + 8Cov(U_{a13}, U_{a34}) \\
&+ 18Cov(U_{a14}, U_{a23}) + 72Cov(U_{a14}, U_{a24}) + 18Cov(U_{a14}, U_{a34}) \\
&+ 8Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) + 8Cov(U_{a24}, U_{a34}) \\
Var(SJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1) + 16 \times \frac{1}{12}n_1n_3(n_1+n_3+1) \\
&+ 81 \times \frac{1}{12}n_1n_4(n_1+n_4+1) + \frac{1}{12}n_2n_3(n_2+n_3+1) \\
&+ 16 \times \frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) \\
&+ 8 \times \frac{1}{12}n_1n_2n_3 + 18 \times \frac{1}{12}n_1n_2n_4 - 2 \times \frac{1}{12}n_1n_2n_3 - 8 \times \frac{1}{12}n_1n_2n_4 + 2 \times 0 \\
&+ 72 \times \frac{1}{12}n_1n_3n_4 + 8 \times \frac{1}{12}n_1n_2n_3 + 32 \times 0 - 8 \times \frac{1}{12}n_1n_3n_4 + 18 \times 0 \\
&+ 72 \times \frac{1}{12}n_1n_2n_4 + 18 \times \frac{1}{12}n_1n_3n_4 + 8 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 \\
&+ 8 \times \frac{1}{12}n_2n_3n_4 \\
Var(SJT_{BIBD}) &= 116 \times \frac{3}{12} + 192 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{540}{12} = 45
\end{aligned}$$

Overall mean is:

$$E(SJT_{BIBD}) = \frac{10 + 17.5 + 20 + 17.5 + 10}{5} = 15$$

Overall variance is:

$$Var(SJT_{BIBD}) = \frac{540/12 + 1735/12 + 2076/12 + 1735/12 + 540/12}{5} = \frac{3313}{30} \approx 110.4333$$

Five treatments 2 missing - JT BIBD

When treatments 1 & 2 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a34} + U_{a35} + U_{a45} \\
E(JT_{BIBD}) &= E(U_{a34}) + E(U_{a35}) + E(U_{a45}) \\
&= \frac{1}{2}n_3n_4 + \frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 = \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{3}{2} = 1.5 \\
Var(JT_{BIBD}) &= Var(U_{a34}) + Var(U_{a35}) + Var(U_{a45}) + 2Cov(U_{a34}, U_{a35}) + 2Cov(U_{a34}, U_{a45}) \\
&+ 2Cov(U_{a35}, U_{a45}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_3n_4(n_3 + n_4 + 1) + \frac{1}{12}n_3n_5(n_3 + n_5 + 1) + \frac{1}{12}n_4n_5(n_4 + n_5 + 1) \\
&+ 2 \times \frac{1}{12}n_3n_4n_5 - 2 \times \frac{1}{12}n_3n_4n_5 + 2 \times \frac{1}{12}n_3n_4n_5 \\
Var(JT_{BIBD}) &= 3 \times \frac{3}{12} + 2 \times \frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

When treatment 1 & 3 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a24} + U_{a25} + U_{a45} \\
E(JT_{BIBD}) &= E(U_{a24}) + E(U_{a25}) + E(U_{a45}) \\
&= \frac{1}{2}n_2n_4 + \frac{1}{2}n_2n_5 + \frac{1}{2}n_4n_5 = \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{3}{2} = 1.5 \\
Var(JT_{BIBD}) &= Var(U_{a24}) + Var(U_{a25}) + Var(U_{a45}) + 2Cov(U_{a24}, U_{a25}) + 2Cov(U_{a24}, U_{a45}) \\
&+ 2Cov(U_{a25}, U_{a45}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_2n_5(n_2 + n_5 + 1) + \frac{1}{12}n_4n_5(n_4 + n_5 + 1) \\
&+ 2 \times \frac{1}{12}n_2n_4n_5 - 2 \times \frac{1}{12}n_2n_4n_5 + 2 \times \frac{1}{12}n_2n_4n_5 \\
Var(JT_{BIBD}) &= 3 \times \frac{3}{12} + 2 \times \frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

When treatment 1 & 4 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a23} + U_{a25} + U_{a35} \\
E(JT_{BIBD}) &= E(U_{a23}) + E(U_{a25}) + E(U_{a35}) \\
&= \frac{1}{2}n_2n_3 + \frac{1}{2}n_2n_5 + \frac{1}{2}n_3n_5 = \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{3}{2} = 1.5 \\
Var(JT_{BIBD}) &= Var(U_{a23}) + Var(U_{a25}) + Var(U_{a35}) + 2Cov(U_{a23}, U_{a25}) + 2Cov(U_{a23}, U_{a35}) \\
&+ 2Cov(U_{a25}, U_{a35})
\end{aligned}
$$

$$Var(JT_{BIBD}) = \frac{1}{12}n_2n_3(n_2+n_3+1) + \frac{1}{12}n_2n_5(n_2+n_5+1)\frac{1}{12}n_3n_5(n_3+n_5+1)$$
$$+ 2 \times \frac{1}{12}n_2n_3n_5 - 2 \times \frac{1}{12}n_2n_3n_5 + 2 \times \frac{1}{12}n_2n_3n_5$$
$$Var(JT_{BIBD}) = 3 \times \frac{3}{12} + 2 \times \frac{1}{12}$$
$$Var(JT_{BIBD}) = \frac{11}{12} \approx 0.9167$$

When treatment 1 & 5 is missing.

$$JT_{BIBD} = U_{a23} + U_{a24} + U_{a34}$$
$$E(JT_{BIBD}) = E(U_{a23}) + E(U_{a24}) + E(U_{a34}) = \frac{1}{2}n_2n_3 + \frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5$$
$$= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1)$$
$$E(JT_{BIBD}) = \frac{3}{2} = 1.5$$
$$Var(JT_{BIBD}) = Var(U_{a23}) + Var(U_{a24}) + Var(U_{a34}) + 2Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34})$$
$$+ 2Cov(U_{a24}, U_{a34})$$
$$Var(JT_{BIBD}) = \frac{1}{12}n_2n_3(n_2+n_3+1) + \frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1)$$
$$+ 2 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 + 2 \times \frac{1}{12}n_2n_3n_4$$
$$Var(JT_{BIBD}) = 3 \times \frac{3}{12} + 2 \times \frac{1}{12}$$
$$Var(JT_{BIBD}) = \frac{11}{12} \approx 0.9167$$

When treatment 2 & 3 is missing.

$$JT_{BIBD} = U_{a14} + U_{a15} + U_{a45}$$
$$E(JT_{BIBD}) = E(U_{a14}) + E(U_{a15}) + E(U_{a45}) = \frac{1}{2}n_1n_4 + \frac{1}{2}n_1n_5 + \frac{1}{2}n_4n_5$$
$$= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1)$$
$$E(JT_{BIBD}) = \frac{3}{2} = 1.5$$
$$Var(JT_{BIBD}) = Var(U_{a14}) + Var(U_{a15}) + Var(U_{a45}) + 2Cov(U_{a14}, U_{a15}) + 2Cov(U_{a14}, U_{a45})$$
$$+ 2Cov(U_{a15}, U_{a45})$$
$$Var(JT_{BIBD}) = \frac{1}{12}n_1n_4(n_1+n_4+1) + \frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1)$$
$$+ 2 \times \frac{1}{12}n_1n_4n_5 - 2 \times \frac{1}{12}n_1n_4n_5 + 2 \times \frac{1}{12}n_1n_4n_5$$
$$Var(JT_{BIBD}) = 3 \times \frac{3}{12} + 2 \times \frac{1}{12}$$
$$Var(JT_{BIBD}) = \frac{11}{12} \approx 0.9167$$

When treatment 2 & 4 is missing.

$$JT_{BIBD} = U_{a13} + U_{a15} + U_{a35}$$

$$
\begin{aligned}
E(JT_{BIBD}) &= E(U_{a13}) + E(U_{a15}) + E(U_{a35}) = \frac{1}{2}n_1n_3 + \frac{1}{2}n_1n_5 + \frac{1}{2}n_3n_5 \\
E(JT_{BIBD}) &= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{3}{2} = 1.5 \\
Var(JT_{BIBD}) &= Var(U_{a13}) + Var(U_{a15}) + Var(U_{a35}) + 2Cov(U_{a13}, U_{a15}) + 2Cov(U_{a13}, U_{a35}) \\
&\quad + 2Cov(U_{a15}, U_{a35}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_1n_5(n_1 + n_5 + 1) + \frac{1}{12}n_3n_5(n_3 + n_5 + 1) \\
&\quad + 2 \times \frac{1}{12}n_1n_3n_5 - 2 \times \frac{1}{12}n_1n_3n_5 + 2 \times \frac{1}{12}n_1n_3n_5 \\
Var(JT_{BIBD}) &= 3 \times \frac{3}{12} + 2 \times \frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

When treatment 2 & 5 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a13} + U_{a14} + U_{a34} \\
E(JT_{BIBD}) &= E(U_{a13}) + E(U_{a14}) + E(U_{a34}) = \frac{1}{2}n_1n_3 + \frac{1}{2}n_1n_4 + +\frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{3}{2} = 1.5 \\
Var(JT_{BIBD}) &= Var(U_{a13}) + Var(U_{a14}) + Var(U_{a34}) + 2Cov(U_{a13}, U_{a14}) \\
&\quad + 2Cov(U_{a13}, U_{a34}) + 2Cov(U_{a14}, U_{a34}) \\
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) \\
&\quad + 2 \times \frac{1}{12}n_1n_3n_4 - 2 \times \frac{1}{12}n_1n_3n_4 + 2 \times \frac{1}{12}n_1n_3n_4 \\
Var(JT_{BIBD}) &= 3 \times \frac{3}{12} + 2 \times \frac{1}{12} \\
Var(JT_{BIBD}) &= \frac{11}{12} \approx 0.9167
\end{aligned}
$$

When treatment 3 & 4 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a12} + U_{a15} + U_{a25} \\
E(JT_{BIBD}) &= E(U_{a12}) + E(U_{a15}) + E(U_{a25}) = \frac{1}{2}n_1n_2 + \frac{1}{2}n_1n_5 + \frac{1}{2}n_2n_5 \\
&= \frac{1}{2}(1)(1 + \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(JT_{BIBD}) &= \frac{3}{2} = 1.5 \\
Var(JT_{BIBD}) &= Var(U_{a12}) + Var(U_{a15}) + Var(U_{a25}) + 2Cov(U_{a12}, U_{a15}) \\
&\quad + 2Cov(U_{a12}, U_{a25}) + 2Cov(U_{a15}, U_{a25})
\end{aligned}
$$

$$
\begin{aligned}
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1)+\frac{1}{12}n_1n_5(n_1+n_5+1)+\frac{1}{12}n_2n_5(n_2+n_5+1)\\
&+2\times\frac{1}{12}n_1n_2n_5-2\times\frac{1}{12}n_1n_2n_5+2\times\frac{1}{12}n_1n_4n_5\\
Var(JT_{BIBD}) &= 3\times\frac{3}{12}+2\times\frac{1}{12}\\
Var(JT_{BIBD}) &= \frac{11}{12}\approx 0.9167
\end{aligned}
$$

When treatment 3 & 5 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a12}+U_{a14}+U_{a24}\\
E(JT_{BIBD}) &= E(U_{a12})+E(U_{a14})+E(U_{a24})=\frac{1}{2}n_1n_2+\frac{1}{2}n_1n_4+\frac{1}{2}n_2n_4\\
&= \frac{1}{2}(1)(1+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)\\
E(JT_{BIBD}) &= \frac{3}{2}=1.5\\
Var(JT_{BIBD}) &= Var(U_{a12})+Var(U_{a14})+Var(U_{a24})+2Cov(U_{a12},U_{a14})\\
&+2Cov(U_{a12},U_{a24})+2Cov(U_{a14},U_{a24})\\
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1)+\frac{1}{12}n_1n_4(n_1+n_4+1)+\frac{1}{12}n_2n_4(n_2+n_4+1)\\
&+2\times\frac{1}{12}n_1n_2n_4-2\times\frac{1}{12}n_1n_2n_4+2\times\frac{1}{12}n_1n_2n_4\\
Var(JT_{BIBD}) &= 3\times\frac{3}{12}+2\times\frac{1}{12}\\
Var(JT_{BIBD}) &= \frac{11}{12}\approx 0.9167
\end{aligned}
$$

When treatment 4 & 5 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a12}+U_{a13}+U_{a23}\\
E(JT_{BIBD}) &= E(U_{a12})+E(U_{a13})+E(U_{a23})=\frac{1}{2}n_1n_2+\frac{1}{2}n_1n_3+\frac{1}{2}n_2n_3\\
&= \frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)+\frac{1}{2}(1)(1)\\
E(JT_{BIBD}) &= \frac{3}{2}=1.5\\
Var(JT_{BIBD}) &= Var(U_{a12})+Var(U_{a13})+Var(U_{a23})+2Cov(U_{a12},U_{a13})+2Cov(U_{a12},U_{a23})\\
&+2Cov(U_{a13},U_{a23})\\
Var(JT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1+n_2+1)+\frac{1}{12}n_1n_3(n_1+n_3+1)+\frac{1}{12}n_2n_3(n_2+n_3+1)\\
&+2\times\frac{1}{12}n_1n_2n_3-2\times\frac{1}{12}n_1n_2n_3+2\times\frac{1}{12}n_1n_2n_3\\
Var(JT_{BIBD}) &= 3\times\frac{3}{12}+2\times\frac{1}{12}\\
Var(JT_{BIBD}) &= \frac{11}{12}\approx 0.9167
\end{aligned}
$$

Overall mean is:

$$
E(JT_{BIBD})=\frac{1.5+1.5+1.5+1.5+1.5+1.5+1.5+1.5+1.5+1.5}{10}=1.5
$$

Overall variance is:

$$Var(JT_{BIBD}) = \frac{\frac{11}{12}+\frac{11}{12}+\frac{11}{12}+\frac{11}{12}+\frac{11}{12}+\frac{11}{12}+\frac{11}{12}+\frac{11}{12}+\frac{11}{12}+\frac{11}{12}}{10} = \frac{11}{12} \approx 0.9167$$

Five treatments 2 missing - MJT BIBD

$$\begin{aligned}
&\text{When treatments 1 \& 2 is missing.}\\
MJT_{BIBD} &= U_{a34} + 2U_{a35} + U_{a45}\\
E(MJT_{BIBD}) &= E(U_{a34}) + 2E(U_{a35}) + E(U_{a45}) = \frac{1}{2}n_3n_4 + 2\times\frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5\\
&= \frac{1}{2}(1)(1) + 2\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1)\\
E(MJT_{BIBD}) &= \frac{4}{2} = 2\\
Var(MJT_{BIBD}) &= Var(U_{a34}) + 4Var(U_{a35}) + Var(U_{a45}) + 4Cov(U_{a34}, U_{a35})\\
&+ 2Cov(U_{a34}, U_{a45}) + 4Cov(U_{a35}, U_{a45})\\
Var(MJT_{RCBD}) &= \frac{1}{12}n_3n_4(n_3+n_4+1) + 4\times\frac{1}{12}n_3n_5(n_3+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1)\\
&+ 4\times\frac{1}{12}n_3n_4n_5 - 2\times\frac{1}{12}n_3n_4n_5 + 4\times\frac{1}{12}n_3n_4n_5\\
Var(MJT_{RCBD}) &= 6\times\frac{3}{12} + 6\times\frac{1}{12}\\
Var(MJT_{RCBD}) &= \frac{24}{12} = 2\\
&\text{When treatments 1 \& 3 is missing.}\\
MJT_{BIBD} &= 2U_{a24} + 3U_{a25} + U_{a45}\\
E(MJT_{BIBD}) &= 2E(U_{a24}) + 3E(U_{a25}) + E(U_{a45}) = 2\times\frac{1}{2}n_2n_4 + 3\times\frac{1}{2}n_2n_5 + \frac{1}{2}n_4n_5\\
&= 2\times\frac{1}{2}(1)(1) + 3\times\frac{1}{2}(1)(1) + \frac{1}{2}(1)(1)\\
E(MJT_{BIBD}) &= \frac{6}{2} = 3\\
Var(MJT_{BIBD}) &= 4Var(U_{a24}) + 9Var(U_{a25}) + Var(U_{a45}) + 12Cov(U_{a24}, U_{a25})\\
&+ 4Cov(U_{a24}, U_{a45}) + 6Cov(U_{a25}, U_{a45})\\
Var(MJT_{RCBD}) &= 4\times\frac{1}{12}n_2n_4(n_2+n_4+1) + 9\times\frac{1}{12}n_2n_5(n_2+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1)\\
&+ 12\times\frac{1}{12}n_2n_4n_5 - 4\times\frac{1}{12}n_2n_4n_5 + 6\times\frac{1}{12}n_2n_4n_5\\
Var(MJT_{RCBD}) &= 14\times\frac{3}{12} + 14\times\frac{1}{12}\\
Var(MJT_{RCBD}) &= \frac{56}{12} \approx 4.6667\\
&\text{When treatments 1 \& 4 is missing.}\\
MJT_{BIBD} &= U_{a23} + 3U_{a25} + 2U_{a35}\\
E(MJT_{BIBD}) &= E(U_{a23}) + 3E(U_{a25}) + 2E(U_{a35}) = \frac{1}{2}n_2n_3 + 3\times\frac{1}{2}n_2n_5 + 2\times\frac{1}{2}n_3n_5
\end{aligned}$$

$$
\begin{aligned}
E(MJT_{BIBD}) &= \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) \\
E(MJT_{BIBD}) &= \frac{6}{2} = 3 \\
Var(MJT_{BIBD}) &= Var(U_{a23}) + 9Var(U_{a25}) + 4Var(U_{a35}) + 6Cov(U_{a23}, U_{a25}) \\
&+ 4Cov(U_{a23}, U_{a35}) + 12Cov(U_{a25}, U_{a35}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_2n_3(n_2+n_3+1) + 9 \times \frac{1}{12}n_2n_5(n_2+n_5+1) + 4 \times \frac{1}{12}n_3n_5(n_3+n_5+1) \\
&+ 6 \times \frac{1}{12}n_2n_3n_5 - 4 \times \frac{1}{12}n_2n_3n_5 + 12 \times \frac{1}{12}n_2n_3n_5 \\
Var(MJT_{RCBD}) &= 14 \times \frac{3}{12} + 14 \times \frac{1}{12} \\
Var(MJT_{RCBD}) &= \frac{56}{12} \approx 4.6667
\end{aligned}
$$

When treatments 1 & 5 is missing.

$$
\begin{aligned}
MJT_{BIBD} &= U_{a23} + 2U_{a24} + U_{a34} \\
E(MJT_{BIBD}) &= E(U_{a23}) + 2E(U_{a24}) + E(U_{a34}) = \frac{1}{2}n_2n_3 + 2 \times \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4 \\
&= \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{BIBD}) &= \frac{4}{2} = 2 \\
Var(MJT_{BIBD}) &= Var(U_{a23}) + 4Var(U_{a24}) + Var(U_{a34}) + 4Cov(U_{a23}, U_{a24}) \\
&+ 2Cov(U_{a23}, U_{a34}) + 4Cov(U_{a24}, U_{a34}) \\
Var(MJT_{RCBD}) &= \frac{1}{12}n_2n_3(n_2+n_3+1) + 4 \times \frac{1}{12}n_2n_4(n_2+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) \\
&+ 4 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 + 4 \times \frac{1}{12}n_2n_3n_4 \\
Var(MJT_{RCBD}) &= 6 \times \frac{3}{12} + 6 \times \frac{1}{12} \\
Var(MJT_{RCBD}) &= \frac{24}{12} = 2
\end{aligned}
$$

When treatment 2 & 3 is missing.

$$
\begin{aligned}
MJT_{BIBD} &= 3U_{a14} + 4U_{a15} + U_{a45} \\
E(MJT_{BIBD}) &= 3E(U_{a14}) + 4E(U_{a15}) + E(U_{a45}) = 3 \times \frac{1}{2}n_1n_4 + 4 \times \frac{1}{2}n_1n_5 + \frac{1}{2}n_4n_5 \\
&= 3 \times \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1) \\
E(MJT_{BIBD}) &= \frac{8}{2} = 4 \\
Var(MJT_{BIBD}) &= 9Var(U_{a14}) + 16Var(U_{a15}) + Var(U_{a45}) + 24Cov(U_{a14}, U_{a15}) \\
&+ 6Cov(U_{a14}, U_{a45}) + 8Cov(U_{a15}, U_{a45}) \\
Var(MJT_{BIBD}) &= 9 \times \frac{1}{12}n_1n_4(n_1+n_4+1) + 16 \times \frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1) \\
&+ 24 \times \frac{1}{12}n_1n_4n_5 - 6 \times \frac{1}{12}n_1n_4n_5 + 8 \times \frac{1}{12}n_1n_4n_5
\end{aligned}
$$

$$Var(MJT_{BIBD}) = 26 \times \frac{3}{12} + 26 \times \frac{1}{12}$$
$$Var(MJT_{BIBD}) = \frac{104}{12} \approx 8.6667$$

When treatments 2 & 4 is missing.

$$MJT_{BIBD} = 2U_{a13} + 4U_{a15} + 2U_{a35}$$
$$E(MJT_{BIBD}) = 2E(U_{a13}) + 4E(U_{a15}) + 2E(U_{a35}) = 2 \times \frac{1}{2}n_1n_3 + 4 \times \frac{1}{2}n_1n_5 + 2 \times \frac{1}{2}n_3n_5$$
$$= 2 \times \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1)$$
$$E(MJT_{BIBD}) = \frac{8}{2} = 4$$
$$Var(MJT_{BIBD}) = 4Var(U_{a13}) + 16Var(U_{a15}) + 4Var(U_{a35}) + 16Cov(U_{a13}, U_{a15}) + 8Cov(U_{a13}, U_{a35}) + 16Cov(U_{a15}, U_{a35})$$
$$Var(MJT_{BIBD}) = 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + 16 \times \frac{1}{12}n_1n_5(n_1 + n_5 + 1) + 4 \times \frac{1}{12}n_3n_5(n_3 + n_5 + 1) + 16 \times \frac{1}{12}n_1n_3n_5 - 8 \times \frac{1}{12}n_1n_3n_5 + 16 \times \frac{1}{12}n_1n_3n_5$$
$$Var(MJT_{BIBD}) = 24 \times \frac{3}{12} + 24 \times \frac{1}{12}$$
$$Var(MJT_{BIBD}) = \frac{96}{12} = 8$$

When treatment 2 & 5 is missing.

$$MJT_{BIBD} = 2U_{a13} + 3U_{a14} + U_{a34}$$
$$E(MJT_{BIBD}) = 2E(U_{a13}) + 3E(U_{a14}) + E(U_{a34}) = 2 \times \frac{1}{2}n_1n_3 + 3 \times \frac{1}{2}n_1n_4 + \frac{1}{2}n_3n_4$$
$$= 2 \times \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1)$$
$$E(MJT_{BIBD}) = \frac{6}{2} = 3$$
$$Var(MJT_{BIBD}) = 4Var(U_{a13}) + 9Var(U_{a14}) + Var(U_{a34}) + 12Cov(U_{a13}, U_{a14}) + 4Cov(U_{a13}, U_{a34}) + 6Cov(U_{a14}, U_{a34})$$
$$Var(MJT_{BIBD}) = 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + 9 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) + 12 \times \frac{1}{12}n_1n_3n_4 - 4 \times \frac{1}{12}n_1n_3n_4 + 6 \times \frac{1}{12}n_1n_3n_4$$
$$Var(MJT_{BIBD}) = 14 \times \frac{3}{12} + 14 \times \frac{1}{12}$$
$$Var(MJT_{BIBD}) = \frac{56}{12} \approx 4.6667$$

When treatments 3 & 4 is missing.

$$MJT_{BIBD} = U_{a12} + 4U_{a15} + 3U_{a25}$$
$$E(MJT_{BIBD}) = E(U_{a12}) + 4E(U_{a15}) + 3E(U_{a25}) = \frac{1}{2}n_1n_2 + 4 \times \frac{1}{2}n_1n_5 + 3 \times \frac{1}{2}n_2n_5$$
$$E(MJT_{BIBD}) = \frac{1}{2}(1)(1) + 4 \times \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) = \frac{8}{2} = 4$$

$$Var(MJT_{BIBD}) = Var(U_{a12}) + 16Var(U_{a15}) + 9Var(U_{a25}) + 8Cov(U_{a12}, U_{a15})$$
$$+ 6Cov(U_{a12}, U_{a25}) + 24Cov(U_{a15}, U_{a25}$$
$$Var(MJT_{BIBD}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 16 \times \frac{1}{12}n_1n_5(n_1 + n_5 + 1) + 9 \times \frac{1}{12}n_2n_5(n_2 + n_5 + 1)$$
$$+ 8 \times \frac{1}{12}n_1n_2n_5 - 6 \times \frac{1}{12}n_1n_2n_5 + 24 \times \frac{1}{12}n_1n_2n_5$$
$$Var(MJT_{BIBD}) = 26 \times \frac{3}{12} + 26 \times \frac{1}{12}$$
$$Var(MJT_{BIBD}) = \frac{104}{12} \approx 8.6667$$

When treatments 3 & 5 is missing.

$$MJT_{BIBD} = U_{a12} + 3U_{a14} + 2U_{a24}$$
$$E(MJT_{BIBD}) = E(U_{a12}) + 3E(U_{a14}) + 2E(U_{a24}) = \frac{1}{2}n_1n_2 + 3 \times \frac{1}{2}n_1n_4 + 2 \times \frac{1}{2}n_2n_4$$
$$= \frac{1}{2}(1)(1) + 3 \times \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1)$$
$$E(MJT_{BIBD}) = \frac{6}{2} = 3$$
$$Var(MJT_{BIBD}) = Var(U_{a12}) + 9Var(U_{a14}) + 4Var(U_{a24}) + 6Cov(U_{a12}, U_{a14})$$
$$+ 4Cov(U_{a12}, U_{a24}) + 12Cov(U_{a14}, U_{a24})$$
$$Var(MJT_{BIBD}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 9 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + 4 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1)$$
$$+ 6 \times \frac{1}{12}n_1n_2n_4 - 4 \times \frac{1}{12}n_1n_2n_4 + 12 \times \frac{1}{12}n_1n_2n_4$$
$$Var(MJT_{BIBD}) = 14 \times \frac{3}{12} + 14 \times \frac{1}{12}$$
$$Var(MJT_{BIBD}) = \frac{56}{12} \approx 4.6667$$

When treatments 4 & 5 is missing.

$$MJT_{BIBD} = U_{a12} + 2U_{a13} + U_{a23}$$
$$E(MJT_{BIBD}) = E(U_{a12}) + 2E(U_{a13}) + E(U_{a23}) = \frac{1}{2}n_1n_2 + 2 \times \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3$$
$$= \frac{1}{2}(1)(1) + 2 \times \frac{1}{2}(1)(1) + \frac{1}{2}(1)(1)$$
$$E(MJT_{BIBD}) = \frac{4}{2} = 2$$
$$Var(MJT_{BIBD}) = Var(U_{a12}) + 4Var(U_{a13}) + Var(U_{a23})$$
$$+ 4Cov(U_{a12}, U_{a13}) + 2Cov(U_{a12}, U_{a23}) + 4Cov(U_{a13}, U_{a23})$$
$$Var(MJT_{BIBD}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1)$$
$$+ 4 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 4 \times \frac{1}{12}n_1n_2n_3$$
$$Var(MJT_{BIBD}) = 6 \times \frac{3}{12} + 6 \times \frac{1}{12}$$
$$Var(MJT_{BIBD}) = \frac{24}{12} = 2$$

Overall mean is:

$$E(MJT_{BIBD}) = \frac{2+3+3+2+4+4+3+4+3+2}{10} = 3$$

Overall variance is:

$$Var(MJT_{BIBD}) = \frac{\frac{24}{12}+\frac{56}{12}+\frac{56}{12}+\frac{24}{12}+\frac{104}{12}+\frac{96}{12}+\frac{56}{12}+\frac{104}{12}+\frac{56}{12}+\frac{24}{12}}{10} = 5$$

Five treatments 2 missing - SJT BIBD

When treatments 1 & 2 are is missing.

$$\begin{aligned}
SJT_{BIBD} &= U_{a34} + 4U_{a35} + U_{a45} \\
E(SJT_{BIBD}) &= E(U_{a34}) + 4E(U_{a35}) + E(U_{a45}) = \frac{1}{2}n_3n_4 + 4 \times \frac{1}{2}n_3n_5 + \frac{1}{2}n_4n_5 \\
&= (1+4+1) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{6}{2} = 3 \\
Var(SJT_{BIBD}) &= Var(U_{a34}) + 16Var(U_{a35}) + Var(U_{a45}) + 8Cov(U_{a34}, U_{a35}) \\
&+ 2Cov(U_{a34}, U_{a45}) + 8Cov(U_{a35}, U_{a45}) \\
Var(SJT_{BIBD}) &= \frac{1}{12}n_3n_4(n_3+n_4+1) + 16 \times \frac{1}{12}n_3n_5(n_3+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1) \\
&+ 8 \times \frac{1}{12}n_3n_4n_5 - 2 \times \frac{1}{12}n_3n_4n_5 + 8 \times \frac{1}{12}n_3n_4n_5 \\
Var(SJT_{BIBD}) &= 18 \times \frac{3}{12} + 14 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{68}{12} \approx 5.6667
\end{aligned}$$

When treatments 1 & 3 is missing.

$$\begin{aligned}
SJT_{BIBD} &= 4U_{a24} + 9U_{a25} + U_{a45} \\
E(SJT_{BIBD}) &= 4E(U_{a24}) + 9E(U_{a25}) + E(U_{a45}) = 4 \times \frac{1}{2}n_2n_4 + 9 \times \frac{1}{2}n_2n_5 + \frac{1}{2}n_4n_5 \\
&= (4+9+1) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{14}{2} = 7 \\
Var(SJT_{BIBD}) &= 16Var(U_{a24}) + 81Var(U_{a25}) + Var(U_{a45}) + 72Cov(U_{a24}, U_{a25}) \\
&+ 8Cov(U_{a24}, U_{a45}) + 18Cov(U_{a25}, U_{a45}) \\
Var(SJT_{BIBD}) &= 16 \times \frac{1}{12}n_2n_4(n_2+n_4+1) + 81 \times \frac{1}{12}n_2n_5(n_2+n_5+1) \\
&+ \frac{1}{12}n_4n_5(n_4+n_5+1) + 72 \times \frac{1}{12}n_2n_4n_5 - 8 \times \frac{1}{12}n_2n_4n_5 + 18 \times \frac{1}{12}n_2n_4n_5 \\
Var(SJT_{BIBD}) &= 98 \times \frac{3}{12} + 82 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{376}{12} = 31.3333
\end{aligned}$$

When treatments 1 & 4 is missing.

$$SJT_{BIBD} = U_{a23} + 9U_{a25} + 4U_{a35}$$

$$E(SJT_{BIBD}) = E(U_{a23}) + 9E(U_{a25}) + 4E(U_{a35}) = \frac{1}{2}n_2n_3 + 9 \times \frac{1}{2}n_2n_5 + 4 \times \frac{1}{2}n_3n_5$$

$$= (1 + 9 + 4) \times \frac{1}{2}(1)(1)$$

$$E(SJT_{BIBD}) = \frac{14}{2} = 7$$

$$Var(SJT_{BIBD}) = Var(U_{a23}) + 81Var(U_{a25}) + 16Var(U_{a35}) + 18Cov(U_{a23}, U_{a25}) + 8Cov(U_{a23}, U_{a35}) + 72Cov(U_{a25}, U_{a35})$$

$$Var(SJT_{BIBD}) = \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + 81 \times \frac{1}{12}n_2n_5(n_2 + n_5 + 1) + 16 \times \frac{1}{12}n_3n_5(n_3 + n_5 + 1) + 18 \times \frac{1}{12}n_2n_3n_5 - 8 \times \frac{1}{12}n_2n_3n_5 + 72 \times \frac{1}{12}n_2n_3n_5$$

$$Var(SJT_{BIBD}) = 98 \times \frac{3}{12} + 82 \times \frac{1}{12}$$

$$Var(SJT_{BIBD}) = \frac{376}{12} = 31.3333$$

When treatments 1 & 5 is missing.

$$SJT_{BIBD} = U_{a23} + 4U_{a24} + U_{a34}$$

$$E(SJT_{BIBD}) = E(U_{a23}) + 4E(U_{a24}) + E(U_{a34}) = \frac{1}{2}n_2n_3 + 4 \times \frac{1}{2}n_2n_4 + \frac{1}{2}n_3n_4$$

$$= (1 + 4 + 1) \times \frac{1}{2}(1)(1)$$

$$E(SJT_{BIBD}) = \frac{6}{2} = 3$$

$$Var(SJT_{BIBD}) = Var(U_{a23}) + 16Var(U_{a24}) + Var(U_{a34}) + 8Cov(U_{a23}, U_{a24}) + 2Cov(U_{a23}, U_{a34}) + 8Cov(U_{a24}, U_{a34})$$

$$Var(SJT_{BIBD}) = \frac{1}{12}n_2n_3(n_2 + n_3 + 1) + 16 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) + \frac{1}{12}n_3n_4(n_3 + n_4 + 1) + 8 \times \frac{1}{12}n_2n_3n_4 - 2 \times \frac{1}{12}n_2n_3n_4 + 8 \times \frac{1}{12}n_2n_3n_4$$

$$Var(SJT_{BIBD}) = 18 \times \frac{3}{12} + 14 \times \frac{1}{12}$$

$$Var(SJT_{BIBD}) = \frac{68}{12} = 5.6667$$

When treatments 2 & 3 is missing.

$$SJT_{BIBD} = 9U_{a14} + 16U_{a15} + U_{a45}$$

$$E(SJT_{BIBD}) = 9E(U_{a14}) + 16E(U_{a15}) + E(U_{a45}) = 9 \times \frac{1}{2}n_1n_4 + 16 \times \frac{1}{2}n_1n_5 + \frac{1}{2}n_4n_5$$

$$= (9 + 16 + 1) \times \frac{1}{2}(1)(1)$$

$$E(SJT_{BIBD}) = \frac{26}{2} = 13$$

$$
\begin{aligned}
Var(SJT_{BIBD}) &= 81Var(U_{a14}) + 256Var(U_{a15}) + Var(U_{a45}) + 288Cov(U_{a14}, U_{a15}) \\
&\quad + 18Cov(U_{a14}, U_{a45}) + 32Cov(U_{a15}, U_{a45}) \\
Var(SJT_{BIBD}) &= 81 \times \frac{1}{12}n_1n_4(n_1+n_4+1) + 256 \times \frac{1}{12}n_1n_5(n_1+n_5+1) + \frac{1}{12}n_4n_5(n_4+n_5+1) \\
&\quad + 288 \times \frac{1}{12}n_1n_4n_5 - 18 \times \frac{1}{12}n_1n_4n_5 + 32 \times \frac{1}{12}n_1n_4n_5 \\
Var(SJT_{BIBD}) &= 338 \times \frac{3}{12} + 302 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{1316}{12} \approx 109.6667
\end{aligned}
$$

When treatments 2 & 4 is missing.

$$
\begin{aligned}
SJT_{BIBD} &= 4U_{a13} + 16U_{a15} + 4U_{a35} \\
E(SJT_{BIBD}) &= 4E(U_{a13}) + 16E(U_{a15}) + 4E(U_{a35}) = 4 \times \frac{1}{2}n_1n_3 + 16 \times \frac{1}{2}n_1n_5 + 4 \times \frac{1}{2}n_3n_5 \\
&= (4+16+4) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{24}{2} = 12 \\
Var(SJT_{BIBD}) &= 16Var(U_{a13}) + 256Var(U_{a15}) + 16Var(U_{a35}) + 128Cov(U_{a13}, U_{a15}) \\
&\quad + 32Cov(U_{a13}, U_{a35}) + 128Cov(U_{a15}, U_{a35}) \\
Var(SJT_{BIBD}) &= 16 \times \frac{1}{12}n_1n_3(n_1+n_3+1) + 256 \times \frac{1}{12}n_1n_5(n_1+n_5+1) \\
&\quad + 16 \times \frac{1}{12}n_3n_5(n_3+n_5+1) + 128 \times \frac{1}{12}n_1n_3n_5 - 32 \times \frac{1}{12}n_1n_3n_5 \\
&\quad + 128 \times \frac{1}{12}n_1n_3n_5 \\
Var(SJT_{BIBD}) &= 288 \times \frac{3}{12} + 224 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{1088}{12} \approx 90.6667
\end{aligned}
$$

When treatments 2 & 5 is missing.

$$
\begin{aligned}
SJT_{BIBD} &= 4U_{a13} + 9U_{a14} + U_{a34} \\
E(SJT_{BIBD}) &= 4E(U_{a13}) + 9E(U_{a14}) + E(U_{a34}) = 4 \times \frac{1}{2}n_1n_3 + 9 \times \frac{1}{2}n_1n_4 + \frac{1}{2}n_3n_4 \\
&= (4+9+1) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{14}{2} = 7 \\
Var(SJT_{BIBD}) &= 16Var(U_{a13}) + 81Var(U_{a14}) + Var(U_{a34}) + 72Cov(U_{a13}, U_{a14}) \\
&\quad + 8Cov(U_{a13}, U_{a34}) + 18Cov(U_{a14}, U_{a34}) \\
Var(SJT_{BIBD}) &= 16 \times \frac{1}{12}n_1n_3(n_1+n_3+1) + 81 \times \frac{1}{12}n_1n_4(n_1+n_4+1) + \frac{1}{12}n_3n_4(n_3+n_4+1) \\
&\quad + 72 \times \frac{1}{12}n_1n_3n_4 - 8 \times \frac{1}{12}n_1n_3n_4 + 18 \times \frac{1}{12}n_1n_3n_4 \\
Var(SJT_{BIBD}) &= 98 \times \frac{3}{12} + 82 \times \frac{1}{12}
\end{aligned}
$$

$$Var(SJT_{BIBD}) = \frac{376}{12} \approx 31.3333$$

When treatments 3 & 4 is missing.

$$\begin{aligned}
SJT_{BIBD} &= U_{a12} + 16U_{a15} + 9U_{a25} \\
E(SJT_{BIBD}) &= E(U_{a12}) + 16E(U_{a15}) + 9E(U_{a25}) \\
&= \frac{1}{2}n_1n_2 + 16 \times \frac{1}{2}n_1n_5 + 9 \times \frac{1}{2}n_2n_5 \\
&= (1 + 16 + 9) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{26}{2} = 13 \\
Var(SJT_{BIBD}) &= Var(U_{a12}) + 256Var(U_{a15}) + 81Var(U_{a25}) + 32Cov(U_{a12}, U_{a15}) \\
&+ 18Cov(U_{a12}, U_{a25}) + 288Cov(U_{a15}, U_{a25}) \\
Var(SJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 256 \times \frac{1}{12}n_1n_5(n_1 + n_5 + 1) + 81 \times \frac{1}{12}n_2n_5(n_2 + n_5 + 1) \\
&+ 32 \times \frac{1}{12}n_1n_2n_5 - 18 \times \frac{1}{12}n_1n_2n_5 + 288 \times \frac{1}{12}n_1n_2n_5 \\
Var(SJT_{BIBD}) &= 338 \times \frac{3}{12} + 302 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{1316}{12} = 109.6667
\end{aligned}$$

When treatments 3 & 5 is missing.

$$\begin{aligned}
SJT_{BIBD} &= U_{a12} + 9U_{a14} + 4U_{a24} \\
E(SJT_{BIBD}) &= E(U_{a12}) + 9E(U_{a14}) + 4E(U_{a24}) = \frac{1}{2}n_1n_2 + 9 \times \frac{1}{2}n_1n_4 + 4 \times \frac{1}{2}n_2n_4 \\
&= (1 + 9 + 4) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{14}{2} = 7 \\
Var(SJT_{BIBD}) &= Var(U_{a12}) + 81Var(U_{a14}) + 16Var(U_{a24}) + 18Cov(U_{a12}, U_{a14}) \\
&+ 8Cov(U_{a12}, U_{a24}) + 72Cov(U_{a14}, U_{a24}) \\
Var(SJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 81 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) + 16 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) \\
&+ 18 \times \frac{1}{12}n_1n_2n_4 - 8 \times \frac{1}{12}n_1n_2n_4 + 72 \times \frac{1}{12}n_1n_2n_4 \\
Var(SJT_{BIBD}) &= 98 \times \frac{3}{12} + 82 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{376}{12} = 31.3333
\end{aligned}$$

When treatments 4 & 5 is missing.

$$\begin{aligned}
SJT_{BIBD} &= U_{a12} + 4U_{a13} + U_{a23} \\
E(SJT_{BIBD}) &= E(U_{a12}) + 4E(U_{a13}) + E(U_{a23}) = \frac{1}{2}n_1n_2 + 4 \times \frac{1}{2}n_1n_3 + \frac{1}{2}n_2n_3 \\
&= (1 + 4 + 1) \times \frac{1}{2}(1)(1) \\
E(SJT_{BIBD}) &= \frac{6}{2} = 3
\end{aligned}$$

$$
\begin{aligned}
Var(SJT_{BIBD}) &= Var(U_{a12}) + 16Var(U_{a13}) + Var(U_{a23}) + 8Cov(U_{a12}, U_{a13}) \\
&\quad + 2Cov(U_{a12}, U_{a23}) + 8Cov(U_{a13}, U_{a23}) \\
Var(SJT_{BIBD}) &= \frac{1}{12}n_1n_2(n_1 + n_2 + 1) + 16 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) + \frac{1}{12}n_2n_3(n_2 + n_3 + 1) \\
&\quad + 8 \times \frac{1}{12}n_1n_2n_3 - 2 \times \frac{1}{12}n_1n_2n_3 + 8 \times \frac{1}{12}n_1n_2n_3 \\
Var(SJT_{BIBD}) &= 18 \times \frac{3}{12} + 14 \times \frac{1}{12} \\
Var(SJT_{BIBD}) &= \frac{68}{12} \approx 5.6667
\end{aligned}
$$

Overall mean is:

$$E(SJT_{BIBD}) = \frac{3 + 7 + 7 + 3 + 13 + 12 + 7 + 13 + 7 + 3}{10} = 7.5$$

Overall variance is:

$$Var(SJT_{BIBD}) = \frac{\frac{68}{12} + \frac{376}{12} + \frac{376}{12} + \frac{68}{12} + \frac{1316}{12} + \frac{1088}{12} + \frac{376}{12} + \frac{1316}{12} + \frac{376}{12} + \frac{68}{12}}{10} \approx 45.2333$$

Five treatments 3 missing - JT BIBD

When treatments 1, 2, & 3 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a45} \\
E(JT_{BIBD}) = E(U_{a45}) &= \frac{1}{2}n_4n_5 = \frac{1}{2}(1)(1) = 0.5 \\
Var(JT_{BIBD}) = Var(U_{a45}) &= \frac{1}{12}n_4n_5(n_4 + n_5 + 1) = \frac{3}{12} = 0.25
\end{aligned}
$$

When treatments 1, 2, & 4 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a35} \\
E(JT_{BIBD}) = E(U_{a35}) &= \frac{1}{2}n_3n_5 = \frac{1}{2}(1)(1) = 0.5 \\
Var(JT_{BIBD}) = Var(U_{a35}) &= \frac{1}{12}n_3n_5(n_3 + n_5 + 1) = \frac{3}{12} = 0.25
\end{aligned}
$$

When treatments 1 , 2, & 5 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a34} \\
E(JT_{BIBD}) = E(U_{a34}) &= \frac{1}{2}n_3n_4 = \frac{1}{2}(1)(1) = 0.5 \\
Var(JT_{BIBD}) = Var(U_{a34}) &= \frac{1}{12}n_3n_4(n_3 + n_4 + 1) = \frac{3}{12} = 0.25
\end{aligned}
$$

When treatments 1, 3, & 4 is missing.

$$
\begin{aligned}
JT_{BIBD} &= U_{a25} \\
E(JT_{BIBD}) = E(U_{a25}) &= \frac{1}{2}n_2n_5 = \frac{1}{2}(1)(1) = 0.5 \\
Var(JT_{BIBD}) = Var(U_{a25}) &= \frac{1}{12}n_2n_5(n_2 + n_5 + 1) = \frac{3}{12} = 0.25
\end{aligned}
$$

When treatments 1, 3, & 5 is missing.

$$JT_{BIBD} = U_{a24}$$
$$E(JT_{BIBD}) = E(U_{a24}) = \frac{1}{2}n_2n_4 = \frac{1}{2}(1)(1) = 0.5$$
$$Var(JT_{BIBD}) = Var(U_{a24}) = \frac{1}{12}n_2n_4(n_2 + n_4 + 1) = \frac{3}{12} = 0.25$$

When treatments 1, 4, & 5 is missing.

$$JT_{BIBD} = U_{a23}$$
$$E(JT_{BIBD}) = E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = 0.5$$
$$Var(JT_{BIBD}) = Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2 + n_3 + 1) = \frac{3}{12} = 0.25$$

When treatments 2, 3, & 4 is missing.

$$JT_{BIBD} = U_{a15}$$
$$E(JT_{BIBD}) = E(U_{a15}) = \frac{1}{2}n_1n_5 = \frac{1}{2}(1)(1) = 0.5$$
$$Var(JT_{BIBD}) = Var(U_{a15}) = \frac{1}{12}n_1n_5(n_1 + n_5 + 1) = \frac{3}{12} = 0.25$$

When treatments 2, 3, & 5 is missing.

$$JT_{BIBD} = U_{a14}$$
$$E(JT_{BIBD}) = E(U_{a14}) = \frac{1}{2}n_1n_4 = \frac{1}{2}(1)(1) = 0.5$$
$$Var(JT_{BIBD}) = Var(U_{a14}) = \frac{1}{12}n_1n_4(n_1 + n_4 + 1) = \frac{3}{12} = 0.25$$

When treatments 2, 4, & 5 is missing.

$$JT_{BIBD} = U_{a13}$$
$$E(JT_{BIBD}) = E(U_{a13}) = \frac{1}{2}n_1n_3 = \frac{1}{2}(1)(1) = 0.5$$
$$Var(JT_{BIBD}) = Var(U_{a13}) = \frac{1}{12}n_1n_3(n_1 + n_3 + 1) = \frac{3}{12} = 0.25$$

When treatments 3, 4, & 5 is missing.

$$JT_{BIBD} = U_{a12}$$
$$E(JT_{BIBD}) = E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = 0.5$$
$$Var(JT_{BIBD}) = Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) = \frac{3}{12} = 0.25$$

Overall mean is:

$$E(JT_{BIBD}) = \frac{0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5 + 0.5}{10} = 0.5$$

Overall variance is:

$$Var(JT_{BIBD}) = \frac{0.25 + 0.25 + 0.25 + 0.25 + 0.25 + 0.25 + 0.25 + 0.25 + 0.25 + 0.25}{10} = 0.25$$

Five treatments 3 missing - MJT BIBD

$$
\begin{aligned}
&\text{When treatments 1, 2, \& 3 is missing.}\\
MJT_{BIBD} &= U_{a45}\\
E(MJT_{BIBD}) &= E(U_{a45}) = \frac{1}{2}n_4n_5 = \frac{1}{2}(1)(1) = 0.5\\
Var(MJT_{BIBD}) &= Var(U_{a45}) = \frac{1}{12}n_4n_5(n_4+n_5+1) = \frac{3}{12} = 0.25\\
&\text{When treatments 1, 2, \& 4 is missing.}\\
MJT_{BIBD} &= 2U_{a35}\\
E(MJT_{BIBD}) &= 2E(U_{a35}) = 2\times\frac{1}{2}n_3n_5 = 2\times\frac{1}{2}(1)(1) = 1\\
Var(MJT_{BIBD}) &= 4Var(U_{a35}) = 4\times\frac{1}{12}n_3n_5(n_3+n_5+1) = 4\times\frac{3}{12} = 1\\
&\text{When treatments 1 , 2, \& 5 is missing.}\\
MJT_{BIBD} &= U_{a34}\\
E(MJT_{BIBD}) &= E(U_{a34}) = \frac{1}{2}n_3n_4 = \frac{1}{2}(1)(1) = 0.5\\
Var(MJT_{BIBD}) &= Var(U_{a34}) = \frac{1}{12}n_3n_4(n_3+n_4+1) = \frac{3}{12} = 0.25\\
&\text{When treatments 1, 3, \& 4 is missing.}\\
MJT_{BIBD} &= 3U_{a25}\\
E(MJT_{BIBD}) &= 3E(U_{a25}) = 3\times\frac{1}{2}n_2n_5 = 3\times\frac{1}{2}(1)(1) = 1.5\\
Var(MJT_{BIBD}) &= 9Var(U_{a25}) = 9\times\frac{1}{12}n_2n_5(n_2+n_5+1) = 9\times\frac{3}{12} = 2.25\\
&\text{When treatments 1, 3, \& 5 is missing.}\\
MJT_{BIBD} &= 2U_{a24}\\
E(MJT_{BIBD}) &= 2E(U_{a24}) = 2\times\frac{1}{2}n_2n_4 = 2\times\frac{1}{2}(1)(1) = 1\\
Var(MJT_{BIBD}) &= 4Var(U_{a24}) = 4\times\frac{1}{12}n_2n_4(n_2+n_4+1) = 4\times\frac{3}{12} = 1\\
&\text{When treatments 1, 4, \& 5 is missing.}\\
MJT_{BIBD} &= U_{a23}\\
E(MJT_{BIBD}) &= E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = 0.5\\
Var(MJT_{BIBD}) &= Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2+n_3+1) = \frac{3}{12} = 0.25\\
&\text{When treatments 2, 3, \& 4 is missing.}\\
MJT_{BIBD} &= 4U_{a15}\\
E(MJT_{BIBD}) &= 4E(U_{a15}) = 4\times\frac{1}{2}n_1n_5 = 4\times\frac{1}{2}(1)(1) = 2\\
Var(MJT_{BIBD}) &= 16Var(U_{a15}) = 16 times\frac{1}{12}n_1n_5(n_1+n_5+1) = 16\times\frac{3}{12} = 4
\end{aligned}
$$

When treatments 2, 3, & 5 is missing.

$$MJT_{BIBD} = 3U_{a14}$$

$$E(MJT_{BIBD}) = 3E(U_{a14}) = 3 \times \frac{1}{2}n_1n_4 = 3 \times \frac{1}{2}(1)(1) = 1.5$$

$$Var(MJT_{BIBD}) = 9Var(U_{a14}) = 9 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) = 9 \times \frac{3}{12} = 2.25$$

When treatments 2, 4, & 5 is missing.

$$MJT_{BIBD} = 2U_{a13}$$

$$E(MJT_{BIBD}) = 2E(U_{a13}) = 2 \times \frac{1}{2}n_1n_3 = 2 \times \frac{1}{2}(1)(1) = 1$$

$$Var(MJT_{BIBD}) = 4Var(U_{a13}) = 4 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) = 4 \times \frac{3}{12} = 1$$

When treatments 3, 4, & 5 is missing.

$$MJT_{BIBD} = U_{a12}$$

$$E(MJT_{BIBD}) = E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = 0.5$$

$$Var(MJT_{BIBD}) = Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) = \frac{3}{12} = 0.25$$

Overall mean is:

$$E(MJT_{BIBD}) = \frac{0.5 + 1 + 0.5 + 1.5 + 1 + 0.5 + 2 + 1.5 + 1 + 0.5}{10} = 1$$

Overall variance is:

$$Var(MJT_{BIBD}) = \frac{0.25 + 1 + 0.25 + 2.25 + 1 + 0.25 + 4 + 2.25 + 1 + 0.25}{10} = 1.25$$

Five treatments 3 missing - SJT BIBD

When treatments 1, 2, & 3 is missing.

$$SJT_{BIBD} = U_{a45}$$

$$E(SJT_{BIBD}) = E(U_{a45}) = \frac{1}{2}n_4n_5 = \frac{1}{2}(1)(1) = 0.5$$

$$Var(SJT_{BIBD}) = Var(U_{a45}) = \frac{1}{12}n_4n_5(n_4 + n_5 + 1) = \frac{3}{12} = 0.25$$

When treatments 1, 2, & 4 is missing.

$$SJT_{BIBD} = 4U_{a35}$$

$$E(SJT_{BIBD}) = 4E(U_{a35}) = 4 \times \frac{1}{2}n_3n_5 = 4 \times \frac{1}{2}(1)(1) = 2$$

$$Var(SJT_{BIBD}) = 16Var(U_{a35}) = 16 \times \frac{1}{12}n_3n_5(n_3 + n_5 + 1) = 16 \times \frac{3}{12} = 4$$

When treatments 1 , 2, & 5 is missing.

$$SJT_{BIBD} = U_{a34}$$

$$E(SJT_{BIBD}) = E(U_{a34}) = \frac{1}{2}n_3n_4 = \frac{1}{2}(1)(1) = 0.5$$

$$Var(SJT_{BIBD}) = Var(U_{a34}) = \frac{1}{12}n_3n_4(n_3 + n_4 + 1) = \frac{3}{12} = 0.25$$

When treatments 1, 3, & 4 is missing.

$$SJT_{BIBD} = 9U_{a25}$$

$$E(SJT_{BIBD}) = 9E(U_{a25}) = 9 \times \frac{1}{2}n_2n_5 = 9 \times \frac{1}{2}(1)(1) = 4.5$$

$$Var(SJT_{BIBD}) = 81Var(U_{a25}) = 81 \times \frac{1}{12}n_2n_5(n_2 + n_5 + 1) = 81 \times \frac{3}{12} = 20.25$$

When treatments 1, 3, & 5 is missing.

$$SJT_{BIBD} = 4U_{a24}$$

$$E(SJT_{BIBD}) = 4E(U_{a24}) = 4 \times \frac{1}{2}n_2n_4 = 4 \times \frac{1}{2}(1)(1) = 2$$

$$VarS(JT_{BIBD}) = 16Var(U_{a24}) = 16 \times \frac{1}{12}n_2n_4(n_2 + n_4 + 1) = 16 \times \frac{3}{12} = 4$$

When treatments 1, 4, & 5 is missing.

$$SJT_{BIBD} = U_{a23}$$

$$E(SJT_{BIBD}) = E(U_{a23}) = \frac{1}{2}n_2n_3 = \frac{1}{2}(1)(1) = 0.5$$

$$Var(SJT_{BIBD}) = Var(U_{a23}) = \frac{1}{12}n_2n_3(n_2 + n_3 + 1) = \frac{3}{12} = 0.25$$

When treatments 2, 3, & 4 is missing.

$$SJT_{BIBD} = 16U_{a15}$$

$$E(SJT_{BIBD}) = 16E(U_{a15}) = 16 \times \frac{1}{2}n_1n_5 = 16 \times \frac{1}{2}(1)(1) = 8$$

$$Var(SJT_{BIBD}) = 256Var(U_{a15}) = 256 \times \frac{1}{12}n_1n_5(n_1 + n_5 + 1) = 256 \times \frac{3}{12} = 64$$

When treatments 2, 3, & 5 is missing.

$$SJT_{BIBD} = 9U_{a14}$$

$$E(SJT_{BIBD}) = 9E(U_{a14}) = 9 \times \frac{1}{2}n_1n_4 = 9 \times \frac{1}{2}(1)(1) = 4.5$$

$$Var(SJT_{BIBD}) = 81Var(U_{a14}) = 81 \times \frac{1}{12}n_1n_4(n_1 + n_4 + 1) = 81 \times \frac{3}{12} = 20.25$$

When treatments 2, 4, & 5 is missing.

$$SJT_{BIBD} = 4U_{a13}$$

$$E(SJT_{BIBD}) = 4E(U_{a13}) = 4 \times \frac{1}{2}n_1n_3 = 4 \times \frac{1}{2}(1)(1) = 2$$

$$Var(SJT_{BIBD}) = 16Var(U_{a13}) = 16 \times \frac{1}{12}n_1n_3(n_1 + n_3 + 1) = 16 \times \frac{3}{12} = 4$$

When treatments 3, 4, & 5 is missing.

$$SJT_{BIBD} = U_{a12}$$

$$E(SJT_{BIBD}) = E(U_{a12}) = \frac{1}{2}n_1n_2 = \frac{1}{2}(1)(1) = 0.5$$

$$Var(SJT_{BIBD}) = Var(U_{a12}) = \frac{1}{12}n_1n_2(n_1 + n_2 + 1) = \frac{3}{12} = 0.25$$

Overall mean is:

$$E(SJT_{BIBD}) = \frac{0.5 + 2 + 0.5 + 4.5 + 2 + 0.5 + 8 + 4.5 + 2 + 0.5}{10} = 2.5$$

Overall variance is:

$$Var(SJT_{BIBD}) = \frac{0.25 + 4 + 0.25 + 20.25 + 4 + 0.25 + 64 + 20.25 + 4 + 0.25}{10} = 11.725$$

APPENDIX B. POWER TABLES

Table B.1. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0580	0.0448	0.0564	0.0448
			Last	0.0474	0.0486	0.0540	0.0546
0.0	0.0	0.5	First	0.2046	0.1856	0.2146	0.1856
			Last	0.1868	0.2074	0.2214	0.2304
0.0	0.5	0.5	First	0.2120	0.1838	0.2148	0.1838
			Last	0.1890	0.2008	0.2170	0.2252
0.05	0.25	0.5	First	0.1902	0.1694	0.1996	0.1694
			Last	0.1714	0.1872	0.1990	0.2094
0.0	0.3	0.5	First	0.2126	0.1854	0.2138	0.1854
			Last	0.1902	0.2004	0.2154	0.2178
0.0	0.0	1.0	First	0.4652	0.4538	0.5032	0.4538
			Last	0.4506	0.4874	0.5116	0.5124
0.0	1.0	1.0	First	0.4790	0.4568	0.5034	0.4568
			Last	0.4642	0.4984	0.5168	0.5198
0.0	0.5	1.0	First	0.4946	0.4656	0.5020	0.4656
			Last	0.4726	0.5006	0.5150	0.5290
0.5	0.5	1.0	First	0.2034	0.1798	0.2176	0.1798
			Last	0.1900	0.2088	0.2232	0.2332
0.5	1.0	1.0	First	0.2038	0.1822	0.2222	0.1822
			Last	0.1834	0.2014	0.2194	0.2348
0.1	0.5	1.0	First	0.4248	0.4042	0.4476	0.4042
			Last	0.4124	0.4400	0.4590	0.4680
0.1	0.3	0.7	First	0.2712	0.2448	0.2756	0.2448
			Last	0.2518	0.2666	0.2834	0.2838
0.2	0.5	0.8	First	0.2572	0.2310	0.2638	0.2310
			Last	0.2362	0.2530	0.2672	0.2684
0.0	0.25	0.5	First	0.2052	0.1756	0.2126	0.1756
			Last	0.1820	0.1928	0.2086	0.2264
0.0	0.1	0.8	First	0.3598	0.3348	0.3786	0.3348
			Last	0.3352	0.3590	0.3790	0.3826

Table B.2. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0534	0.0404	0.0528	0.0404
			Last	0.0476	0.0500	0.0558	0.0538
0.0	0.0	0.5	First	0.3084	0.2852	0.3242	0.2852
			Last	0.2826	0.3108	0.3286	0.3294
0.0	0.5	0.5	First	0.3464	0.3152	0.3500	0.3152
			Last	0.3274	0.3412	0.3594	0.3614
0.05	0.25	0.5	First	0.2976	0.2700	0.3064	0.2700
			Last	0.2796	0.2978	0.3142	0.3150
0.0	0.3	0.5	First	0.3446	0.3136	0.3506	0.3136
			Last	0.3316	0.3456	0.3568	0.3616
0.0	0.0	1.0	First	0.6344	0.6320	0.6726	0.6320
			Last	0.6246	0.6722	0.6838	0.6900
0.0	1.0	1.0	First	0.6154	0.6158	0.6548	0.6158
			Last	0.6088	0.6460	0.6660	0.6770
0.0	0.5	1.0	First	0.7262	0.6988	0.7068	0.6988
			Last	0.7116	0.7224	0.7244	0.7392
0.5	0.5	1.0	First	0.3032	0.2826	0.3302	0.2826
			Last	0.2830	0.3096	0.3314	0.3394
0.5	1.0	1.0	First	0.3286	0.3006	0.3286	0.3006
			Last	0.3130	0.3228	0.3394	0.3410
0.1	0.5	1.0	First	0.6626	0.6344	0.6542	0.6344
			Last	0.6522	0.6664	0.6712	0.6876
0.1	0.3	0.7	First	0.4322	0.3996	0.4284	0.3996
			Last	0.4116	0.4274	0.4394	0.4484
0.2	0.5	0.8	First	0.4216	0.3900	0.4166	0.3900
			Last	0.4024	0.4180	0.4284	0.4408
0.0	0.25	0.5	First	0.3550	0.3188	0.3528	0.3188
			Last	0.3274	0.3450	0.3612	0.3762
0.0	0.1	0.8	First	0.5536	0.5316	0.5638	0.5316
			Last	0.5388	0.5610	0.5764	0.5878

Table B.3. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0456	0.0446	0.0508	0.0446
			Last	0.0462	0.0404	0.0484	0.0450
0.0	0.0	0.5	First	0.1690	0.1508	0.1844	0.1508
			Last	0.1520	0.1652	0.1798	0.1994
0.0	0.5	0.5	First	0.1694	0.1398	0.1688	0.1398
			Last	0.1536	0.1612	0.1766	0.1798
0.05	0.25	0.5	First	0.1552	0.1330	0.1608	0.1330
			Last	0.1388	0.1490	0.1602	0.1794
0.0	0.3	0.5	First	0.1600	0.1402	0.1722	0.1402
			Last	0.1426	0.1578	0.1702	0.1692
0.0	0.0	1.0	First	0.3564	0.3350	0.3812	0.3350
			Last	0.3374	0.3618	0.3848	0.3934
0.0	1.0	1.0	First	0.3462	0.3234	0.3740	0.3234
			Last	0.3256	0.3596	0.3806	0.3850
0.0	0.5	1.0	First	0.3838	0.3542	0.3900	0.3542
			Last	0.3668	0.3896	0.4004	0.4148
0.5	0.5	1.0	First	0.1714	0.1488	0.1744	0.1488
			Last	0.1526	0.1576	0.1704	0.1840
0.5	1.0	1.0	First	0.1648	0.1430	0.1736	0.1430
			Last	0.1496	0.1602	0.1756	0.1820
0.1	0.5	1.0	First	0.3248	0.2954	0.3320	0.2954
			Last	0.3018	0.3208	0.3376	0.3419
0.1	0.3	0.7	First	0.1918	0.1670	0.1950	0.1670
			Last	0.1748	0.1856	0.2014	0.2192
0.2	0.5	0.8	First	0.2166	0.1880	0.2192	0.1880
			Last	0.1924	0.2026	0.2182	0.2290
0.0	0.25	0.5	First	0.1732	0.1508	0.1788	0.1508
			Last	0.1580	0.1652	0.1794	0.1849
0.0	0.1	0.8	First	0.2782	0.2532	0.2886	0.2532
			Last	0.2636	0.2798	0.2956	0.2972

Table B.4. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0508	0.0546	0.0514	0.0546
			Last	0.0546	0.0582	0.0566	0.0522
0.0	0.0	0.5	First	0.2424	0.2592	0.2536	0.2592
			Last	0.2830	0.2992	0.2692	0.2590
0.0	0.5	0.5	First	0.2292	0.2526	0.2430	0.2526
			Last	0.2678	0.2840	0.2562	0.2498
0.05	0.25	0.5	First	0.2098	0.2308	0.2254	0.2308
			Last	0.2472	0.2614	0.2378	0.2278
0.0	0.3	0.5	First	0.2378	0.2632	0.2590	0.2632
			Last	0.2760	0.2948	0.2662	0.2590
0.0	0.0	1.0	First	0.5708	0.6244	0.6016	0.6244
			Last	0.6204	0.6588	0.6132	0.6194
0.0	1.0	1.0	First	0.5692	0.6156	0.5996	0.6156
			Last	0.6234	0.6548	0.6166	0.6140
0.0	0.5	1.0	First	0.5822	0.6352	0.6122	0.6352
			Last	0.6318	0.6670	0.6282	0.6308
0.5	0.5	1.0	First	0.2308	0.2574	0.2522	0.2574
			Last	0.2750	0.2936	0.2612	0.2546
0.5	1.0	1.0	First	0.2390	0.2594	0.2484	0.2594
			Last	0.2748	0.2942	0.2648	0.2560
0.1	0.5	1.0	First	0.5160	0.5568	0.5346	0.5568
			Last	0.5644	0.5916	0.5508	0.5510
0.1	0.3	0.7	First	0.2896	0.3164	0.3072	0.3164
			Last	0.3352	0.3598	0.3226	0.3120
0.2	0.5	0.8	First	0.3052	0.3372	0.3226	0.3372
			Last	0.3478	0.3704	0.3388	0.3340
0.0	0.25	0.5	First	0.2348	0.2524	0.2458	0.2524
			Last	0.2750	0.2930	0.2588	0.2512
0.0	0.1	0.8	First	0.4400	0.4816	0.4632	0.4816
			Last	0.4902	0.5206	0.4800	0.4780

Table B.5. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0508	0.0540	0.0520	0.0540
			Last	0.0532	0.0544	0.0588	0.0522
0.0	0.0	0.5	First	0.3806	0.4204	0.4074	0.4204
			Last	0.4264	0.4556	0.4244	0.4140
0.0	0.5	0.5	First	0.3892	0.4226	0.4056	0.4226
			Last	0.4384	0.4644	0.4190	0.4174
0.05	0.25	0.5	First	0.3780	0.3998	0.3792	0.3998
			Last	0.4220	0.4390	0.3934	0.3960
0.0	0.3	0.5	First	0.4094	0.4428	0.4172	0.4428
			Last	0.4640	0.4824	0.4322	0.4386
0.0	0.0	1.0	First	0.7490	0.7962	0.7796	0.7962
			Last	0.7956	0.8264	0.7960	0.79344
0.0	1.0	1.0	First	0.7264	0.7794	0.7716	0.7794
			Last	0.7678	0.8096	0.7810	0.7782
0.0	0.5	1.0	First	0.8082	0.8284	0.7946	0.8284
			Last	0.8438	0.8504	0.8058	0.8268
0.5	0.5	1.0	First	0.3790	0.4146	0.3994	0.4146
			Last	0.4236	0.4550	0.4182	0.4122
0.5	1.0	1.0	First	0.3826	0.4132	0.3930	0.4132
			Last	0.4282	0.4504	0.4138	0.4100
0.1	0.5	1.0	First	0.7558	0.7818	0.7490	0.7818
			Last	0.7940	0.8076	0.7618	0.7780
0.1	0.3	0.7	First	0.5132	0.5428	0.5078	0.5428
			Last	0.5606	0.5798	0.5254	0.5406
0.2	0.5	0.8	First	0.5024	0.5260	0.4958	0.5260
			Last	0.5502	0.5658	0.5138	0.5218
0.0	0.25	0.5	First	0.4252	0.4538	0.4262	0.4538
			Last	0.4778	0.4966	0.4512	0.4530
0.0	0.1	0.8	First	0.6466	0.6850	0.6594	0.6850
			Last	0.6966	0.7220	0.6740	0.6820

Table B.6. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0478	0.0530	0.0500	0.0530
			Last	0.0462	0.0556	0.0544	0.0526
0.0	0.0	0.5	First	0.1892	0.2134	0.2078	0.2134
			Last	0.2224	0.2434	0.2188	0.2104
0.0	0.5	0.5	First	0.1832	0.2020	0.2000	0.2020
			Last	0.2174	0.2306	0.2108	0.1998
0.05	0.25	0.5	First	0.1780	0.1838	0.1756	0.1838
			Last	0.2054	0.2122	0.1932	0.1836
0.0	0.3	0.5	First	0.1894	0.2044	0.1906	0.2044
			Last	0.2208	0.2298	0.2056	0.2012
0.0	0.0	1.0	First	0.4350	0.4694	0.4488	0.4694
			Last	0.4834	0.5098	0.4672	0.4658
0.0	1.0	1.0	First	0.4254	0.4700	0.4456	0.4700
			Last	0.4744	0.5098	0.4650	0.4668
0.0	0.5	1.0	First	0.4394	0.4726	0.4560	0.4726
			Last	0.4878	0.5120	0.4688	0.4712
0.5	0.5	1.0	First	0.1772	0.1964	0.1902	0.1964
			Last	0.2102	0.2218	0.2038	0.1936
0.5	1.0	1.0	First	0.1880	0.2028	0.1984	0.2028
			Last	0.2210	0.2338	0.2096	0.2000
0.1	0.5	1.0	First	0.3888	0.4190	0.4008	0.4190
			Last	0.4364	0.4600	0.4178	0.4154
0.1	0.3	0.7	First	0.2292	0.2536	0.2422	0.2536
			Last	0.2658	0.2822	0.2538	0.2482
0.2	0.5	0.8	First	0.2364	0.2598	0.2466	0.2598
			Last	0.2722	0.2882	0.2642	0.2556
0.0	0.25	0.5	First	0.1944	0.2140	0.2000	0.2140
			Last	0.2302	0.2398	0.2114	0.2082
0.0	0.1	0.8	First	0.3194	0.3428	0.3292	0.3428
			Last	0.3604	0.3808	0.3428	0.3374

Table B.7. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0468	0.0444	0.0466	0.0444
			Last	0.0450	0.0442	0.0516	0.0420
0.0	0.0	0.5	First	0.2408	0.2940	0.2754	0.2940
			Last	0.2296	0.2824	0.2882	0.2732
0.0	0.5	0.5	First	0.2612	0.3124	0.2912	0.3124
			Last	0.2508	0.3008	0.3074	0.2912
0.05	0.25	0.5	First	0.2174	0.2684	0.2508	0.2684
			Last	0.2076	0.2568	0.2638	0.2506
0.0	0.3	0.5	First	0.2508	0.2960	0.2784	0.2960
			Last	0.2416	0.2864	0.2958	0.2766
0.0	0.0	1.0	First	0.6260	0.6996	0.6750	0.6996
			Last	0.6144	0.6876	0.6894	0.6826
0.0	1.0	1.0	First	0.6200	0.6899	0.6732	0.6899
			Last	0.6126	0.6884	0.6868	0.6790
0.0	0.5	1.0	First	0.6250	0.6896	0.6632	0.6896
			Last	0.6138	0.6786	0.6794	0.6702
0.5	0.5	1.0	First	0.2438	0.2930	0.2750	0.2930
			Last	0.2344	0.2822	0.2860	0.2744
0.5	1.0	1.0	First	0.2552	0.3098	0.2886	0.3098
			Last	0.2462	0.2970	0.3050	0.2864
0.1	0.5	1.0	First	0.5634	0.6214	0.5930	0.6214
			Last	0.5530	0.6184	0.6136	0.6110
0.1	0.3	0.7	First	0.3248	0.3850	0.3670	0.3850
			Last	0.3128	0.3808	0.3751	0.3736
0.2	0.5	0.8	First	0.3304	0.3872	0.3692	0.3872
			Last	0.3194	0.3862	0.3848	0.3724
0.0	0.25	0.5	First	0.2530	0.3072	0.2820	0.3072
			Last	0.2450	0.2978	0.2966	0.2858
0.0	0.1	0.8	First	0.4722	0.5394	0.5196	0.5394
			Last	0.4616	0.5344	0.5368	0.5226

Table B.8. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0447	0.0546	0.0498	0.0546
			Last	0.0426	0.0550	0.0536	0.0514
0.0	0.0	0.5	First	0.4160	0.4820	0.4572	0.4820
			Last	0.4060	0.4680	0.4736	0.4640
0.0	0.5	0.5	First	0.4148	0.4874	0.4620	0.4874
			Last	0.4062	0.4754	0.4794	0.4652
0.05	0.25	0.5	First	0.3976	0.4446	0.4188	0.4446
			Last	0.3872	0.4426	0.4358	0.4340
0.0	0.3	0.5	First	0.4428	0.4990	0.4780	0.4990
			Last	0.4322	0.4958	0.4930	0.4834
0.0	0.0	1.0	First	0.7960	0.8694	0.8444	0.8694
			Last	0.7908	0.8588	0.8536	0.8522
0.0	1.0	1.0	First	0.7920	0.8612	0.8474	0.8612
			Last	0.7826	0.8476	0.8542	0.8478
0.0	0.5	1.0	First	0.8728	0.8944	0.8682	0.8944
			Last	0.8656	0.8942	0.8754	0.8910
0.5	0.5	1.0	First	0.4070	0.4894	0.4602	0.4894
			Last	0.3958	0.4690	0.4836	0.4634
0.5	1.0	1.0	First	0.4210	0.4848	0.4606	0.4848
			Last	0.4102	0.4744	0.4768	0.4662
0.1	0.5	1.0	First	0.8086	0.8420	0.8116	0.8420
			Last	0.8010	0.8402	0.8204	0.8370
0.1	0.3	0.7	First	0.5582	0.6102	0.5748	0.6102
			Last	0.5464	0.6074	0.5912	0.5986
0.2	0.5	0.8	First	0.5630	0.6082	0.5750	0.6082
			Last	0.5478	0.6024	0.5938	0.5966
0.0	0.25	0.5	First	0.4560	0.5078	0.4736	0.5078
			Last	0.4446	0.5024	0.4930	0.4948
0.0	0.1	0.8	First	0.7114	0.7670	0.7404	0.7670
			Last	0.6998	0.7638	0.7488	0.7600

Table B.9. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0480	0.0456	0.0466	0.0456
			Last	0.0468	0.0468	0.0506	0.0436
0.0	0.0	0.5	First	0.1910	0.2398	0.2188	0.2398
			Last	0.1842	0.2196	0.2316	0.2160
0.0	0.5	0.5	First	0.1826	0.2260	0.2088	0.2260
			Last	0.1744	0.2158	0.2228	0.2056
0.05	0.25	0.5	First	0.1742	0.2122	0.1930	0.2122
			Last	0.1676	0.2010	0.2068	0.1936
0.0	0.3	0.5	First	0.1938	0.2352	0.2208	0.2352
			Last	0.1840	0.2230	0.2294	0.2164
0.0	0.0	1.0	First	0.4658	0.5460	0.5210	0.5460
			Last	0.4558	0.5348	0.5376	0.5288
0.0	1.0	1.0	First	0.4734	0.5468	0.5262	0.5468
			Last	0.4626	0.5328	0.5432	0.5234
0.0	0.5	1.0	First	0.4900	0.5376	0.5164	0.5376
			Last	0.4786	0.5374	0.5328	0.5264
0.5	0.5	1.0	First	0.1986	0.2416	0.2244	0.2416
			Last	0.1908	0.2324	0.2392	0.2258
0.5	1.0	1.0	First	0.2000	0.2444	0.2236	0.2444
			Last	0.1934	0.2346	0.2358	0.2246
0.1	0.5	1.0	First	0.4276	0.4896	0.4634	0.4896
			Last	0.4142	0.4794	0.4814	0.4704
0.1	0.3	0.7	First	0.2420	0.2880	0.2696	0.2880
			Last	0.2342	0.2778	0.2858	0.2714
0.2	0.5	0.8	First	0.2406	0.2868	0.2656	0.2868
			Last	0.2306	0.2784	0.2810	0.2664
0.0	0.25	0.5	First	0.2004	0.2412	0.2232	0.2412
			Last	0.1912	0.2308	0.2350	0.2240
0.0	0.1	0.8	First	0.3590	0.4078	0.3888	0.4078
			Last	0.3486	0.4066	0.4070	0.3978

Table B.10. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0456	0.0550	0.0510	0.0550
			Last	0.0598	0.0532	0.0514	0.0554
0.0	0.0	0.5	First	0.2536	0.2930	0.2830	0.2930
			Last	0.3210	0.2988	0.2926	0.3038
0.0	0.5	0.5	First	0.2504	0.2910	0.2822	0.2910
			Last	0.3188	0.3024	0.2922	0.3080
0.05	0.25	0.5	First	0.2228	0.2536	0.2414	0.2536
			Last	0.2870	0.2688	0.2584	0.2710
0.0	0.3	0.5	First	0.2554	0.2870	0.2764	0.2870
			Last	0.3228	0.3020	0.2908	0.3078
0.0	0.0	1.0	First	0.6204	0.6722	0.6544	0.6722
			Last	0.7314	0.7202	0.7104	0.7278
0.0	1.0	1.0	First	0.6210	0.6736	0.6598	0.6736
			Last	0.7382	0.7266	0.7122	0.7310
0.0	0.5	1.0	First	0.6378	0.6802	0.6652	0.6802
			Last	0.7382	0.7286	0.7076	0.7362
0.5	0.5	1.0	First	0.2434	0.2820	0.2724	0.2820
			Last	0.3140	0.2936	0.2860	0.2960
0.5	1.0	1.0	First	0.2360	0.2758	0.2644	0.2758
			Last	0.3144	0.2902	0.2798	0.2942
0.1	0.5	1.0	First	0.5564	0.6024	0.5752	0.6024
			Last	0.6576	0.6464	0.6256	0.6504
0.1	0.3	0.7	First	0.3296	0.3728	0.3604	0.3728
			Last	0.4162	0.3918	0.3826	0.3986
0.2	0.5	0.8	First	0.3330	0.3736	0.3570	0.3736
			Last	0.4076	0.3872	0.3756	0.3960
0.0	0.25	0.5	First	0.2550	0.2890	0.2732	0.2890
			Last	0.3248	0.3104	0.3018	0.3114
0.0	0.1	0.8	First	0.4598	0.5170	0.5060	0.5170
			Last	0.5696	0.5484	0.5370	0.5578

Table B.11. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0478	0.0538	0.0522	0.0538
			Last	0.0582	0.0478	0.0452	0.0520
0.0	0.0	0.5	First	0.4106	0.4642	0.4446	0.4642
			Last	0.5152	0.5064	0.4910	0.5064
0.0	0.5	0.5	First	0.4224	0.4702	0.4502	0.4702
			Last	0.5126	0.4954	0.4860	0.5016
0.05	0.25	0.5	First	0.3986	0.4372	0.4164	0.4372
			Last	0.4896	0.4660	0.4456	0.4744
0.0	0.3	0.5	First	0.4520	0.4866	0.4588	0.4866
			Last	0.5452	0.5170	0.5018	0.5230
0.0	0.0	1.0	First	0.7994	0.8332	0.8162	0.8332
			Last	0.8826	0.8774	0.8668	0.8814
0.0	1.0	1.0	First	0.7806	0.8252	0.8142	0.8252
			Last	0.8698	0.8542	0.8516	0.8634
0.0	0.5	1.0	First	0.8588	0.8744	0.8412	0.8744
			Last	0.9260	0.9068	0.8808	0.9092
0.5	0.5	1.0	First	0.4130	0.4670	0.4504	0.4670
			Last	0.5054	0.4878	0.4790	0.4952
0.5	1.0	1.0	First	0.4188	0.4636	0.4476	0.4636
			Last	0.5146	0.5032	0.4888	0.5050
0.1	0.5	1.0	First	0.8080	0.8314	0.8040	0.8314
			Last	0.8830	0.8612	0.8390	0.8670
0.1	0.3	0.7	First	0.5512	0.5828	0.5574	0.5828
			Last	0.6538	0.6308	0.6054	0.6374
0.2	0.5	0.8	First	0.5546	0.5870	0.5558	0.5870
			Last	0.6636	0.6304	0.6038	0.6408
0.0	0.25	0.5	First	0.4440	0.4824	0.4568	0.4824
			Last	0.5452	0.5178	0.4924	0.5234
0.0	0.1	0.8	First	0.7052	0.7460	0.7220	0.7460
			Last	0.8054	0.7930	0.7738	0.7942

Table B.12. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0416	0.0518	0.0482	0.0518
			Last	0.0542	0.0462	0.0444	0.0480
0.0	0.0	0.5	First	0.1950	0.2276	0.2260	0.2276
			Last	0.2532	0.2386	0.2312	0.2440
0.0	0.5	0.5	First	0.1872	0.2164	0.2082	0.2164
			Last	0.2452	0.2288	0.2224	0.2316
0.05	0.25	0.5	First	0.1728	0.2058	0.1984	0.2058
			Last	0.2324	0.2138	0.2064	0.2188
0.0	0.3	0.5	First	0.1884	0.2176	0.2080	0.2176
			Last	0.2452	0.2266	0.2172	0.2340
0.0	0.0	1.0	First	0.4778	0.5294	0.5064	0.5294
			Last	0.5726	0.5536	0.5356	0.5622
0.0	1.0	1.0	First	0.4608	0.5082	0.4926	0.5082
			Last	0.5634	0.5466	0.5360	0.5502
0.0	0.5	1.0	First	0.4714	0.5148	0.5012	0.5148
			Last	0.5738	0.5524	0.5372	0.5614
0.5	0.5	1.0	First	0.1970	0.2290	0.2140	0.2290
			Last	0.2474	0.2272	0.2168	0.2346
0.5	1.0	1.0	First	0.2010	0.2266	0.2148	0.2266
			Last	0.2618	0.2430	0.2382	0.2476
0.1	0.5	1.0	First	0.4078	0.4572	0.4442	0.4572
			Last	0.5072	0.4866	0.4710	0.4946
0.1	0.3	0.7	First	0.2362	0.2748	0.2670	0.2748
			Last	0.3134	0.2946	0.2870	0.2968
0.2	0.5	0.8	First	0.2482	0.2818	0.2672	0.2818
			Last	0.3188	0.3006	0.2946	0.3050
0.0	0.25	0.5	First	0.2096	0.2294	0.2178	0.2294
			Last	0.2610	0.2378	0.2272	0.2430
0.0	0.1	0.8	First	0.3496	0.3944	0.3810	0.3944
			Last	0.4448	0.4230	0.4106	0.4244

Table B.13. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0552	0.0478	0.0488	0.0478
			Last	0.0458	0.0476	0.0446	0.0460
0.0	0.0	0.5	First	0.3312	0.3196	0.3162	0.3196
			Last	0.2804	0.2986	0.3144	0.3432
0.0	0.5	0.5	First	0.3394	0.3214	0.3130	0.3214
			Last	0.2826	0.2978	0.3114	0.3440
0.05	0.25	0.5	First	0.3066	0.2914	0.2874	0.2914
			Last	0.2560	0.2608	0.2780	0.3098
0.0	0.3	0.5	First	0.3342	0.3180	0.3172	0.3180
			Last	0.2880	0.3008	0.3174	0.3488
0.0	0.0	1.0	First	0.7544	0.7540	0.7448	0.7540
			Last	0.7110	0.7350	0.7432	0.7608
0.0	1.0	1.0	First	0.7410	0.7506	0.7452	0.7506
			Last	0.7050	0.7330	0.7490	0.7600
0.0	0.5	1.0	First	0.7738	0.7692	0.7520	0.7692
			Last	0.7380	0.7516	0.7570	0.7790
0.5	0.5	1.0	First	0.3340	0.3204	0.3168	0.3204
			Last	0.2818	0.2916	0.3086	0.3424
0.5	1.0	1.0	First	0.3256	0.3102	0.3068	0.3102
			Last	0.2768	0.2938	0.3120	0.3294
0.1	0.5	1.0	First	0.6796	0.6844	0.6688	0.6844
			Last	0.6378	0.6616	0.6726	0.6948
0.1	0.3	0.7	First	0.4136	0.3994	0.3908	0.3994
			Last	0.3598	0.3728	0.3884	0.4226
0.2	0.5	0.8	First	0.4222	0.4100	0.4018	0.4100
			Last	0.3724	0.3878	0.4052	0.4280
0.0	0.25	0.5	First	0.3436	0.3274	0.3146	0.3274
			Last	0.2896	0.3010	0.3150	0.3489
0.0	0.1	0.8	First	0.6014	0.5894	0.5784	0.5894
			Last	0.5554	0.5726	0.5866	0.6099

Table B.14. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0504	0.0452	0.0458	0.0452
			Last	0.0434	0.0402	0.0456	0.0438
0.0	0.0	0.5	First	0.5392	0.5264	0.5104	0.5264
			Last	0.4826	0.5050	0.5216	0.5466
0.0	0.5	0.5	First	0.5332	0.5258	0.5188	0.5258
			Last	0.4856	0.5050	0.5248	0.5378
0.05	0.25	0.5	First	0.5108	0.4940	0.4772	0.4940
			Last	0.4644	0.4758	0.4856	0.5238
0.0	0.3	0.5	First	0.5794	0.5578	0.5404	0.5578
			Last	0.5276	0.5380	0.5434	0.5808
0.0	0.0	1.0	First	0.8950	0.9062	0.8918	0.9062
			Last	0.8824	0.9018	0.9046	0.9154
0.0	1.0	1.0	First	0.8878	0.8946	0.8908	0.8946
			Last	0.8648	0.8886	0.8980	0.9038
0.0	0.5	1.0	First	0.9394	0.9378	0.9230	0.9378
			Last	0.9298	0.9356	0.9286	0.9442
0.5	0.5	1.0	First	0.5344	0.5268	0.5178	0.5268
			Last	0.4824	0.4986	0.5154	0.5392
0.5	1.0	1.0	First	0.5386	0.5320	0.5242	0.5320
			Last	0.4950	0.5138	0.5288	0.5432
0.1	0.5	1.0	First	0.9050	0.8986	0.8774	0.8986
			Last	0.8878	0.8906	0.8798	0.9054
0.1	0.3	0.7	First	0.6786	0.6650	0.6356	0.6650
			Last	0.6406	0.6432	0.6464	0.6818
0.2	0.5	0.8	First	0.4222	0.4100	0.4018	0.4100
			Last	0.3724	0.3878	0.4052	0.4324
0.0	0.25	0.5	First	0.3436	0.3274	0.3146	0.3274
			Last	0.2896	0.3010	0.3150	0.3479
0.0	0.1	0.8	First	0.6014	0.5894	0.5784	0.5894
			Last	0.5554	0.5726	0.5866	0.6160

Table B.15. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0542	0.0470	0.0486	0.0470
			Last	0.0462	0.0482	0.0466	0.0444
0.0	0.0	0.5	First	0.2616	0.2466	0.2444	0.2466
			Last	0.2168	0.2256	0.2416	0.2778
0.0	0.5	0.5	First	0.2636	0.2526	0.2502	0.2526
			Last	0.2212	0.2294	0.2450	0.2716
0.05	0.25	0.5	First	0.2468	0.2312	0.2296	0.2312
			Last	0.2050	0.2150	0.2278	0.2498
0.0	0.3	0.5	First	0.2616	0.2448	0.2382	0.2448
			Last	0.2212	0.2276	0.2404	0.2692
0.0	1.0	1.0	First	0.6026	0.6016	0.5914	0.6016
			Last	0.5598	0.5804	0.5968	0.6132
0.0	0.5	1.0	First	0.6022	0.5938	0.5858	0.5938
			Last	0.5526	0.5722	0.5872	0.6112
0.5	0.5	1.0	First	0.6122	0.6118	0.6032	0.6118
			Last	0.5682	0.5890	0.6072	0.6232
0.5	1.0	1.0	First	0.2552	0.2410	0.2416	0.2410
			Last	0.2156	0.2290	0.2390	0.2578
0.1	0.5	1.0	First	0.2642	0.2508	0.2482	0.2508
			Last	0.2154	0.2274	0.2432	0.2724
0.1	0.3	0.7	First	0.5372	0.5220	0.5140	0.5220
			Last	0.4842	0.5070	0.5204	0.5398
0.2	0.5	0.8	First	0.3296	0.3164	0.3110	0.3164
			Last	0.2794	0.2912	0.3050	0.3310
0.0	0.25	0.5	First	0.3334	0.3146	0.3072	0.3146
			Last	0.2846	0.2940	0.3086	0.3476
0.0	0.1	0.8	First	0.2664	0.2446	0.2394	0.2446
			Last	0.2148	0.2196	0.2358	0.2750
0.0	0.0	1.0	First	0.4620	0.4538	0.4442	0.4538
			Last	0.4126	0.4340	0.4464	0.4684

Table B.16. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0488	0.0518	0.0536	0.0518
			Last	0.0504	0.0522	0.0482	0.0506
0.0	0.0	0.5	First	0.3220	0.3602	0.3538	0.3602
			Last	0.3350	0.3526	0.3340	0.3548
0.0	0.5	0.5	First	0.3374	0.3696	0.3508	0.3696
			Last	0.3516	0.3646	0.3340	0.3604
0.05	0.25	0.5	First	0.3034	0.3222	0.3118	0.3222
			Last	0.3082	0.3182	0.2922	0.3174
0.0	0.3	0.5	First	0.3516	0.3746	0.3608	0.3746
			Last	0.3574	0.3692	0.3436	0.3710
0.0	1.0	1.0	First	0.7866	0.8376	0.8138	0.8376
			Last	0.7990	0.8256	0.8024	0.8306
0.0	0.5	1.0	First	0.7856	0.8274	0.8102	0.8274
			Last	0.7998	0.8258	0.7990	0.8270
0.5	0.5	1.0	First	0.8102	0.8436	0.8214	0.8436
			Last	0.8204	0.8370	0.8102	0.8420
0.5	1.0	1.0	First	0.3342	0.3694	0.3604	0.3694
			Last	0.3480	0.3676	0.3440	0.3628
0.1	0.5	1.0	First	0.3458	0.3710	0.3570	0.3710
			Last	0.3606	0.3694	0.3422	0.3696
0.1	0.3	0.7	First	0.7216	0.7558	0.7354	0.7558
			Last	0.7322	0.7518	0.7160	0.7548
0.2	0.5	0.8	First	0.4426	0.4782	0.4660	0.4782
			Last	0.4512	0.4712	0.4458	0.4738
0.0	0.25	0.5	First	0.4346	0.4684	0.4594	0.4684
			Last	0.4436	0.4628	0.4374	0.4662
0.0	0.1	0.8	First	0.3486	0.3832	0.3712	0.3832
			Last	0.3550	0.3714	0.3564	0.3792
0.0	0.0	1.0	First	0.6400	0.6752	0.6612	0.6752
			Last	0.6484	0.6658	0.6386	0.6738

Table B.17. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0510	0.0546	0.0534	0.0546
			Last	0.0550	0.0520	0.0478	0.0512
0.0	0.0	0.5	First	0.5446	0.5980	0.5732	0.5980
			Last	0.5598	0.5818	0.5534	0.5878
0.0	0.5	0.5	First	0.5546	0.6044	0.5726	0.6044
			Last	0.5696	0.5880	0.5544	0.5946
0.05	0.25	0.5	First	0.5438	0.5690	0.5452	0.5690
			Last	0.5528	0.5594	0.5230	0.5678
0.0	0.3	0.5	First	0.5992	0.6264	0.5976	0.6264
			Last	0.6090	0.6170	0.5794	0.6202
0.0	1.0	1.0	First	0.9298	0.9516	0.9446	0.9516
			Last	0.9368	0.9490	0.9374	0.9514
0.0	0.5	1.0	First	0.9104	0.9380	0.9352	0.9380
			Last	0.9146	0.9326	0.9272	0.9376
0.5	0.5	1.0	First	0.9588	0.9786	0.9576	0.9786
			Last	0.9632	0.9690	0.9522	0.9698
0.5	1.0	1.0	First	0.5652	0.6106	0.5888	0.6106
			Last	0.5812	0.6004	0.5710	0.6010
0.1	0.5	1.0	First	0.5508	0.5852	0.5670	0.5852
			Last	0.5600	0.5796	0.5498	0.5812
0.1	0.3	0.7	First	0.9310	0.9492	0.9192	0.9492
			Last	0.9352	0.9370	0.9176	0.9394
0.2	0.5	0.8	First	0.7172	0.7548	0.7208	0.7548
			Last	0.7330	0.7444	0.7016	0.7456
0.0	0.25	0.5	First	0.7078	0.7374	0.7008	0.7374
			Last	0.7198	0.7262	0.6858	0.7290
0.0	0.1	0.8	First	0.6028	0.6322	0.5988	0.6322
			Last	0.6120	0.6274	0.5856	0.6306
0.0	0.0	1.0	First	0.8616	0.8838	0.8630	0.8838
			Last	0.8692	0.8770	0.8514	0.8822

Table B.18. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0486	0.0530	0.0522	0.0530
			Last	0.0488	0.0486	0.0476	0.0506
0.0	0.0	0.5	First	0.2694	0.2994	0.2864	0.2994
			Last	0.2736	0.2900	0.2656	0.2948
0.0	0.5	0.5	First	0.2550	0.2782	0.2732	0.2782
			Last	0.2640	0.2744	0.2556	0.2732
0.05	0.25	0.5	First	0.2258	0.2550	0.2380	0.2550
			Last	0.2352	0.2456	0.2232	0.2418
0.0	0.3	0.5	First	0.2532	0.2846	0.2682	0.2846
			Last	0.2640	0.2754	0.2586	0.2748
0.0	1.0	1.0	First	0.6216	0.6556	0.6382	0.6556
			Last	0.6284	0.6494	0.6194	0.6552
0.0	0.5	1.0	First	0.6220	0.6636	0.6486	0.6636
			Last	0.6280	0.6522	0.6266	0.6578
0.5	0.5	1.0	First	0.6248	0.6752	0.6396	0.6752
			Last	0.6364	0.6544	0.6264	0.6584
0.5	1.0	1.0	First	0.2544	0.2792	0.2734	0.2792
			Last	0.2596	0.2734	0.2574	0.2754
0.1	0.5	1.0	First	0.2580	0.2768	0.2712	0.2768
			Last	0.2636	0.2758	0.2576	0.2746
0.1	0.3	0.7	First	0.5700	0.6080	0.5848	0.6080
			Last	0.5796	0.5992	0.5686	0.6024
0.2	0.5	0.8	First	0.3264	0.3544	0.3402	0.3544
			Last	0.3350	0.3452	0.3204	0.3474
0.0	0.25	0.5	First	0.3278	0.3518	0.3426	0.3518
			Last	0.3362	0.3512	0.3266	0.3508
0.0	0.1	0.8	First	0.2654	0.2880	0.2808	0.2880
			Last	0.2738	0.2846	0.2658	0.2832
0.0	0.0	1.0	First	0.4786	0.5208	0.5046	0.5208
			Last	0.4844	0.5050	0.4816	0.5144

Table B.19. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0518	0.0474	0.0486	0.0474
			Last	0.0604	0.0448	0.0454	0.0502
0.0	0.0	0.5	First	0.3156	0.3364	0.3348	0.3364
			Last	0.4164	0.3678	0.3678	0.3870
0.0	0.5	0.5	First	0.3338	0.3510	0.3406	0.3510
			Last	0.4266	0.3754	0.3766	0.3972
0.05	0.25	0.5	First	0.2702	0.2832	0.2792	0.2832
			Last	0.3476	0.3084	0.3116	0.3266
0.0	0.3	0.5	First	0.3264	0.3462	0.3410	0.3462
			Last	0.4130	0.3654	0.3754	0.3906
0.0	1.0	1.0	First	0.7452	0.7842	0.7668	0.7842
			Last	0.8570	0.8328	0.8294	0.8474
0.0	0.5	1.0	First	0.7378	0.7784	0.7622	0.7784
			Last	0.8422	0.8212	0.8252	0.8406
0.5	0.5	1.0	First	0.7584	0.7876	0.7748	0.7876
			Last	0.8632	0.8382	0.8296	0.8520
0.5	1.0	1.0	First	0.3150	0.3328	0.3270	0.3328
			Last	0.4140	0.3618	0.3652	0.3840
0.1	0.5	1.0	First	0.3228	0.3444	0.3366	0.3444
			Last	0.4128	0.3692	0.3710	0.3902
0.1	0.3	0.7	First	0.6900	0.7228	0.7046	0.7228
			Last	0.8076	0.7732	0.7666	0.7924
0.2	0.5	0.8	First	0.4030	0.4228	0.4138	0.4228
			Last	0.5278	0.4756	0.4762	0.4946
0.0	0.25	0.5	First	0.4064	0.4314	0.4150	0.4314
			Last	0.5042	0.4638	0.4606	0.4840
0.0	0.1	0.8	First	0.3186	0.3320	0.3272	0.3320
			Last	0.4054	0.3566	0.3612	0.3760
0.0	0.0	1.0	First	0.5830	0.6232	0.6078	0.6232
			Last	0.7098	0.6706	0.6694	0.6938

Table B.20. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0476	0.0438	0.0484	0.0438
			Last	0.0588	0.0424	0.0466	0.0470
0.0	0.0	0.5	First	0.5020	0.5300	0.5254	0.5300
			Last	0.6332	0.5838	0.5876	0.6088
0.0	0.5	0.5	First	0.5092	0.5414	0.5326	0.5414
			Last	0.6288	0.5870	0.5886	0.6092
0.05	0.25	0.5	First	0.4936	0.5128	0.4924	0.5128
			Last	0.6084	0.5512	0.5432	0.5758
0.0	0.3	0.5	First	0.5468	0.5644	0.5406	0.5644
			Last	0.6694	0.6150	0.6070	0.6384
0.0	1.0	1.0	First	0.9042	0.9250	0.9138	0.9250
			Last	0.9622	0.9536	0.9492	0.9604
0.0	0.5	1.0	First	0.8756	0.9042	0.9016	0.9044
			Last	0.9594	0.9372	0.9416	0.9440
0.5	0.5	1.0	First	0.9390	0.9460	0.9300	0.9460
			Last	0.9788	0.9686	0.9624	0.9730
0.5	1.0	1.0	First	0.5082	0.5488	0.5374	0.5488
			Last	0.6444	0.6000	0.6054	0.6230
0.1	0.5	1.0	First	0.5128	0.5510	0.5426	0.5510
			Last	0.6390	0.5966	0.5998	0.6232
0.1	0.3	0.7	First	0.9014	0.9090	0.8816	0.9092
			Last	0.9596	0.9440	0.9322	0.9524
0.2	0.5	0.8	First	0.6732	0.6860	0.6548	0.6860
			Last	0.7830	0.7332	0.7190	0.7536
0.0	0.25	0.5	First	0.6672	0.6838	0.6590	0.6838
			Last	0.7858	0.7408	0.7282	0.7578
0.0	0.1	0.8	First	0.5786	0.5936	0.5706	0.5936
			Last	0.6984	0.6420	0.6330	0.6678
0.0	0.0	1.0	First	0.8182	0.8420	0.8218	0.8420
			Last	0.9142	0.8928	0.8856	0.9038

Table B.21. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0500	0.0484	0.0506	0.0484
			Last	0.0596	0.0444	0.0494	0.0506
0.0	0.0	0.5	First	0.2408	0.2574	0.2576	0.2574
			Last	0.3110	0.2660	0.2722	0.2878
0.0	0.5	0.5	First	0.2462	0.2586	0.2568	0.2586
			Last	0.3256	0.2768	0.2842	0.2964
0.05	0.25	0.5	First	0.2100	0.2176	0.2186	0.2176
			Last	0.2786	0.2318	0.2350	0.2452
0.0	0.3	0.5	First	0.2372	0.2558	0.2552	0.2558
			Last	0.3136	0.2696	0.2744	0.2894
0.0	1.0	1.0	First	0.5810	0.6074	0.6064	0.6074
			Last	0.7054	0.6634	0.6656	0.6864
0.0	0.5	1.0	First	0.5792	0.6164	0.6034	0.6164
			Last	0.6936	0.6626	0.6604	0.6852
0.5	0.5	1.0	First	0.6002	0.6328	0.6138	0.6328
			Last	0.7178	0.6752	0.6690	0.6960
0.5	1.0	1.0	First	0.2498	0.2562	0.2538	0.2562
			Last	0.3226	0.2754	0.2706	0.2930
0.1	0.5	1.0	First	0.2408	0.2562	0.2518	0.2562
			Last	0.3148	0.2754	0.2816	0.2928
0.1	0.3	0.7	First	0.5226	0.5532	0.5386	0.5532
			Last	0.6456	0.6070	0.6060	0.6302
0.2	0.5	0.8	First	0.3106	0.3296	0.3214	0.3296
			Last	0.3948	0.3550	0.3594	0.3742
0.0	0.25	0.5	First	0.3036	0.3186	0.3156	0.3186
			Last	0.3960	0.3458	0.3450	0.3640
0.0	0.1	0.8	First	0.2564	0.2614	0.2554	0.2614
			Last	0.3290	0.2766	0.2832	0.2962
0.0	0.0	1.0	First	0.4592	0.4756	0.4656	0.4756
			Last	0.5616	0.5180	0.5120	0.5390

Table B.22. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0492	0.0516	0.0556	0.0516
			Last	0.0424	0.0512	0.0468	0.0542
0.0	0.0	0.5	First	0.3680	0.3864	0.3800	0.3864
			Last	0.3778	0.4216	0.3836	0.4152
0.0	0.5	0.5	First	0.3658	0.3868	0.3798	0.3868
			Last	0.3782	0.4164	0.3810	0.4106
0.05	0.25	0.5	First	0.3248	0.3422	0.3418	0.3422
			Last	0.3216	0.3660	0.3392	0.3638
0.0	0.3	0.5	First	0.3678	0.3860	0.3820	0.3860
			Last	0.3870	0.4356	0.3896	0.4260
0.0	1.0	1.0	First	0.8292	0.8550	0.8442	0.8550
			Last	0.8456	0.8904	0.8608	0.8814
0.0	0.5	1.0	First	0.8328	0.8568	0.8462	0.8568
			Last	0.8450	0.8896	0.8578	0.8824
0.5	0.5	1.0	First	0.8438	0.8662	0.8514	0.8662
			Last	0.8632	0.8972	0.8694	0.8952
0.5	1.0	1.0	First	0.3670	0.3924	0.3824	0.3924
			Last	0.3656	0.4130	0.3882	0.4100
0.1	0.5	1.0	First	0.3676	0.3832	0.3824	0.3832
			Last	0.3772	0.4188	0.3812	0.4158
0.1	0.3	0.7	First	0.7638	0.7884	0.7720	0.7884
			Last	0.7870	0.8252	0.7920	0.8250
0.2	0.5	0.8	First	0.4668	0.4868	0.4804	0.4868
			Last	0.4724	0.5280	0.4912	0.5246
0.0	0.25	0.5	First	0.4726	0.4944	0.4896	0.4944
			Last	0.4844	0.5388	0.4986	0.5328
0.0	0.1	0.8	First	0.3714	0.3860	0.3780	0.3860
			Last	0.3788	0.4176	0.3850	0.4134
0.0	0.0	1.0	First	0.6734	0.7034	0.6930	0.7034
			Last	0.6946	0.7470	0.7072	0.7440

Table B.23. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0472	0.0488	0.0482	0.0488
			Last	0.0436	0.0564	0.0494	0.0554
0.0	0.0	0.5	First	0.6062	0.6290	0.6168	0.6290
			Last	0.6234	0.6834	0.6306	0.6746
0.0	0.5	0.5	First	0.5984	0.6272	0.6228	0.6272
			Last	0.6162	0.6694	0.6324	0.6620
0.05	0.25	0.5	First	0.5704	0.5830	0.5688	0.5830
			Last	0.5836	0.6192	0.5720	0.6162
0.0	0.3	0.5	First	0.6410	0.6574	0.6378	0.6574
			Last	0.6594	0.6966	0.6518	0.6936
0.0	1.0	1.0	First	0.9438	0.9568	0.9502	0.9568
			Last	0.9596	0.9750	0.9646	0.9734
0.0	0.5	1.0	First	0.9318	0.9486	0.9456	0.9486
			Last	0.9382	0.9692	0.9574	0.9624
0.5	0.5	1.0	First	0.9732	0.9750	0.9660	0.9750
			Last	0.9804	0.9876	0.9734	0.9846
0.5	1.0	1.0	First	0.5982	0.6282	0.6214	0.6282
			Last	0.6158	0.6658	0.6324	0.6630
0.1	0.5	1.0	First	0.5848	0.6120	0.6044	0.6120
			Last	0.5958	0.6584	0.6188	0.6500
0.1	0.3	0.7	First	0.9444	0.9472	0.9350	0.9472
			Last	0.9524	0.9690	0.9452	0.9650
0.2	0.5	0.8	First	0.7502	0.7666	0.7440	0.7666
			Last	0.7756	0.8060	0.7648	0.8044
0.0	0.25	0.5	First	0.7538	0.7700	0.7410	0.7700
			Last	0.7734	0.8038	0.7562	0.8020
0.0	0.1	0.8	First	0.6384	0.6550	0.6318	0.6550
			Last	0.6550	0.6920	0.6436	0.6908
0.0	0.0	1.0	First	0.8916	0.9048	0.8904	0.9048
			Last	0.9174	0.9396	0.9070	0.9302

Table B.24. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0534	0.0520	0.0518	0.0520
			Last	0.0502	0.0562	0.0476	0.0544
0.0	0.0	0.5	First	0.2766	0.2902	0.2760	0.2902
			Last	0.2840	0.3130	0.2784	0.3108
0.0	0.5	0.5	First	0.2872	0.3008	0.2968	0.3008
			Last	0.2980	0.3386	0.3004	0.3352
0.05	0.25	0.5	First	0.2522	0.2674	0.2584	0.2674
			Last	0.2416	0.2772	0.2554	0.2760
0.0	0.3	0.5	First	0.2752	0.2994	0.2948	0.2994
			Last	0.2794	0.3260	0.2818	0.3172
0.0	1.0	1.0	First	0.6640	0.6980	0.6838	0.6980
			Last	0.6950	0.7464	0.7032	0.7364
0.0	0.5	1.0	First	0.6486	0.6818	0.6732	0.6818
			Last	0.6746	0.7230	0.6884	0.7200
0.5	0.5	1.0	First	0.6784	0.7008	0.6868	0.7008
			Last	0.6970	0.7414	0.7026	0.7380
0.5	1.0	1.0	First	0.2824	0.2956	0.2934	0.2956
			Last	0.2798	0.3308	0.2960	0.3210
0.1	0.5	1.0	First	0.2706	0.2832	0.2832	0.2832
			Last	0.2746	0.3124	0.2870	0.3042
0.1	0.3	0.7	First	0.5998	0.6270	0.6178	0.6270
			Last	0.6172	0.6662	0.6242	0.6616
0.2	0.5	0.8	First	0.3512	0.3652	0.3604	0.3652
			Last	0.3526	0.4000	0.3588	0.3968
0.0	0.25	0.5	First	0.3600	0.3788	0.3776	0.3788
			Last	0.3682	0.4090	0.3670	0.4058
0.0	0.1	0.8	First	0.2846	0.2970	0.2930	0.2970
			Last	0.2918	0.3296	0.3020	0.3222
0.0	0.0	1.0	First	0.5096	0.5350	0.5272	0.5350
			Last	0.5218	0.5814	0.5354	0.5746

Table B.25. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0584	0.0562	0.0520	0.0562
			Last	0.0528	0.0442	0.0556	0.0520
0.0	0.0	0.5	First	0.4118	0.4506	0.4162	0.4506
			Last	0.4208	0.4074	0.4352	0.4416
0.0	0.5	0.5	First	0.4084	0.4490	0.4210	0.4490
			Last	0.4090	0.4002	0.4292	0.4354
0.05	0.25	0.5	First	0.3666	0.4014	0.3752	0.4014
			Last	0.3768	0.3648	0.3892	0.3960
0.0	0.3	0.5	First	0.4310	0.4570	0.4268	0.4570
			Last	0.4330	0.4142	0.4358	0.4500
0.0	1.0	1.0	First	0.8710	0.9146	0.8868	0.9146
			Last	0.8844	0.8904	0.9002	0.9066
0.0	0.5	1.0	First	0.8740	0.9154	0.8866	0.9154
			Last	0.8876	0.8848	0.8980	0.9080
0.5	0.5	1.0	First	0.8920	0.9244	0.8988	0.9244
			Last	0.9052	0.9056	0.9094	0.9214
0.5	1.0	1.0	First	0.4230	0.4584	0.4296	0.4584
			Last	0.4372	0.4200	0.4458	0.4524
0.1	0.5	1.0	First	0.4192	0.4526	0.4222	0.4526
			Last	0.4260	0.4060	0.4312	0.4424
0.1	0.3	0.7	First	0.8244	0.8570	0.8306	0.8570
			Last	0.8396	0.8374	0.8462	0.8576
0.2	0.5	0.8	First	0.5408	0.5802	0.5462	0.5802
			Last	0.5574	0.5392	0.5588	0.5712
0.0	0.25	0.5	First	0.5400	0.5804	0.5444	0.5804
			Last	0.5420	0.5284	0.5548	0.5702
0.0	0.1	0.8	First	0.4234	0.4540	0.4256	0.4540
			Last	0.4324	0.4168	0.4334	0.4486
0.0	0.0	1.0	First	0.7368	0.7782	0.7516	0.7782
			Last	0.7522	0.7472	0.7632	0.7768

Table B.26. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0490	0.0514	0.0480	0.0514
			Last	0.0454	0.0404	0.0486	0.0462
0.0	0.0	0.5	First	0.6620	0.7000	0.6656	0.7000
			Last	0.6776	0.6666	0.6822	0.6974
0.0	0.5	0.5	First	0.6668	0.7072	0.6772	0.7072
			Last	0.6696	0.6694	0.6894	0.6998
0.05	0.25	0.5	First	0.6544	0.6798	0.6442	0.6798
			Last	0.6654	0.6442	0.6600	0.6788
0.0	0.3	0.5	First	0.7122	0.7394	0.6950	0.7394
			Last	0.7282	0.7062	0.7120	0.7330
0.0	1.0	1.0	First	0.9742	0.9906	0.9778	0.9906
			Last	0.9788	0.9816	0.9838	0.9866
0.0	0.5	1.0	First	0.9614	0.9796	0.9674	0.9796
			Last	0.9650	0.9706	0.9740	0.9766
0.5	0.5	1.0	First	0.9870	0.9902	0.9846	0.9902
			Last	0.9886	0.9872	0.9856	0.9900
0.5	1.0	1.0	First	0.6568	0.7022	0.6676	0.7022
			Last	0.6714	0.6658	0.6902	0.6988
0.1	0.5	1.0	First	0.6638	0.6990	0.6712	0.6990
			Last	0.6682	0.6628	0.6878	0.6964
0.1	0.3	0.7	First	0.9678	0.9830	0.9644	0.9830
			Last	0.9734	0.9676	0.9680	0.9752
0.2	0.5	0.8	First	0.8158	0.8478	0.8026	0.8478
			Last	0.8354	0.8186	0.8196	0.8418
0.0	0.25	0.5	First	0.8292	0.8528	0.8126	0.8528
			Last	0.8358	0.8270	0.8346	0.8480
0.0	0.1	0.8	First	0.7070	0.7320	0.6874	0.7320
			Last	0.7174	0.6936	0.6984	0.7284
0.0	0.0	1.0	First	0.9304	0.9480	0.9302	0.9480
			Last	0.9378	0.9350	0.9372	0.9468

Table B.27. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo
0.0	0.0	0.0	First	0.0508	0.0572	0.0518	0.0572
			Last	0.0488	0.0410	0.0488	0.0494
0.0	0.0	0.5	First	0.3094	0.3370	0.3132	0.3370
			Last	0.3116	0.2946	0.3216	0.3296
0.0	0.5	0.5	First	0.3076	0.3310	0.3058	0.3310
			Last	0.3126	0.2926	0.3198	0.3224
0.05	0.25	0.5	First	0.2718	0.2926	0.2686	0.2926
			Last	0.2806	0.2616	0.2868	0.2874
0.0	0.3	0.5	First	0.3352	0.3616	0.3318	0.3616
			Last	0.3366	0.3182	0.3414	0.3468
0.0	1.0	1.0	First	0.7302	0.7808	0.7378	0.7808
			Last	0.7504	0.7474	0.7626	0.7734
0.0	0.5	1.0	First	0.7416	0.7794	0.7548	0.7794
			Last	0.7514	0.7490	0.7702	0.7762
0.5	0.5	1.0	First	0.7394	0.7740	0.7436	0.7740
			Last	0.7522	0.7452	0.7600	0.7730
0.5	1.0	1.0	First	0.3146	0.3438	0.3178	0.3438
			Last	0.3288	0.3124	0.3286	0.3360
0.1	0.5	1.0	First	0.3100	0.3392	0.3154	0.3392
			Last	0.3172	0.3040	0.3312	0.3308
0.1	0.3	0.7	First	0.6606	0.7034	0.6716	0.7034
			Last	0.6722	0.6646	0.6844	0.6956
0.2	0.5	0.8	First	0.4158	0.4504	0.4174	0.4504
			Last	0.4168	0.3996	0.4218	0.4400
0.0	0.25	0.5	First	0.3966	0.4318	0.4020	0.4318
			Last	0.4092	0.3966	0.4216	0.4272
0.0	0.1	0.8	First	0.3214	0.3514	0.3262	0.3514
			Last	0.3224	0.3058	0.3290	0.3350
0.0	0.0	1.0	First	0.5812	0.6154	0.5852	0.6154
			Last	0.5900	0.5754	0.6008	0.6098

Table B.28. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0518	0.0472	0.0448	0.0472
				Last	0.0370	0.0504	0.0464	0.0472
0	0.1	0.2	0.3	First	0.1416	0.1440	0.1442	0.1440
				Last	0.1194	0.1538	0.1396	0.1446
0	0	0.25	0.25	First	0.1448	0.1504	0.1446	0.1504
				Last	0.1222	0.1580	0.1410	0.1496
0	0.125	0.25	0.25	First	0.1218	0.1288	0.1286	0.1288
				Last	0.1002	0.1338	0.1224	0.1274
0	0	0	0.5	First	0.2370	0.2362	0.2302	0.2362
				Last	0.1960	0.2398	0.2224	0.2290
0.05	0.1	0.3	0.5	First	0.2382	0.2446	0.2370	0.2446
				Last	0.2010	0.2522	0.2286	0.2444
0	0	0.5	0.5	First	0.3180	0.3308	0.3142	0.3308
				Last	0.2744	0.3362	0.3006	0.3274
0	0.25	0.5	0.5	First	0.2544	0.2648	0.2574	0.2648
				Last	0.2284	0.2790	0.2532	0.2650
0	0.5	0.5	1	First	0.5232	0.5496	0.5508	0.5496
				Last	0.4782	0.5650	0.5440	0.5524
0	0.25	0.25	0.5	First	0.2202	0.2324	0.2274	0.2324
				Last	0.1922	0.2334	0.2174	0.2248
0	0.25	0.25	0.25	First	0.1078	0.1130	0.1126	0.1130
				Last	0.0904	0.1136	0.1070	0.1086
0.1	0.2	0.6	1	First	0.5646	0.5904	0.5704	0.5904
				Last	0.5208	0.6018	0.5642	0.5918
0.25	0.25	0.5	0.5	First	0.1412	0.1464	0.1410	0.1464
				Last	0.1168	0.1514	0.1348	0.1432
0	0.1	0.3	0.7	First	0.3844	0.3968	0.3852	0.3968
				Last	0.3496	0.4098	0.3782	0.4000
0	0.05	0.15	0.35	First	0.1694	0.1702	0.1678	0.1702
				Last	0.1418	0.1786	0.1628	0.1698
0	0.15	0.2	0.5	First	0.2188	0.2352	0.2296	0.2352
				Last	0.1918	0.2414	0.2232	0.2318
0	0	0.1	0.6	First	0.3070	0.3100	0.2994	0.3100
				Last	0.2668	0.3132	0.2918	0.3032
0	0	0.05	0.3	First	0.1426	0.1424	0.1388	0.1424
				Last	0.1188	0.1430	0.1332	0.1386

Table B.29. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0522	0.0532	0.0558	0.0532
				Last	0.0422	0.0536	0.0510	0.0528
0	0.1	0.2	0.3	First	0.2530	0.2526	0.2476	0.2526
				Last	0.2228	0.2648	0.2422	0.2536
0	0	0.25	0.25	First	0.2374	0.2444	0.2364	0.2444
				Last	0.2056	0.2520	0.2252	0.2400
0	0.125	0.25	0.25	First	0.2072	0.2126	0.2034	0.2126
				Last	0.1778	0.2196	0.1968	0.2094
0	0	0	0.5	First	0.3538	0.3654	0.3560	0.3654
				Last	0.3058	0.3740	0.3508	0.3612
0.05	0.1	0.3	0.5	First	0.4108	0.4254	0.4092	0.4254
				Last	0.3716	0.4338	0.4028	0.4244
0	0	0.5	0.5	First	0.5056	0.5246	0.5002	0.5246
				Last	0.4646	0.5434	0.4914	0.5316
0	0.25	0.5	0.5	First	0.4440	0.4576	0.4418	0.4576
				Last	0.4090	0.4730	0.4346	0.4624
0	0.5	0.5	1	First	0.7618	0.7688	0.7546	0.7688
				Last	0.7326	0.7808	0.7474	0.7732
0	0.25	0.25	0.5	First	0.3686	0.3808	0.3764	0.3808
				Last	0.3316	0.3898	0.3644	0.3792
0	0.25	0.25	0.25	First	0.1638	0.1692	0.1670	0.1692
				Last	0.1386	0.1752	0.1616	0.1656
0.1	0.2	0.6	1	First	0.8048	0.7994	0.7698	0.7994
				Last	0.7772	0.8116	0.7674	0.8030
0.25	0.25	0.5	0.5	First	0.2260	0.2362	0.2246	0.2362
				Last	0.1962	0.2486	0.2208	0.2384
0	0.1	0.3	0.7	First	0.6414	0.6394	0.6098	0.6394
				Last	0.5924	0.6542	0.6028	0.6414
0	0.05	0.15	0.35	First	0.2684	0.2738	0.2624	0.2738
				Last	0.2344	0.2854	0.2570	0.2756
0	0.15	0.2	0.5	First	0.4106	0.4128	0.4008	0.4128
				Last	0.3652	0.4308	0.3938	0.4162
0	0	0.1	0.6	First	0.4930	0.4952	0.4782	0.4952
				Last	0.4378	0.5060	0.4724	0.4952
0	0	0.05	0.3	First	0.2162	0.2130	0.2150	0.2130
				Last	0.1828	0.2250	0.2072	0.2104

Table B.30. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0548	0.0582	0.0588	0.0582
				Last	0.0440	0.0570	0.0508	0.0542
0	0.1	0.2	0.3	First	0.1116	0.1168	0.1200	0.1168
				Last	0.0956	0.1270	0.1180	0.1224
0	0	0.25	0.25	First	0.1166	0.1232	0.1186	0.1232
				Last	0.0984	0.1280	0.1146	0.1222
0	0.125	0.25	0.25	First	0.1042	0.1072	0.1060	0.1072
				Last	0.0858	0.1102	0.0974	0.1026
0	0	0	0.5	First	0.1794	0.1780	0.1744	0.1780
				Last	0.1500	0.1852	0.1686	0.1770
0.05	0.1	0.3	0.5	First	0.1838	0.1890	0.1760	0.1890
				Last	0.1570	0.1970	0.1764	0.1896
0	0	0.5	0.5	First	0.2442	0.2510	0.2416	0.2510
				Last	0.2060	0.2538	0.2316	0.2468
0	0.25	0.5	0.5	First	0.1980	0.2084	0.2018	0.2084
				Last	0.1688	0.2184	0.1968	0.2052
0	0.5	0.5	1	First	0.4050	0.4176	0.4138	0.4176
				Last	0.3640	0.4320	0.4100	0.4168
0	0.25	0.25	0.5	First	0.1694	0.1722	0.1720	0.1722
				Last	0.1424	0.1826	0.1650	0.1718
0	0.25	0.25	0.25	First	0.0976	0.1016	0.1018	0.1016
				Last	0.0824	0.1048	0.0992	0.0998
0.1	0.2	0.6	1	First	0.4352	0.4472	0.4310	0.4472
				Last	0.3910	0.4548	0.4214	0.4418
0.25	0.25	0.5	0.5	First	0.1244	0.1264	0.1194	0.1264
				Last	0.1030	0.1300	0.1180	0.1246
0	0.1	0.3	0.7	First	0.2968	0.3028	0.2962	0.3028
				Last	0.2608	0.3114	0.2876	0.3012
0	0.05	0.15	0.35	First	0.1416	0.1394	0.1332	0.1394
				Last	0.1180	0.1468	0.1300	0.1382
0	0.15	0.2	0.5	First	0.1838	0.1922	0.1888	0.1922
				Last	0.1600	0.1950	0.1818	0.1866
0	0	0.1	0.6	First	0.2354	0.2404	0.2356	0.2404
				Last	0.2028	0.2470	0.2318	0.2366
0	0	0.05	0.3	First	0.1192	0.1192	0.1152	0.1192
				Last	0.0998	0.1236	0.1108	0.1174

Table B.31. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0548	0.0582	0.0588	0.0582
				Last	0.0440	0.0570	0.0508	0.0542
0	0.1	0.2	0.3	First	0.1116	0.1168	0.1200	0.1168
				Last	0.0956	0.1270	0.1180	0.1324
0	0	0.25	0.25	First	0.1166	0.1232	0.1186	0.1232
				Last	0.0984	0.1280	0.1146	0.1322
0	0.125	0.25	0.25	First	0.1042	0.1072	0.1060	0.1072
				Last	0.0858	0.1102	0.0974	0.1126
0	0	0	0.5	First	0.1794	0.1780	0.1744	0.1780
				Last	0.1500	0.1852	0.1686	0.1870
0.05	0.1	0.3	0.5	First	0.1838	0.1890	0.1760	0.1890
				Last	0.1570	0.1970	0.1764	0.2096
0	0	0.5	0.5	First	0.2442	0.2510	0.2416	0.2510
				Last	0.2060	0.2538	0.2316	0.2668
0	0.25	0.5	0.5	First	0.1980	0.2084	0.2018	0.2084
				Last	0.1688	0.2184	0.1968	0.2252
0	0.5	0.5	1	First	0.4050	0.4176	0.4138	0.4176
				Last	0.3640	0.4320	0.4100	0.4468
0	0.25	0.25	0.5	First	0.1694	0.1722	0.1720	0.1722
				Last	0.1424	0.1826	0.1650	0.1918
0	0.25	0.25	0.25	First	0.0976	0.1016	0.1018	0.1016
				Last	0.0824	0.1048	0.0992	0.1098
0.1	0.2	0.6	1	First	0.4352	0.4472	0.4310	0.4472
				Last	0.3910	0.4548	0.4214	0.4618
0.25	0.25	0.5	0.5	First	0.1244	0.1264	0.1194	0.1264
				Last	0.1030	0.1300	0.1180	0.1346
0	0.1	0.3	0.7	First	0.2968	0.3028	0.2962	0.3028
				Last	0.2608	0.3114	0.2876	0.3212
0	0.05	0.15	0.35	First	0.1416	0.1394	0.1332	0.1394
				Last	0.1180	0.1468	0.1300	0.1482
0	0.15	0.2	0.5	First	0.1838	0.1922	0.1888	0.1922
				Last	0.1600	0.1950	0.1818	0.1966
0	0	0.1	0.6	First	0.2354	0.2404	0.2356	0.2404
				Last	0.2028	0.2470	0.2318	0.2506
0	0	0.05	0.3	First	0.1192	0.1192	0.1152	0.1192
				Last	0.0998	0.1236	0.1108	0.1324

Table B.32. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0524	0.0508	0.0514	0.0508
				Last	0.0424	0.0514	0.0510	0.0510
0	0.1	0.2	0.3	First	0.2966	0.3072	0.2952	0.3072
				Last	0.2650	0.3080	0.2940	0.3082
0	0	0.25	0.25	First	0.2820	0.3020	0.2908	0.3020
				Last	0.2538	0.3046	0.2878	0.3052
0	0.125	0.25	0.25	First	0.2518	0.2582	0.2424	0.2582
				Last	0.2252	0.2588	0.2438	0.2614
0	0	0	0.5	First	0.4062	0.4418	0.4416	0.4418
				Last	0.3728	0.4422	0.4410	0.4472
0.05	0.1	0.3	0.5	First	0.5022	0.5190	0.4902	0.5190
				Last	0.4646	0.5190	0.4874	0.5194
0	0	0.5	0.5	First	0.6162	0.6550	0.6268	0.6550
				Last	0.5874	0.6560	0.6216	0.6600
0	0.25	0.5	0.5	First	0.5436	0.5640	0.5424	0.5640
				Last	0.5130	0.5646	0.5378	0.5738
0	0.5	0.5	1	First	0.8686	0.8806	0.8626	0.8806
				Last	0.8484	0.8812	0.8616	0.8816
0	0.25	0.25	0.5	First	0.4734	0.4858	0.4800	0.4858
				Last	0.4400	0.4884	0.4742	0.4918
0	0.25	0.25	0.25	First	0.2116	0.2244	0.2168	0.2244
				Last	0.1894	0.2258	0.2160	0.2358
0.1	0.2	0.6	1	First	0.9016	0.9084	0.8856	0.9084
				Last	0.8862	0.9088	0.8844	0.9096
0.25	0.25	0.5	0.5	First	0.2842	0.3080	0.2922	0.3080
				Last	0.2568	0.3106	0.2898	0.3108
0	0.1	0.3	0.7	First	0.7494	0.7604	0.7340	0.7604
				Last	0.7194	0.7616	0.7274	0.7636
0	0.05	0.15	0.35	First	0.3360	0.3496	0.3378	0.3496
				Last	0.3040	0.3512	0.3370	0.3524
0	0.15	0.2	0.5	First	0.4896	0.5086	0.4968	0.5086
				Last	0.4564	0.5114	0.4946	0.5194
0	0	0.1	0.6	First	0.5780	0.6078	0.5938	0.6078
				Last	0.5448	0.6070	0.5910	0.6114
0	0	0.05	0.3	First	0.2578	0.2672	0.2604	0.2672
				Last	0.2292	0.2672	0.2610	0.2676

Table B.33. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0538	0.0520	0.0558	0.0520
				Last	0.0450	0.0542	0.0552	0.0528
0	0.1	0.2	0.3	First	0.1348	0.1426	0.1376	0.1426
				Last	0.1174	0.1448	0.1382	0.1540
0	0	0.25	0.25	First	0.1296	0.1386	0.1356	0.1386
				Last	0.1110	0.1400	0.1362	0.1496
0	0.125	0.25	0.25	First	0.1200	0.1312	0.1268	0.1312
				Last	0.1018	0.1314	0.1278	0.1408
0	0	0	0.5	First	0.2092	0.2240	0.2246	0.2240
				Last	0.1862	0.2268	0.2228	0.2354
0.05	0.1	0.3	0.5	First	0.2198	0.2338	0.2292	0.2338
				Last	0.1930	0.2358	0.2296	0.2376
0	0	0.5	0.5	First	0.2920	0.3104	0.2958	0.3104
				Last	0.2640	0.3130	0.2954	0.3251
0	0.25	0.5	0.5	First	0.2426	0.2578	0.2412	0.2578
				Last	0.2206	0.2594	0.2420	0.2688
0	0.5	0.5	1	First	0.4832	0.5142	0.5100	0.5142
				Last	0.4460	0.5118	0.5062	0.5240
0	0.25	0.25	0.5	First	0.2108	0.2192	0.2156	0.2192
				Last	0.1874	0.2190	0.2126	0.2214
0	0.25	0.25	0.25	First	0.1112	0.1178	0.1188	0.1178
				Last	0.0962	0.1190	0.1162	0.1212
0.1	0.2	0.6	1	First	0.5246	0.5484	0.5310	0.5484
				Last	0.4844	0.5500	0.5280	0.5522
0.25	0.25	0.5	0.5	First	0.1362	0.1412	0.1364	0.1412
				Last	0.1184	0.1422	0.1358	0.1438
0	0.1	0.3	0.7	First	0.3488	0.3684	0.3634	0.3684
				Last	0.3164	0.3702	0.3584	0.3754
0	0.05	0.15	0.35	First	0.1554	0.1644	0.1630	0.1644
				Last	0.1382	0.1678	0.1630	0.1768
0	0.15	0.2	0.5	First	0.2040	0.2146	0.2148	0.2146
				Last	0.1780	0.2156	0.2130	0.2184
0	0	0.1	0.6	First	0.2752	0.2912	0.2874	0.2912
				Last	0.2462	0.2940	0.2844	0.2970
0	0	0.05	0.3	First	0.1266	0.1330	0.1370	0.1330
				Last	0.1112	0.1348	0.1354	0.1440

Table B.34. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0504	0.0500	0.0512	0.0500
				Last	0.0560	0.0458	0.0506	0.0510
0	0.1	0.2	0.3	First	0.1934	0.1952	0.1848	0.1952
				Last	0.2184	0.1882	0.1850	0.1980
0	0	0.25	0.25	First	0.1920	0.1982	0.1920	0.1982
				Last	0.2162	0.1942	0.1918	0.2068
0	0.125	0.25	0.25	First	0.1566	0.1630	0.1538	0.1630
				Last	0.1770	0.1560	0.1540	0.1634
0	0	0	0.5	First	0.3098	0.3242	0.3254	0.3242
				Last	0.3464	0.3182	0.3228	0.3330
0.05	0.1	0.3	0.5	First	0.3188	0.3344	0.3240	0.3344
				Last	0.3514	0.3276	0.3266	0.3394
0	0	0.5	0.5	First	0.4586	0.4864	0.4658	0.4864
				Last	0.4972	0.4800	0.4650	0.4970
0	0.25	0.5	0.5	First	0.3762	0.4026	0.3922	0.4026
				Last	0.4102	0.3960	0.3938	0.4086
0	0.5	0.5	1	First	0.7364	0.7624	0.7616	0.7624
				Last	0.7862	0.7578	0.7604	0.7762
0	0.25	0.25	0.5	First	0.3094	0.3306	0.3262	0.3306
				Last	0.3430	0.3248	0.3304	0.3376
0	0.25	0.25	0.25	First	0.1358	0.1430	0.1442	0.1430
				Last	0.1518	0.1388	0.1452	0.1450
0.1	0.2	0.6	1	First	0.7672	0.7906	0.7726	0.7906
				Last	0.8194	0.7902	0.7754	0.8012
0.25	0.25	0.5	0.5	First	0.2000	0.2056	0.1916	0.2056
				Last	0.2224	0.1992	0.1932	0.2084
0	0.1	0.3	0.7	First	0.5512	0.5736	0.5618	0.5736
				Last	0.5938	0.5676	0.5654	0.5902
0	0.05	0.15	0.35	First	0.2290	0.2340	0.2296	0.2340
				Last	0.2524	0.2270	0.2288	0.2372
0	0.15	0.2	0.5	First	0.3192	0.3308	0.3274	0.3308
				Last	0.3508	0.3244	0.3272	0.3394
0	0	0.1	0.6	First	0.4362	0.4486	0.4368	0.4486
				Last	0.4678	0.4416	0.4388	0.4584
0	0	0.05	0.3	First	0.1874	0.1930	0.1922	0.1930
				Last	0.2086	0.1858	0.1912	0.1940

Table B.35. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0504	0.0506	0.0488	0.0506
				Last	0.0584	0.0488	0.0470	0.0500
0	0.1	0.2	0.3	First	0.3502	0.3556	0.3416	0.3556
				Last	0.3808	0.3534	0.3436	0.3682
0	0	0.25	0.25	First	0.3382	0.3570	0.3364	0.3570
				Last	0.3704	0.3498	0.3404	0.3682
0	0.125	0.25	0.25	First	0.2630	0.2698	0.2576	0.2698
				Last	0.2852	0.2634	0.2576	0.2740
0	0	0	0.5	First	0.5026	0.5268	0.5222	0.5268
				Last	0.5450	0.5218	0.5226	0.5370
0.05	0.1	0.3	0.5	First	0.5930	0.6046	0.5800	0.6046
				Last	0.6282	0.5984	0.5804	0.6140
0	0	0.5	0.5	First	0.7158	0.7490	0.7234	0.7490
				Last	0.7704	0.7494	0.7308	0.7648
0	0.25	0.5	0.5	First	0.6374	0.6656	0.6414	0.6656
				Last	0.6788	0.6612	0.6468	0.6770
0	0.5	0.5	1	First	0.9302	0.9400	0.9314	0.9400
				Last	0.9534	0.9400	0.9346	0.9476
0	0.25	0.25	0.5	First	0.5502	0.5622	0.5486	0.5622
				Last	0.5832	0.5586	0.5508	0.5762
0	0.25	0.25	0.25	First	0.2312	0.2468	0.2492	0.2468
				Last	0.2570	0.2414	0.2516	0.2558
0.1	0.2	0.6	1	First	0.9540	0.9562	0.9440	0.9562
				Last	0.9654	0.9566	0.9458	0.9636
0.25	0.25	0.5	0.5	First	0.3320	0.3496	0.3260	0.3496
				Last	0.3596	0.3430	0.3278	0.3536
0	0.1	0.3	0.7	First	0.8296	0.8348	0.8118	0.8348
				Last	0.8538	0.8330	0.8130	0.8432
0	0.05	0.15	0.35	First	0.4030	0.4222	0.4068	0.4222
				Last	0.4424	0.4168	0.4070	0.4272
0	0.15	0.2	0.5	First	0.5866	0.6000	0.5750	0.6000
				Last	0.6228	0.5966	0.5804	0.6104
0	0	0.1	0.6	First	0.6816	0.6948	0.6746	0.6948
				Last	0.7202	0.6928	0.6816	0.7082
0	0	0.05	0.3	First	0.3122	0.3220	0.3144	0.3220
				Last	0.3502	0.3142	0.3194	0.3312

Table B.36. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0558	0.0510	0.0492	0.0510
				Last	0.0624	0.0484	0.0492	0.0510
0	0.1	0.2	0.3	First	0.1476	0.1522	0.1470	0.1522
				Last	0.1664	0.1476	0.1460	0.1602
0	0	0.25	0.25	First	0.1554	0.1600	0.1528	0.1600
				Last	0.1756	0.1568	0.1532	0.1642
0	0.125	0.25	0.25	First	0.1276	0.1346	0.1334	0.1346
				Last	0.1428	0.1280	0.1324	0.1330
0	0	0	0.5	First	0.2452	0.2552	0.2512	0.2552
				Last	0.2734	0.2508	0.2536	0.2622
0.05	0.1	0.3	0.5	First	0.2568	0.2692	0.2614	0.2692
				Last	0.2834	0.2628	0.2602	0.2724
0	0	0.5	0.5	First	0.3542	0.3750	0.3518	0.3750
				Last	0.3894	0.3676	0.3550	0.3848
0	0.25	0.5	0.5	First	0.2810	0.2970	0.2852	0.2970
				Last	0.3106	0.2904	0.2882	0.3012
0	0.5	0.5	1	First	0.5834	0.6086	0.6036	0.6086
				Last	0.6216	0.6036	0.6050	0.6160
0	0.25	0.25	0.5	First	0.2450	0.2482	0.2470	0.2482
				Last	0.2736	0.2430	0.2468	0.2538
0	0.25	0.25	0.25	First	0.1166	0.1208	0.1212	0.1208
				Last	0.1316	0.1148	0.1198	0.1234
0.1	0.2	0.6	1	First	0.6068	0.6282	0.6084	0.6282
				Last	0.6502	0.6238	0.6116	0.6460
0.25	0.25	0.5	0.5	First	0.1616	0.1658	0.1636	0.1658
				Last	0.1850	0.1606	0.1654	0.1742
0	0.1	0.3	0.7	First	0.4106	0.4292	0.4198	0.4292
				Last	0.4462	0.4234	0.4224	0.4420
0	0.05	0.15	0.35	First	0.1852	0.1906	0.1884	0.1906
				Last	0.2050	0.1858	0.1882	0.1960
0	0.15	0.2	0.5	First	0.2566	0.2610	0.2546	0.2610
				Last	0.2832	0.2554	0.2592	0.2702
0	0	0.1	0.6	First	0.3186	0.3266	0.3198	0.3266
				Last	0.3492	0.3202	0.3210	0.3356
0	0	0.05	0.3	First	0.1468	0.1522	0.1512	0.1522
				Last	0.1670	0.1464	0.1528	0.1550

Table B.37. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0524	0.0508	0.0540	0.0508
				Last	0.0490	0.0480	0.0540	0.0516
0	0.1	0.2	0.3	First	0.1738	0.1820	0.1812	0.1820
				Last	0.1704	0.1802	0.1938	0.1916
0	0	0.25	0.25	First	0.1792	0.1846	0.1768	0.1846
				Last	0.1714	0.1774	0.1930	0.1874
0	0.125	0.25	0.25	First	0.1368	0.1494	0.1532	0.1494
				Last	0.1374	0.1472	0.1652	0.1568
0	0	0	0.5	First	0.2942	0.2992	0.2936	0.2992
				Last	0.2894	0.3004	0.3218	0.3144
0.05	0.1	0.3	0.5	First	0.2938	0.3076	0.3066	0.3076
				Last	0.2972	0.3060	0.3252	0.3248
0	0	0.5	0.5	First	0.4128	0.4356	0.4222	0.4356
				Last	0.4162	0.4332	0.4372	0.4566
0	0.25	0.5	0.5	First	0.3370	0.3484	0.3472	0.3484
				Last	0.3430	0.3624	0.3782	0.3766
0	0.5	0.5	1	First	0.6834	0.7076	0.7048	0.7076
				Last	0.6936	0.7186	0.7398	0.7372
0	0.25	0.25	0.5	First	0.2858	0.2904	0.2918	0.2904
				Last	0.2774	0.2882	0.3056	0.3014
0	0.25	0.25	0.25	First	0.1282	0.1304	0.1334	0.1304
				Last	0.1200	0.1232	0.1396	0.1346
0.1	0.2	0.6	1	First	0.7250	0.7444	0.7262	0.7444
				Last	0.7290	0.7512	0.7760	0.7698
0.25	0.25	0.5	0.5	First	0.1788	0.1814	0.1740	0.1814
				Last	0.1664	0.1706	0.176	0.1848
0	0.1	0.3	0.7	First	0.5176	0.5324	0.5140	0.5324
				Last	0.5190	0.5386	0.5652	0.5600
0	0.05	0.15	0.35	First	0.2048	0.2100	0.2068	0.2100
				Last	0.2006	0.2090	0.2278	0.2240
0	0.15	0.2	0.5	First	0.3032	0.3108	0.3046	0.3108
				Last	0.2950	0.3074	0.3290	0.3230
0	0	0.1	0.6	First	0.3980	0.4108	0.4036	0.4108
				Last	0.3898	0.4060	0.4310	0.4300
0	0	0.05	0.3	First	0.1764	0.1786	0.1760	0.1786
				Last	0.1696	0.1772	0.1914	0.1878

Table B.38. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0502	0.0510	0.0498	0.0510
				Last	0.0464	0.0466	0.0534	0.0496
0	0.1	0.2	0.3	First	0.3294	0.3372	0.3220	0.3372
				Last	0.3214	0.3320	0.3544	0.3486
0	0	0.25	0.25	First	0.3078	0.3166	0.3028	0.3166
				Last	0.3078	0.3210	0.3402	0.3392
0	0.125	0.25	0.25	First	0.2458	0.2474	0.2438	0.2474
				Last	0.2420	0.2466	0.2902	0.2594
0	0	0	0.5	First	0.4848	0.4946	0.4836	0.4946
				Last	0.4752	0.4950	0.5170	0.5164
0.05	0.1	0.3	0.5	First	0.5404	0.5416	0.5206	0.5416
				Last	0.5460	0.5534	0.5778	0.5750
0	0	0.5	0.5	First	0.6718	0.6914	0.6664	0.6914
				Last	0.6822	0.7056	0.7242	0.7202
0	0.25	0.5	0.5	First	0.5934	0.6074	0.5816	0.6074
				Last	0.6094	0.6218	0.6430	0.6404
0	0.5	0.5	1	First	0.9028	0.9044	0.8978	0.9044
				Last	0.9132	0.9178	0.9328	0.9244
0	0.25	0.25	0.5	First	0.5058	0.5190	0.5100	0.5190
				Last	0.5134	0.5232	0.5506	0.5452
0	0.25	0.25	0.25	First	0.2032	0.2158	0.2126	0.2158
				Last	0.2072	0.2146	0.2350	0.2296
0.1	0.2	0.6	1	First	0.9334	0.9342	0.9156	0.9342
				Last	0.9402	0.9388	0.9464	0.9436
0.25	0.25	0.5	0.5	First	0.3160	0.3232	0.3082	0.3232
				Last	0.3112	0.3250	0.3474	0.3402
0	0.1	0.3	0.7	First	0.7898	0.7812	0.7558	0.7812
				Last	0.7972	0.7960	0.8182	0.8116
0	0.05	0.15	0.35	First	0.3722	0.3806	0.3686	0.3806
				Last	0.3750	0.3778	0.3968	0.3948
0	0.15	0.2	0.5	First	0.5350	0.5346	0.5166	0.5346
				Last	0.5412	0.5470	0.5686	0.5664
0	0	0.1	0.6	First	0.6440	0.6418	0.6236	0.6418
				Last	0.6450	0.6520	0.6718	0.6712
0	0	0.05	0.3	First	0.2986	0.3072	0.3026	0.3072
				Last	0.2804	0.2928	0.3180	0.3140

Table B.39. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0432	0.0440	0.0446	0.0440
				Last	0.0434	0.0446	0.0508	0.0486
0	0.1	0.2	0.3	First	0.1392	0.1470	0.1468	0.1470
				Last	0.1330	0.1414	0.1562	0.1532
0	0	0.25	0.25	First	0.1404	0.1466	0.1452	0.1466
				Last	0.1340	0.1438	0.1598	0.1550
0	0.125	0.25	0.25	First	0.1170	0.1232	0.1198	0.1232
				Last	0.1136	0.1198	0.1300	0.1294
0	0	0	0.5	First	0.2248	0.2260	0.2206	0.2260
				Last	0.2168	0.2212	0.2362	0.2354
0.05	0.1	0.3	0.5	First	0.2244	0.2406	0.2342	0.2406
				Last	0.2252	0.2328	0.2488	0.2444
0	0	0.5	0.5	First	0.3112	0.3256	0.3148	0.3256
				Last	0.3034	0.3206	0.3456	0.3426
0	0.25	0.5	0.5	First	0.2576	0.2672	0.2664	0.2672
				Last	0.2582	0.2670	0.2830	0.2806
0	0.5	0.5	1	First	0.5206	0.5342	0.5408	0.5342
				Last	0.5344	0.5450	0.5728	0.5684
0	0.25	0.25	0.5	First	0.2272	0.2370	0.2400	0.2370
				Last	0.2256	0.2340	0.2544	0.2474
0	0.25	0.25	0.25	First	0.1092	0.1184	0.1234	0.1184
				Last	0.1092	0.1168	0.1294	0.1250
0.1	0.2	0.6	1	First	0.5594	0.5750	0.5578	0.5750
				Last	0.5632	0.5822	0.6158	0.6020
0.25	0.25	0.5	0.5	First	0.1422	0.1442	0.1426	0.1442
				Last	0.1334	0.1346	0.1504	0.1496
0	0.1	0.3	0.7	First	0.3916	0.4036	0.3968	0.4036
				Last	0.3858	0.3990	0.4298	0.4208
0	0.05	0.15	0.35	First	0.1706	0.1740	0.1750	0.1740
				Last	0.1700	0.1738	0.1916	0.1832
0	0.15	0.2	0.5	First	0.2358	0.2454	0.2404	0.2454
				Last	0.2322	0.2412	0.2570	0.2560
0	0	0.1	0.6	First	0.2954	0.3032	0.2994	0.3032
				Last	0.2878	0.2986	0.3186	0.3148
0	0	0.05	0.3	First	0.1380	0.1414	0.1370	0.1414
				Last	0.1298	0.1350	0.1498	0.1462

Table B.40. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0508	0.0522	0.0518	0.0522
				Last	0.0434	0.0536	0.0542	0.0530
0	0.1	0.2	0.3	First	0.2046	0.2120	0.2108	0.2120
				Last	0.1850	0.2154	0.2082	0.2184
0	0	0.25	0.25	First	0.2098	0.2190	0.2134	0.2190
				Last	0.1878	0.2148	0.2160	0.2202
0	0.125	0.25	0.25	First	0.1776	0.1812	0.1786	0.1812
				Last	0.1596	0.1874	0.1812	0.1892
0	0	0	0.5	First	0.3168	0.3350	0.3334	0.3350
				Last	0.2960	0.3352	0.3380	0.3432
0.05	0.1	0.3	0.5	First	0.3602	0.3836	0.3758	0.3836
				Last	0.3286	0.3804	0.3786	0.3892
0	0	0.5	0.5	First	0.5070	0.5254	0.5018	0.5254
				Last	0.4706	0.5252	0.5010	0.5348
0	0.25	0.5	0.5	First	0.4222	0.4356	0.4252	0.4356
				Last	0.3916	0.4382	0.4270	0.4440
0	0.5	0.5	1	First	0.7884	0.8108	0.8110	0.8108
				Last	0.7758	0.8140	0.8118	0.8204
0	0.25	0.25	0.5	First	0.3350	0.3476	0.3494	0.3476
				Last	0.3100	0.3468	0.3488	0.3536
0	0.25	0.25	0.25	First	0.1526	0.1536	0.1544	0.1536
				Last	0.1338	0.1490	0.1522	0.1548
0.1	0.2	0.6	1	First	0.8096	0.8320	0.8190	0.8320
				Last	0.7888	0.8342	0.8156	0.8388
0.25	0.25	0.5	0.5	First	0.2006	0.2092	0.1990	0.2092
				Last	0.1816	0.2068	0.1984	0.2134
0	0.1	0.3	0.7	First	0.5964	0.6164	0.6078	0.6164
				Last	0.5760	0.6254	0.6148	0.6298
0	0.05	0.15	0.35	First	0.2286	0.2426	0.2402	0.2426
				Last	0.2072	0.2400	0.2408	0.2438
0	0.15	0.2	0.5	First	0.3674	0.3812	0.3754	0.3812
				Last	0.3386	0.3812	0.3850	0.3918
0	0	0.1	0.6	First	0.4672	0.4860	0.4848	0.4860
				Last	0.4374	0.4906	0.4828	0.4958
0	0	0.05	0.3	First	0.1934	0.2078	0.2058	0.2078
				Last	0.1698	0.2020	0.1970	0.2092

Table B.41. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0482	0.0470	0.0444	0.0470
				Last	0.0498	0.0468	0.0462	0.0488
0	0.1	0.2	0.3	First	0.3706	0.3768	0.3704	0.3768
				Last	0.3432	0.3786	0.3668	0.3846
0	0	0.25	0.25	First	0.3636	0.3840	0.3656	0.3840
				Last	0.3336	0.3820	0.3668	0.3912
0	0.125	0.25	0.25	First	0.2960	0.3022	0.2956	0.3022
				Last	0.2706	0.3022	0.2932	0.3070
0	0	0	0.5	First	0.5496	0.5706	0.5702	0.5706
				Last	0.5150	0.5780	0.5744	0.5808
0.05	0.1	0.3	0.5	First	0.6192	0.6392	0.6180	0.6392
				Last	0.5902	0.6362	0.6148	0.6462
0	0	0.5	0.5	First	0.7678	0.7928	0.7640	0.7928
				Last	0.7450	0.7936	0.7648	0.7998
0	0.25	0.5	0.5	First	0.6794	0.7020	0.6852	0.7020
				Last	0.6564	0.7024	0.6850	0.7084
0	0.5	0.5	1	First	0.9586	0.9630	0.9562	0.9630
				Last	0.9538	0.9630	0.9568	0.9660
0	0.25	0.25	0.5	First	0.6116	0.6220	0.6132	0.6220
				Last	0.5780	0.6244	0.6110	0.6318
0	0.25	0.25	0.25	First	0.2526	0.2622	0.2636	0.2622
				Last	0.2286	0.2592	0.2572	0.2656
0.1	0.2	0.6	1	First	0.9734	0.9738	0.9644	0.9738
				Last	0.9684	0.9728	0.9650	0.9760
0.25	0.25	0.5	0.5	First	0.3612	0.3850	0.3682	0.3850
				Last	0.3346	0.3808	0.3650	0.3916
0	0.1	0.3	0.7	First	0.8682	0.8778	0.8610	0.8778
				Last	0.8576	0.8824	0.8630	0.8844
0	0.05	0.15	0.35	First	0.4528	0.4654	0.4500	0.4654
				Last	0.4166	0.4590	0.4446	0.4680
0	0.15	0.2	0.5	First	0.6220	0.6314	0.6218	0.6314
				Last	0.5932	0.6344	0.6206	0.6402
0	0	0.1	0.6	First	0.7252	0.7510	0.7354	0.7510
				Last	0.6984	0.7540	0.7408	0.7608
0	0	0.05	0.3	First	0.3494	0.3638	0.3588	0.3638
				Last	0.3154	0.3612	0.3560	0.3684

Table B.42. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0454	0.0480	0.0480	0.0480
				Last	0.0426	0.0472	0.0484	0.0498
0	0.1	0.2	0.3	First	0.1620	0.1690	0.1636	0.1690
				Last	0.1462	0.1698	0.1648	0.1706
0	0	0.25	0.25	First	0.1648	0.1704	0.1624	0.1704
				Last	0.1508	0.1704	0.1634	0.1724
0	0.125	0.25	0.25	First	0.1330	0.1350	0.1362	0.1350
				Last	0.1166	0.1350	0.1334	0.1376
0	0	0	0.5	First	0.2632	0.2752	0.2764	0.2752
				Last	0.2394	0.2788	0.2782	0.2812
0.05	0.1	0.3	0.5	First	0.2732	0.2864	0.2778	0.2864
				Last	0.2464	0.2862	0.2778	0.2932
0	0	0.5	0.5	First	0.3766	0.3974	0.3740	0.3974
				Last	0.3468	0.3910	0.3736	0.4054
0	0.25	0.5	0.5	First	0.3150	0.3266	0.3152	0.3266
				Last	0.2870	0.3274	0.3150	0.3338
0	0.5	0.5	1	First	0.6266	0.6486	0.6430	0.6486
				Last	0.6026	0.6530	0.6528	0.6642
0	0.25	0.25	0.5	First	0.2600	0.2692	0.2710	0.2692
				Last	0.2368	0.2700	0.2688	0.2752
0	0.25	0.25	0.25	First	0.1240	0.1268	0.1254	0.1268
				Last	0.1068	0.1294	0.1256	0.1286
0.1	0.2	0.6	1	First	0.6558	0.6776	0.6544	0.6776
				Last	0.6340	0.6782	0.6582	0.6862
0.25	0.25	0.5	0.5	First	0.1696	0.1782	0.1738	0.1782
				Last	0.1502	0.1780	0.1702	0.1832
0	0.1	0.3	0.7	First	0.4494	0.4730	0.4612	0.4730
				Last	0.4188	0.4696	0.4594	0.4778
0	0.05	0.15	0.35	First	0.1986	0.2060	0.2028	0.2060
				Last	0.1806	0.2064	0.2018	0.2108
0	0.15	0.2	0.5	First	0.2660	0.2832	0.2816	0.2832
				Last	0.2424	0.2806	0.2772	0.2870
0	0	0.1	0.6	First	0.3326	0.3536	0.3560	0.3536
				Last	0.3104	0.3572	0.3562	0.3634
0	0	0.05	0.3	First	0.1594	0.1666	0.1622	0.1666
				Last	0.1406	0.1600	0.1640	0.1674

Table B.43. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0480	0.0500	0.0498	0.0500
				Last	0.0516	0.0506	0.0488	0.0500
0	0.1	0.2	0.3	First	0.2312	0.2400	0.2340	0.2400
				Last	0.2396	0.2488	0.2334	0.2400
0	0	0.25	0.25	First	0.2224	0.2344	0.2218	0.2344
				Last	0.2336	0.2388	0.2244	0.2342
0	0.125	0.25	0.25	First	0.1820	0.1934	0.1944	0.1934
				Last	0.1910	0.1964	0.1918	0.1930
0	0	0	0.5	First	0.3908	0.4054	0.4060	0.4054
				Last	0.4034	0.4164	0.4062	0.4066
0.05	0.1	0.3	0.5	First	0.4128	0.4342	0.4148	0.4342
				Last	0.4260	0.4392	0.4202	0.4346
0	0	0.5	0.5	First	0.5636	0.5878	0.5604	0.5878
				Last	0.5802	0.5918	0.5528	0.5886
0	0.25	0.5	0.5	First	0.4610	0.4866	0.4736	0.4866
				Last	0.4734	0.4922	0.4724	0.4886
0	0.5	0.5	1	First	0.8510	0.8688	0.8684	0.8688
				Last	0.8580	0.8720	0.8680	0.8708
0	0.25	0.25	0.5	First	0.3842	0.4018	0.4040	0.4018
				Last	0.3994	0.4098	0.4034	0.4008
0	0.25	0.25	0.25	First	0.1614	0.1730	0.1712	0.1730
				Last	0.1742	0.1784	0.1690	0.1726
0.1	0.2	0.6	1	First	0.8728	0.8938	0.8832	0.8938
				Last	0.8790	0.8946	0.8808	0.8940
0.25	0.25	0.5	0.5	First	0.2330	0.2442	0.2356	0.2442
				Last	0.2494	0.2538	0.2382	0.2456
0	0.1	0.3	0.7	First	0.6820	0.7028	0.6916	0.7028
				Last	0.6896	0.7076	0.6828	0.7030
0	0.05	0.15	0.35	First	0.2762	0.2874	0.2796	0.2874
				Last	0.2896	0.2934	0.2804	0.2874
0	0.15	0.2	0.5	First	0.4022	0.4200	0.4174	0.4200
				Last	0.4174	0.4280	0.4178	0.4220
0	0	0.1	0.6	First	0.5300	0.5504	0.5450	0.5504
				Last	0.5440	0.5598	0.5388	0.5510
0	0	0.05	0.3	First	0.2292	0.2372	0.2292	0.2372
				Last	0.2426	0.2426	0.2356	0.2384

Table B.44. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0466	0.0454	0.0472	0.0454
				Last	0.0524	0.0486	0.0458	0.0460
0	0.1	0.2	0.3	First	0.4124	0.4256	0.4130	0.4256
				Last	0.4256	0.4276	0.4110	0.4260
0	0	0.25	0.25	First	0.4150	0.4372	0.4168	0.4372
				Last	0.4258	0.4420	0.4108	0.4378
0	0.125	0.25	0.25	First	0.3256	0.3436	0.3376	0.3436
				Last	0.3424	0.3498	0.3390	0.3448
0	0	0	0.5	First	0.6308	0.6590	0.6524	0.6590
				Last	0.6420	0.6602	0.6452	0.6590
0.05	0.1	0.3	0.5	First	0.6964	0.7100	0.6860	0.7100
				Last	0.7078	0.7154	0.6818	0.7106
0	0	0.5	0.5	First	0.8244	0.8504	0.8260	0.8504
				Last	0.8330	0.8548	0.8248	0.8514
0	0.25	0.5	0.5	First	0.7582	0.7768	0.7562	0.7768
				Last	0.7668	0.7792	0.7552	0.7770
0	0.5	0.5	1	First	0.9824	0.9846	0.9824	0.9846
				Last	0.9840	0.9852	0.9804	0.9846
0	0.25	0.25	0.5	First	0.6716	0.6834	0.6788	0.6834
				Last	0.6832	0.6880	0.6720	0.6836
0	0.25	0.25	0.25	First	0.2734	0.3014	0.3050	0.3014
				Last	0.2872	0.3050	0.2980	0.3012
0.1	0.2	0.6	1	First	0.9874	0.9874	0.9814	0.9874
				Last	0.9884	0.9899	0.9812	0.9878
0.25	0.25	0.5	0.5	First	0.4068	0.4306	0.4100	0.4306
				Last	0.4258	0.4354	0.4094	0.4314
0	0.1	0.3	0.7	First	0.9212	0.9232	0.9114	0.9232
				Last	0.9254	0.9274	0.9084	0.9244
0	0.05	0.15	0.35	First	0.5000	0.5058	0.4878	0.5058
				Last	0.5156	0.5176	0.4840	0.5052
0	0.15	0.2	0.5	First	0.7038	0.7206	0.7002	0.7206
				Last	0.7124	0.7214	0.7004	0.7200
0	0	0.1	0.6	First	0.8026	0.8242	0.8054	0.8242
				Last	0.8094	0.8276	0.8070	0.8248
0	0	0.05	0.3	First	0.3870	0.4012	0.3952	0.4012
				Last	0.4006	0.4098	0.3960	0.4008

Table B.45. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0522	0.0544	0.0522	0.0544
				Last	0.0570	0.0564	0.0518	0.0544
0	0.1	0.2	0.3	First	0.1806	0.1914	0.1900	0.1914
				Last	0.1948	0.1980	0.1870	0.1912
0	0	0.25	0.25	First	0.1770	0.1920	0.1832	0.1920
				Last	0.1886	0.1980	0.1872	0.1912
0	0.125	0.25	0.25	First	0.1346	0.1414	0.1396	0.1414
				Last	0.1404	0.1452	0.1424	0.1424
0	0	0	0.5	First	0.2936	0.3044	0.3054	0.3044
				Last	0.3070	0.3130	0.3034	0.3042
0.05	0.1	0.3	0.5	First	0.3090	0.3228	0.3152	0.3228
				Last	0.3202	0.3294	0.3122	0.3224
0	0	0.5	0.5	First	0.4366	0.4556	0.4286	0.4556
				Last	0.4468	0.4630	0.4302	0.4560
0	0.25	0.5	0.5	First	0.3614	0.3800	0.3742	0.3800
				Last	0.3758	0.3844	0.3670	0.3808
0	0.5	0.5	1	First	0.6918	0.7154	0.7112	0.7154
				Last	0.7064	0.7220	0.7098	0.7168
0	0.25	0.25	0.5	First	0.2972	0.3080	0.3048	0.3080
				Last	0.3076	0.3140	0.3040	0.3076
0	0.25	0.25	0.25	First	0.1424	0.1506	0.1542	0.1506
				Last	0.1454	0.1574	0.1552	0.1508
0.1	0.2	0.6	1	First	0.7208	0.7486	0.7324	0.7486
				Last	0.7302	0.7492	0.7294	0.7492
0.25	0.25	0.5	0.5	First	0.1870	0.1992	0.1870	0.1992
				Last	0.1994	0.2034	0.1924	0.1994
0	0.1	0.3	0.7	First	0.5238	0.5400	0.5216	0.5400
				Last	0.5372	0.5440	0.5206	0.5418
0	0.05	0.15	0.35	First	0.2120	0.2240	0.2198	0.2240
				Last	0.2216	0.2264	0.2192	0.2240
0	0.15	0.2	0.5	First	0.3088	0.3242	0.3176	0.3242
				Last	0.3198	0.3326	0.3192	0.3252
0	0	0.1	0.6	First	0.4094	0.4182	0.4130	0.4182
				Last	0.4224	0.4244	0.4066	0.4192
0	0	0.05	0.3	First	0.1720	0.1720	0.1640	0.1720
				Last	0.1818	0.1906	0.1624	0.1718

Table B.46. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0490	0.0488	0.0508	0.0488
				Last	0.0564	0.0476	0.0496	0.0484
0	0.1	0.2	0.3	First	0.2042	0.2084	0.2032	0.2084
				Last	0.2412	0.2196	0.2210	0.2226
0	0	0.25	0.25	First	0.2096	0.2168	0.2090	0.2168
				Last	0.2476	0.2320	0.2282	0.2366
0	0.125	0.25	0.25	First	0.1626	0.1650	0.1660	0.1650
				Last	0.1940	0.1792	0.1868	0.1820
0	0	0	0.5	First	0.3534	0.3634	0.3646	0.3634
				Last	0.4132	0.3874	0.4032	0.3964
0.05	0.1	0.3	0.5	First	0.3686	0.3768	0.3668	0.3768
				Last	0.4252	0.4072	0.4040	0.4114
0	0	0.5	0.5	First	0.5024	0.5240	0.5010	0.5240
				Last	0.5732	0.5568	0.5406	0.5618
0	0.25	0.5	0.5	First	0.4036	0.4276	0.4228	0.4276
				Last	0.4792	0.4702	0.4644	0.4746
0	0.5	0.5	1	First	0.7874	0.8096	0.8096	0.8096
				Last	0.8622	0.8486	0.8584	0.8538
0	0.25	0.25	0.5	First	0.3388	0.3564	0.3548	0.3564
				Last	0.4038	0.3842	0.3946	0.3872
0	0.25	0.25	0.25	First	0.1534	0.1594	0.1650	0.1594
				Last	0.1732	0.1598	0.1684	0.1620
0.1	0.2	0.6	1	First	0.8174	0.8338	0.8182	0.8338
				Last	0.8860	0.8750	0.8710	0.8794
0.25	0.25	0.5	0.5	First	0.2082	0.2160	0.2102	0.2160
				Last	0.2424	0.2310	0.2264	0.2342
0	0.1	0.3	0.7	First	0.6020	0.6194	0.6140	0.6194
				Last	0.6742	0.6644	0.6638	0.6656
0	0.05	0.15	0.35	First	0.2414	0.2502	0.2500	0.2502
				Last	0.2882	0.2712	0.2716	0.2748
0	0.15	0.2	0.5	First	0.3674	0.3742	0.3708	0.3742
				Last	0.4280	0.4042	0.4130	0.4072
0	0	0.1	0.6	First	0.4784	0.4856	0.4838	0.4856
				Last	0.5400	0.5180	0.5212	0.5256
0	0	0.05	0.3	First	0.1916	0.1920	0.1960	0.1920
				Last	0.2314	0.2132	0.2158	0.2150

Table B.47. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0494	0.0494	0.0510	0.0494
				Last	0.0558	0.0484	0.0524	0.0494
0	0.1	0.2	0.3	First	0.3866	0.3948	0.3838	0.3948
				Last	0.4518	0.4292	0.4244	0.4336
0	0	0.25	0.25	First	0.3570	0.3720	0.3562	0.3720
				Last	0.4258	0.4054	0.3978	0.4082
0	0.125	0.25	0.25	First	0.2818	0.2900	0.2848	0.2900
				Last	0.3364	0.3186	0.3198	0.3196
0	0	0	0.5	First	0.5730	0.5856	0.5820	0.5856
				Last	0.6408	0.6272	0.6360	0.6342
0.05	0.1	0.3	0.5	First	0.6252	0.6284	0.6090	0.6284
				Last	0.6978	0.6736	0.6574	0.6780
0	0	0.5	0.5	First	0.7592	0.7856	0.7572	0.7856
				Last	0.8342	0.8240	0.8038	0.8270
0	0.25	0.5	0.5	First	0.6718	0.6936	0.6748	0.6936
				Last	0.7638	0.7462	0.7374	0.7482
0	0.5	0.5	1	First	0.9606	0.9618	0.9556	0.9618
				Last	0.9808	0.9762	0.9752	0.9778
0	0.25	0.25	0.5	First	0.6006	0.6072	0.5934	0.6072
				Last	0.6794	0.6546	0.6550	0.6580
0	0.25	0.25	0.25	First	0.2452	0.2532	0.2606	0.2532
				Last	0.2898	0.2736	0.2792	0.2776
0.1	0.2	0.6	1	First	0.9764	0.9758	0.9630	0.9758
				Last	0.9886	0.9858	0.9810	0.9862
0.25	0.25	0.5	0.5	First	0.3606	0.3696	0.3594	0.3696
				Last	0.4262	0.4046	0.3924	0.4096
0	0.1	0.3	0.7	First	0.8790	0.8730	0.8506	0.8730
				Last	0.9186	0.9082	0.8970	0.9096
0	0.05	0.15	0.35	First	0.4506	0.4538	0.4404	0.4538
				Last	0.5176	0.4924	0.4820	0.4958
0	0.15	0.2	0.5	First	0.6292	0.6254	0.6090	0.6254
				Last	0.7036	0.6802	0.6742	0.6814
0	0	0.1	0.6	First	0.7550	0.7530	0.7376	0.7530
				Last	0.8214	0.8076	0.7980	0.8112
0	0	0.05	0.3	First	0.3592	0.3580	0.3472	0.3580
				Last	0.4062	0.3794	0.3810	0.3854

Table B.48. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0500	0.0492	0.0524	0.0492
				Last	0.0540	0.0466	0.0498	0.0494
0	0.1	0.2	0.3	First	0.1648	0.1664	0.1692	0.1664
				Last	0.1930	0.1760	0.1814	0.1788
0	0	0.25	0.25	First	0.1548	0.1598	0.1544	0.1598
				Last	0.1860	0.1716	0.1734	0.1726
0	0.125	0.25	0.25	First	0.1278	0.1364	0.1394	0.1364
				Last	0.1570	0.1442	0.1498	0.1464
0	0	0	0.5	First	0.2702	0.2696	0.2726	0.2696
				Last	0.3068	0.2934	0.2956	0.2980
0.05	0.1	0.3	0.5	First	0.2826	0.2856	0.2798	0.2856
				Last	0.3328	0.3120	0.3096	0.3164
0	0	0.5	0.5	First	0.3718	0.3850	0.3666	0.3850
				Last	0.4338	0.4190	0.4078	0.4190
0	0.25	0.5	0.5	First	0.3164	0.3312	0.3188	0.3312
				Last	0.3698	0.3602	0.3562	0.3636
0	0.5	0.5	1	First	0.6306	0.6476	0.6476	0.6476
				Last	0.7088	0.7014	0.7026	0.7028
0	0.25	0.25	0.5	First	0.2538	0.2592	0.2616	0.2592
				Last	0.3012	0.2822	0.2864	0.2846
0	0.25	0.25	0.25	First	0.1268	0.1276	0.1292	0.1276
				Last	0.1466	0.1346	0.1362	0.1370
0.1	0.2	0.6	1	First	0.6656	0.6792	0.6570	0.6792
				Last	0.7364	0.7220	0.7140	0.7274
0.25	0.25	0.5	0.5	First	0.1704	0.1716	0.1636	0.1716
				Last	0.2006	0.1830	0.1800	0.1868
0	0.1	0.3	0.7	First	0.4668	0.4752	0.4658	0.4752
				Last	0.5284	0.5188	0.5186	0.5222
0	0.05	0.15	0.35	First	0.2012	0.2056	0.2060	0.2056
				Last	0.2364	0.2196	0.2184	0.2188
0	0.15	0.2	0.5	First	0.2750	0.2860	0.2788	0.2860
				Last	0.3224	0.3088	0.3128	0.3092
0	0	0.1	0.6	First	0.3638	0.3678	0.3580	0.3678
				Last	0.4076	0.3940	0.3970	0.3980
0	0	0.05	0.3	First	0.1606	0.1670	0.1598	0.1670
				Last	0.1850	0.1734	0.1770	0.1764

Table B.49. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0490	0.0482	0.0490	0.0482
				Last	0.0508	0.0478	0.0472	0.0476
0	0.1	0.2	0.3	First	0.2306	0.2414	0.2374	0.2414
				Last	0.2466	0.2522	0.2486	0.2530
0	0	0.25	0.25	First	0.2364	0.2426	0.2300	0.2426
				Last	0.2462	0.2510	0.2370	0.2524
0	0.125	0.25	0.25	First	0.1954	0.1972	0.1936	0.1972
				Last	0.2002	0.2044	0.1990	0.2102
0	0	0	0.5	First	0.3948	0.4090	0.4110	0.4090
				Last	0.4102	0.4242	0.4278	0.4330
0.05	0.1	0.3	0.5	First	0.4176	0.4386	0.4272	0.4386
				Last	0.4368	0.4524	0.4452	0.4610
0	0	0.5	0.5	First	0.5862	0.6032	0.5672	0.6032
				Last	0.6086	0.6200	0.5952	0.6210
0	0.25	0.5	0.5	First	0.4920	0.5006	0.4916	0.5006
				Last	0.5064	0.5270	0.5164	0.5290
0	0.5	0.5	1	First	0.8682	0.8792	0.8816	0.8792
				Last	0.8764	0.8884	0.8900	0.8988
0	0.25	0.25	0.5	First	0.4106	0.4156	0.4156	0.4156
				Last	0.4284	0.4362	0.4346	0.4448
0	0.25	0.25	0.25	First	0.1736	0.1758	0.1760	0.1758
				Last	0.1818	0.1834	0.1844	0.1940
0.1	0.2	0.6	1	First	0.8940	0.9068	0.8974	0.9068
				Last	0.9056	0.9224	0.9116	0.9236
0.25	0.25	0.5	0.5	First	0.2510	0.2600	0.2450	0.2600
				Last	0.2544	0.2586	0.2490	0.2612
0	0.1	0.3	0.7	First	0.6868	0.7000	0.6888	0.7000
				Last	0.7070	0.7222	0.7134	0.7297
0	0.05	0.15	0.35	First	0.2976	0.3026	0.2976	0.3026
				Last	0.3098	0.3096	0.2990	0.3126
0	0.15	0.2	0.5	First	0.4282	0.4404	0.4368	0.4404
				Last	0.4460	0.4542	0.4486	0.4630
0	0	0.1	0.6	First	0.5456	0.5678	0.5596	0.5678
				Last	0.5626	0.5820	0.5770	0.5826
0	0	0.05	0.3	First	0.2264	0.2338	0.2312	0.2338
				Last	0.2378	0.2466	0.2420	0.2542

Table B.50. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0510	0.0522	0.0524	0.0522
				Last	0.0554	0.0542	0.0560	0.0524
0	0.1	0.2	0.3	First	0.4538	0.4632	0.4442	0.4632
				Last	0.4706	0.4758	0.4588	0.4850
0	0	0.25	0.25	First	0.4394	0.4588	0.4324	0.4588
				Last	0.4554	0.4712	0.4528	0.4792
0	0.125	0.25	0.25	First	0.3504	0.3568	0.3526	0.3568
				Last	0.3666	0.3676	0.3588	0.3682
0	0	0	0.5	First	0.6400	0.6592	0.6542	0.6592
				Last	0.6546	0.6796	0.6790	0.6832
0.05	0.1	0.3	0.5	First	0.7268	0.7400	0.7226	0.7400
				Last	0.7492	0.7548	0.7392	0.7582
0	0	0.5	0.5	First	0.8440	0.8640	0.8400	0.8640
				Last	0.8622	0.8830	0.8590	0.8834
0	0.25	0.5	0.5	First	0.7848	0.7934	0.7752	0.7934
				Last	0.8034	0.8126	0.7938	0.8144
0	0.5	0.5	1	First	0.9844	0.9884	0.9850	0.9884
				Last	0.9892	0.9906	0.9882	0.9908
0	0.25	0.25	0.5	First	0.6968	0.7060	0.6890	0.7060
				Last	0.7162	0.7222	0.7112	0.7224
0	0.25	0.25	0.25	First	0.3080	0.3122	0.3096	0.3122
				Last	0.3212	0.3210	0.3192	0.3298
0.1	0.2	0.6	1	First	0.9920	0.9894	0.9850	0.9894
				Last	0.9934	0.9914	0.9886	0.9978
0.25	0.25	0.5	0.5	First	0.4348	0.4512	0.4314	0.4512
				Last	0.4450	0.4640	0.4440	0.4688
0	0.1	0.3	0.7	First	0.9330	0.9328	0.9186	0.9328
				Last	0.9450	0.9420	0.9276	0.9508
0	0.05	0.15	0.35	First	0.5176	0.5226	0.5094	0.5226
				Last	0.5332	0.5420	0.5250	0.5518
0	0.15	0.2	0.5	First	0.7254	0.7332	0.7206	0.7332
				Last	0.7442	0.7478	0.7384	0.7520
0	0	0.1	0.6	First	0.8262	0.8346	0.8238	0.8346
				Last	0.8482	0.8498	0.8372	0.8524
0	0	0.05	0.3	First	0.4036	0.4200	0.4146	0.4200
				Last	0.4272	0.4354	0.4268	0.4364

Table B.51. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0508	0.0484	0.0468	0.0484
				Last	0.0518	0.0506	0.0480	0.0496
0	0.1	0.2	0.3	First	0.1934	0.1916	0.1876	0.1916
				Last	0.1992	0.2018	0.1966	0.2084
0	0	0.25	0.25	First	0.1928	0.2004	0.1932	0.2004
				Last	0.1950	0.1984	0.1948	0.2016
0	0.125	0.25	0.25	First	0.1480	0.1500	0.1468	0.1500
				Last	0.1550	0.1570	0.1520	0.1586
0	0	0	0.5	First	0.3056	0.3166	0.3202	0.3166
				Last	0.3204	0.3312	0.3316	0.3322
0.05	0.1	0.3	0.5	First	0.3268	0.3290	0.3136	0.3290
				Last	0.3370	0.3452	0.3304	0.3498
0	0	0.5	0.5	First	0.4350	0.4516	0.4358	0.4516
				Last	0.4514	0.4678	0.4476	0.4688
0	0.25	0.5	0.5	First	0.3634	0.3836	0.3708	0.3836
				Last	0.3762	0.3886	0.3782	0.3920
0	0.5	0.5	1	First	0.7280	0.7476	0.7414	0.7476
				Last	0.7466	0.7592	0.7596	0.7636
0	0.25	0.25	0.5	First	0.3100	0.3190	0.3220	0.3190
				Last	0.3212	0.3334	0.3346	0.3416
0	0.25	0.25	0.25	First	0.1406	0.1432	0.1472	0.1432
				Last	0.1458	0.1476	0.1490	0.1526
0.1	0.2	0.6	1	First	0.7492	0.7676	0.7538	0.7676
				Last	0.7686	0.7818	0.7708	0.7844
0.25	0.25	0.5	0.5	First	0.1924	0.1968	0.1892	0.1968
				Last	0.2000	0.2116	0.1992	0.2188
0	0.1	0.3	0.7	First	0.5424	0.5612	0.5578	0.5612
				Last	0.5604	0.5798	0.5724	0.5804
0	0.05	0.15	0.35	First	0.2296	0.2308	0.2194	0.2308
				Last	0.2324	0.2338	0.2272	0.2362
0	0.15	0.2	0.5	First	0.3180	0.3266	0.3260	0.3266
				Last	0.3332	0.3410	0.3428	0.3474
0	0	0.1	0.6	First	0.4214	0.4326	0.4244	0.4326
				Last	0.4332	0.4426	0.4400	0.4468
0	0	0.05	0.3	First	0.1818	0.1910	0.1894	0.1910
				Last	0.1898	0.1928	0.1932	0.1954

Table B.52. Normal, 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0486	0.0482	0.0496	0.0482
				Last	0.0444	0.0480	0.0486	0.0470
0	0.1	0.2	0.3	First	0.2586	0.2626	0.2628	0.2626
				Last	0.2450	0.2754	0.2668	0.2702
0	0	0.25	0.25	First	0.2596	0.2718	0.2564	0.2718
				Last	0.2482	0.2766	0.2578	0.2760
0	0.125	0.25	0.25	First	0.1958	0.2010	0.2024	0.2010
				Last	0.1870	0.2086	0.2042	0.2050
0	0	0	0.5	First	0.4516	0.4676	0.4668	0.4676
				Last	0.4384	0.4744	0.4686	0.4722
0.05	0.1	0.3	0.5	First	0.4730	0.4880	0.4694	0.4880
				Last	0.4598	0.4968	0.4790	0.4926
0	0	0.5	0.5	First	0.6552	0.6720	0.6420	0.6720
				Last	0.6404	0.6848	0.6428	0.6772
0	0.25	0.5	0.5	First	0.5434	0.5618	0.5514	0.5618
				Last	0.5282	0.5764	0.5590	0.5724
0	0.5	0.5	1	First	0.9138	0.9270	0.9278	0.9270
				Last	0.9132	0.9330	0.9286	0.9302
0	0.25	0.25	0.5	First	0.4490	0.4636	0.4608	0.4636
				Last	0.4370	0.4720	0.4668	0.4664
0	0.25	0.25	0.25	First	0.1948	0.1960	0.1938	0.1960
				Last	0.1830	0.2044	0.1964	0.2010
0.1	0.2	0.6	1	First	0.9288	0.9394	0.9364	0.9394
				Last	0.9292	0.9466	0.9374	0.9436
0.25	0.25	0.5	0.5	First	0.2680	0.2816	0.2648	0.2816
				Last	0.2558	0.2880	0.2696	0.2862
0	0.1	0.3	0.7	First	0.7512	0.7750	0.7632	0.7750
				Last	0.7468	0.7838	0.7684	0.7824
0	0.05	0.15	0.35	First	0.3302	0.3340	0.3320	0.3340
				Last	0.3140	0.3476	0.3354	0.3414
0	0.15	0.2	0.5	First	0.4816	0.4952	0.4876	0.4952
				Last	0.4704	0.5116	0.4922	0.5026
0	0	0.1	0.6	First	0.6194	0.6364	0.6324	0.6364
				Last	0.6016	0.6450	0.6304	0.6396
0	0	0.05	0.3	First	0.2520	0.2558	0.2494	0.2558
				Last	0.2364	0.2622	0.2538	0.2618

Table B.53. Exponential, 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0498	0.0506	0.0516	0.0506
				Last	0.0470	0.0518	0.0514	0.0518
0	0.1	0.2	0.3	First	0.5000	0.5092	0.4970	0.5092
				Last	0.4968	0.5306	0.5056	0.5224
0	0	0.25	0.25	First	0.4814	0.4992	0.4786	0.4992
				Last	0.4644	0.5106	0.4790	0.5054
0	0.125	0.25	0.25	First	0.4256	0.4332	0.4156	0.4332
				Last	0.4146	0.4430	0.4184	0.4364
0	0	0	0.5	First	0.7204	0.7302	0.7196	0.7302
				Last	0.7060	0.7392	0.7246	0.7364
0.05	0.1	0.3	0.5	First	0.7922	0.7948	0.7684	0.7948
				Last	0.7818	0.8018	0.7726	0.8014
0	0	0.5	0.5	First	0.9042	0.9140	0.8964	0.9140
				Last	0.8978	0.9248	0.9006	0.9222
0	0.25	0.5	0.5	First	0.8402	0.8494	0.8286	0.8494
				Last	0.8304	0.8598	0.8402	0.8566
0	0.5	0.5	1	First	0.9948	0.9960	0.9942	0.9960
				Last	0.9944	0.9978	0.9930	0.9966
0	0.25	0.25	0.5	First	0.7464	0.7612	0.7518	0.7612
				Last	0.7406	0.7720	0.7560	0.7674
0	0.25	0.25	0.25	First	0.3288	0.3484	0.3486	0.3484
				Last	0.3158	0.3516	0.3434	0.3486
0.1	0.2	0.6	1	First	0.9976	0.9974	0.9936	0.9974
				Last	0.9972	0.9983	0.9936	0.9976
0.25	0.25	0.5	0.5	First	0.4936	0.5118	0.4850	0.5118
				Last	0.4806	0.5230	0.4916	0.5196
0	0.1	0.3	0.7	First	0.9638	0.9624	0.9486	0.9624
				Last	0.9606	0.9678	0.9504	0.9648
0	0.05	0.15	0.35	First	0.5952	0.6078	0.5852	0.6078
				Last	0.5806	0.6170	0.5876	0.6154
0	0.15	0.2	0.5	First	0.7910	0.7972	0.7808	0.7972
				Last	0.7782	0.7812	0.7804	0.7996
0	0	0.1	0.6	First	0.8818	0.8844	0.8750	0.8844
				Last	0.8782	0.8988	0.8830	0.8940
0	0	0.05	0.3	First	0.4576	0.4626	0.4488	0.4626
				Last	0.4398	0.4682	0.4488	0.4666

Table B.54. T with 3 d.f., 4 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0498	0.0484	0.0494	0.0484
				Last	0.0454	0.0528	0.0520	0.0500
0	0.1	0.2	0.3	First	0.2138	0.2158	0.2166	0.2158
				Last	0.1984	0.2256	0.2186	0.2206
0	0	0.25	0.25	First	0.2080	0.2100	0.1992	0.2100
				Last	0.1914	0.2150	0.2006	0.2130
0	0.125	0.25	0.25	First	0.1802	0.1846	0.1808	0.1846
				Last	0.1646	0.1876	0.1788	0.1848
0	0	0	0.5	First	0.3514	0.3592	0.3506	0.3592
				Last	0.3380	0.3704	0.3620	0.3656
0.05	0.1	0.3	0.5	First	0.3720	0.3816	0.3678	0.3816
				Last	0.3540	0.3904	0.3702	0.3872
0	0	0.5	0.5	First	0.4964	0.5154	0.4926	0.5154
				Last	0.4836	0.5278	0.4968	0.5192
0	0.25	0.5	0.5	First	0.4248	0.4382	0.4244	0.4382
				Last	0.4118	0.4546	0.4286	0.4490
0	0.5	0.5	1	First	0.7754	0.7922	0.7912	0.7922
				Last	0.7650	0.7998	0.7880	0.7974
0	0.25	0.25	0.5	First	0.3538	0.3576	0.3586	0.3576
				Last	0.3340	0.3630	0.3548	0.3606
0	0.25	0.25	0.25	First	0.1506	0.1534	0.1578	0.1534
				Last	0.1438	0.1596	0.1528	0.1560
0.1	0.2	0.6	1	First	0.8090	0.8252	0.8128	0.8252
				Last	0.8006	0.8386	0.8158	0.8306
0.25	0.25	0.5	0.5	First	0.2100	0.2138	0.2094	0.2138
				Last	0.1974	0.2218	0.2094	0.2170
0	0.1	0.3	0.7	First	0.5986	0.6124	0.6096	0.6124
				Last	0.5836	0.6266	0.6102	0.6230
0	0.05	0.15	0.35	First	0.2534	0.2570	0.2468	0.2570
				Last	0.2382	0.2628	0.2510	0.2560
0	0.15	0.2	0.5	First	0.3580	0.3722	0.3660	0.3722
				Last	0.3420	0.3768	0.3650	0.3750
0	0	0.1	0.6	First	0.4674	0.4816	0.4734	0.4816
				Last	0.4558	0.4924	0.4764	0.4870
0	0	0.05	0.3	First	0.2118	0.2120	0.2054	0.2120
				Last	0.2022	0.2180	0.2040	0.2144

Table B.55. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0512	0.0510	0.0500	0.0510
				Last	0.0466	0.0480	0.0500	0.0498
0	0.1	0.2	0.3	First	0.1266	0.1322	0.1340	0.1322
				Last	0.1184	0.1248	0.1320	0.1364
0	0	0.25	0.25	First	0.1212	0.1302	0.1300	0.1302
				Last	0.1158	0.1228	0.1274	0.1338
0	0.125	0.25	0.25	First	0.1100	0.1164	0.1182	0.1164
				Last	0.1028	0.1082	0.1126	0.1186
0	0	0	0.5	First	0.1738	0.1838	0.1848	0.1838
				Last	0.1672	0.1758	0.1878	0.1928
0.05	0.1	0.3	0.5	First	0.1728	0.1842	0.1868	0.1842
				Last	0.1706	0.1848	0.1882	0.1916
0	0	0.5	0.5	First	0.2414	0.2698	0.2662	0.2698
				Last	0.2394	0.2612	0.2684	0.2762
0	0.25	0.5	0.5	First	0.2092	0.2206	0.2114	0.2206
				Last	0.2006	0.2116	0.2204	0.2290
0	0.5	0.5	1	First	0.4210	0.4542	0.4584	0.4542
				Last	0.4326	0.4512	0.4652	0.4780
0	0.25	0.25	0.5	First	0.1790	0.1924	0.1926	0.1924
				Last	0.1722	0.1824	0.1904	0.2010
0	0.25	0.25	0.25	First	0.1000	0.1024	0.1018	0.1024
				Last	0.0922	0.0954	0.0974	0.1054
0.1	0.2	0.6	1	First	0.4338	0.4706	0.4634	0.4706
				Last	0.4428	0.4718	0.4770	0.5028
0.25	0.25	0.5	0.5	First	0.1166	0.1304	0.1278	0.1304
				Last	0.1086	0.1188	0.1228	0.1380
0	0.1	0.3	0.7	First	0.3108	0.3270	0.3268	0.3270
				Last	0.2996	0.3172	0.3218	0.3432
0	0.05	0.15	0.35	First	0.1320	0.1386	0.1400	0.1386
				Last	0.1210	0.1290	0.1390	0.1410
0	0.15	0.2	0.5	First	0.1818	0.1972	0.2012	0.1972
				Last	0.1772	0.1892	0.1986	0.2054
0	0	0.1	0.6	First	0.2300	0.2450	0.2472	0.2450
				Last	0.2286	0.2414	0.2498	0.2606
0	0	0.05	0.3	First	0.1140	0.1206	0.1202	0.1206
				Last	0.1052	0.1152	0.1194	0.1218

Table B.56. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0500	0.0530	0.0528	0.0530
				Last	0.0428	0.0450	0.0522	0.0522
0	0.1	0.2	0.3	First	0.1924	0.2050	0.2034	0.2050
				Last	0.1862	0.1970	0.2018	0.2164
0	0	0.25	0.25	First	0.1934	0.2118	0.2042	0.2118
				Last	0.1870	0.2032	0.2060	0.2192
0	0.125	0.25	0.25	First	0.1856	0.1908	0.1850	0.1908
				Last	0.1748	0.1814	0.1858	0.2002
0	0	0	0.5	First	0.2618	0.2768	0.2870	0.2768
				Last	0.2584	0.2826	0.2974	0.3016
0.05	0.1	0.3	0.5	First	0.2962	0.3164	0.3016	0.3164
				Last	0.2996	0.3106	0.3122	0.3276
0	0	0.5	0.5	First	0.3890	0.4256	0.4052	0.4256
				Last	0.3916	0.4224	0.4194	0.4502
0	0.25	0.5	0.5	First	0.3592	0.3798	0.3698	0.3798
				Last	0.3648	0.3818	0.3740	0.4080
0	0.5	0.5	1	First	0.6342	0.6550	0.6456	0.6550
				Last	0.6576	0.6724	0.6718	0.7008
0	0.25	0.25	0.5	First	0.3066	0.3206	0.3176	0.3206
				Last	0.2992	0.3128	0.3204	0.3354
0	0.25	0.25	0.25	First	0.1428	0.1516	0.1548	0.1516
				Last	0.1382	0.1436	0.1490	0.1552
0.1	0.2	0.6	1	First	0.6516	0.6742	0.6524	0.6742
				Last	0.6784	0.6928	0.6752	0.7142
0.25	0.25	0.5	0.5	First	0.1952	0.2114	0.2058	0.2114
				Last	0.1890	0.1970	0.1998	0.2186
0	0.1	0.3	0.7	First	0.4828	0.5086	0.4952	0.5086
				Last	0.4934	0.5066	0.5062	0.5396
0	0.05	0.15	0.35	First	0.2104	0.2334	0.2334	0.2334
				Last	0.2010	0.2156	0.2278	0.2436
0	0.15	0.2	0.5	First	0.3162	0.3224	0.3170	0.3224
				Last	0.3078	0.3250	0.3336	0.3472
0	0	0.1	0.6	First	0.3608	0.3838	0.3860	0.3838
				Last	0.3656	0.3900	0.4006	0.4140
0	0	0.05	0.3	First	0.1682	0.1882	0.1900	0.1882
				Last	0.1640	0.1790	0.1850	0.1962

Table B.57. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0512	0.0506	0.0466	0.0506
				Last	0.0444	0.0444	0.0494	0.0494
0	0.1	0.2	0.3	First	0.1096	0.1164	0.1114	0.1164
				Last	0.1066	0.1092	0.1170	0.1190
0	0	0.25	0.25	First	0.1024	0.1098	0.1064	0.1098
				Last	0.0966	0.0990	0.1030	0.1106
0	0.125	0.25	0.25	First	0.0962	0.1030	0.1044	0.1030
				Last	0.0900	0.0980	0.1026	0.1056
0	0	0	0.5	First	0.1420	0.1550	0.1556	0.1550
				Last	0.1362	0.1474	0.1568	0.1576
0.05	0.1	0.3	0.5	First	0.1468	0.1518	0.1508	0.1518
				Last	0.1306	0.1420	0.1488	0.1560
0	0	0.5	0.5	First	0.1904	0.2038	0.2012	0.2038
				Last	0.1794	0.1986	0.2024	0.2150
0	0.25	0.5	0.5	First	0.1710	0.1774	0.1750	0.1774
				Last	0.1636	0.1744	0.1760	0.1838
0	0.5	0.5	1	First	0.3160	0.3398	0.3398	0.3398
				Last	0.3150	0.3396	0.3532	0.3616
0	0.25	0.25	0.5	First	0.1462	0.1520	0.1524	0.1520
				Last	0.1332	0.1468	0.1546	0.1564
0	0.25	0.25	0.25	First	0.0864	0.0918	0.0832	0.0918
				Last	0.0712	0.0748	0.0836	0.0824
0.1	0.2	0.6	1	First	0.3278	0.3438	0.3464	0.3438
				Last	0.3240	0.3380	0.3458	0.3604
0.25	0.25	0.5	0.5	First	0.1094	0.1154	0.1134	0.1154
				Last	0.0952	0.1010	0.1056	0.1230
0	0.1	0.3	0.7	First	0.2222	0.2420	0.2420	0.2420
				Last	0.2178	0.2368	0.2486	0.2562
0	0.05	0.15	0.35	First	0.1150	0.1220	0.1176	0.1220
				Last	0.1118	0.1186	0.1214	0.1288
0	0.15	0.2	0.5	First	0.1382	0.1498	0.1532	0.1498
				Last	0.1358	0.1460	0.1584	0.1560
0	0	0.1	0.6	First	0.1668	0.1852	0.1892	0.1852
				Last	0.1648	0.1842	0.1906	0.1986
0	0	0.05	0.3	First	0.1104	0.1192	0.1204	0.1192
				Last	0.1022	0.1052	0.1120	0.1208

Table B.58. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0452	0.0518	0.0522	0.0518
				Last	0.0530	0.0556	0.0576	0.0528
0	0.1	0.2	0.3	First	0.1254	0.1462	0.1416	0.1462
				Last	0.1440	0.1516	0.1434	0.1478
0	0	0.25	0.25	First	0.1246	0.1422	0.1402	0.1422
				Last	0.1358	0.1452	0.1392	0.1438
0	0.125	0.25	0.25	First	0.1172	0.1342	0.1294	0.1342
				Last	0.1312	0.1386	0.1364	0.1340
0	0	0	0.5	First	0.1896	0.2114	0.2068	0.2114
				Last	0.2056	0.2176	0.2110	0.2118
0.05	0.1	0.3	0.5	First	0.2008	0.2320	0.2246	0.2320
				Last	0.2138	0.2368	0.2184	0.2318
0	0	0.5	0.5	First	0.2758	0.3156	0.2998	0.3156
				Last	0.3008	0.3234	0.3044	0.3202
0	0.25	0.5	0.5	First	0.2262	0.2592	0.2548	0.2592
				Last	0.2532	0.2672	0.2560	0.2646
0	0.5	0.5	1	First	0.4686	0.5192	0.5120	0.5192
				Last	0.4990	0.5324	0.5184	0.5286
0	0.25	0.25	0.5	First	0.1902	0.2160	0.2166	0.2160
				Last	0.2140	0.2258	0.2184	0.2214
0	0.25	0.25	0.25	First	0.0980	0.1094	0.1078	0.1094
				Last	0.1144	0.1182	0.1136	0.1140
0.1	0.2	0.6	1	First	0.4978	0.5440	0.5272	0.5440
				Last	0.5374	0.5594	0.5294	0.5486
0.25	0.25	0.5	0.5	First	0.1286	0.1500	0.1414	0.1500
				Last	0.1462	0.1539	0.1414	0.1452
0	0.1	0.3	0.7	First	0.3280	0.3780	0.3666	0.3780
				Last	0.3546	0.3878	0.3702	0.3822
0	0.05	0.15	0.35	First	0.1392	0.1654	0.1598	0.1654
				Last	0.1554	0.1678	0.1650	0.1662
0	0.15	0.2	0.5	First	0.2026	0.2300	0.2264	0.2300
				Last	0.2216	0.2344	0.2304	0.2290
0	0	0.1	0.6	First	0.2660	0.3006	0.2902	0.3006
				Last	0.2886	0.3080	0.2928	0.3036
0	0	0.05	0.3	First	0.1260	0.1386	0.1386	0.1386
				Last	0.1430	0.1442	0.1398	0.1408

Table B.59. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0420	0.0502	0.0488	0.0502
				Last	0.0466	0.0526	0.0524	0.0486
0	0.1	0.2	0.3	First	0.2186	0.2406	0.2306	0.2406
				Last	0.2340	0.2432	0.2344	0.2408
0	0	0.25	0.25	First	0.2062	0.2354	0.2218	0.2354
				Last	0.2260	0.2394	0.2256	0.2388
0	0.125	0.25	0.25	First	0.1806	0.2054	0.1968	0.2054
				Last	0.2054	0.2092	0.1988	0.2054
0	0	0	0.5	First	0.2918	0.3452	0.3404	0.3452
				Last	0.3200	0.3511	0.3440	0.3484
0.05	0.1	0.3	0.5	First	0.3680	0.4018	0.3796	0.4018
				Last	0.3876	0.4089	0.3828	0.4072
0	0	0.5	0.5	First	0.4530	0.5122	0.4808	0.5202
				Last	0.4826	0.5102	0.4774	0.5172
0	0.25	0.5	0.5	First	0.4166	0.4640	0.4388	0.4640
				Last	0.4464	0.4716	0.4396	0.4676
0	0.5	0.5	1	First	0.7186	0.7596	0.7330	0.7596
				Last	0.7468	0.7768	0.7402	0.7700
0	0.25	0.25	0.5	First	0.3384	0.3712	0.3642	0.3712
				Last	0.3742	0.3818	0.3658	0.3766
0	0.25	0.25	0.25	First	0.1496	0.1700	0.1616	0.1700
				Last	0.1726	0.1758	0.1680	0.1720
0.1	0.2	0.6	1	First	0.7446	0.7832	0.7444	0.7832
				Last	0.7768	0.7908	0.7442	0.7898
0.25	0.25	0.5	0.5	First	0.2132	0.2448	0.2276	0.2448
				Last	0.2350	0.2482	0.2414	0.2458
0	0.1	0.3	0.7	First	0.5624	0.6108	0.5770	0.6108
				Last	0.5928	0.6168	0.5744	0.6106
0	0.05	0.15	0.35	First	0.2436	0.2804	0.2708	0.2804
				Last	0.2668	0.2883	0.2700	0.2844
0	0.15	0.2	0.5	First	0.3376	0.3826	0.3726	0.3826
				Last	0.3706	0.3916	0.3742	0.3880
0	0	0.1	0.6	First	0.4152	0.4602	0.4480	0.4602
				Last	0.4438	0.4678	0.4500	0.4640
0	0	0.05	0.3	First	0.1854	0.2212	0.2116	0.2212
				Last	0.1968	0.2270	0.2108	0.2186

Table B.60. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0438	0.0452	0.0478	0.0452
				Last	0.0482	0.0490	0.0468	0.0448
0	0.1	0.2	0.3	First	0.1014	0.1214	0.1196	0.1214
				Last	0.1160	0.1272	0.1178	0.1202
0	0	0.25	0.25	First	0.0994	0.1152	0.1132	0.1152
				Last	0.1148	0.1236	0.1198	0.1204
0	0.125	0.25	0.25	First	0.0982	0.1126	0.1084	0.1126
				Last	0.1134	0.1162	0.1108	0.1112
0	0	0	0.5	First	0.1570	0.1762	0.1710	0.1762
				Last	0.1718	0.1814	0.1754	0.1770
0.05	0.1	0.3	0.5	First	0.1540	0.1802	0.1796	0.1802
				Last	0.1772	0.1892	0.1834	0.1868
0	0	0.5	0.5	First	0.2160	0.2408	0.2256	0.2408
				Last	0.2392	0.2496	0.2286	0.2448
0	0.25	0.5	0.5	First	0.1858	0.2050	0.1984	0.2050
				Last	0.2036	0.2136	0.1954	0.2084
0	0.5	0.5	1	First	0.3388	0.3872	0.3820	0.3872
				Last	0.3678	0.3998	0.3948	0.3950
0	0.25	0.25	0.5	First	0.1472	0.1698	0.1678	0.1698
				Last	0.1678	0.1750	0.1720	0.1732
0	0.25	0.25	0.25	First	0.0890	0.1026	0.1010	0.1026
				Last	0.1024	0.1096	0.1054	0.1036
0.1	0.2	0.6	1	First	0.3732	0.4210	0.4002	0.4210
				Last	0.3956	0.4288	0.3984	0.4216
0.25	0.25	0.5	0.5	First	0.1002	0.1178	0.1132	0.1178
				Last	0.1178	0.1236	0.1184	0.1182
0	0.1	0.3	0.7	First	0.2486	0.2802	0.2748	0.2802
				Last	0.2748	0.2870	0.2738	0.2818
0	0.05	0.15	0.35	First	0.1186	0.1314	0.1334	0.1314
				Last	0.1310	0.1400	0.1346	0.1330
0	0.15	0.2	0.5	First	0.1602	0.1876	0.1792	0.1876
				Last	0.1826	0.1924	0.1840	0.1882
0	0	0.1	0.6	First	0.2024	0.2336	0.2254	0.2336
				Last	0.2164	0.2422	0.2268	0.2316
0	0	0.05	0.3	First	0.0994	0.1150	0.1098	0.1150
				Last	0.1122	0.1182	0.1166	0.1158

Table B.61. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0498	0.0514	0.0530	0.0514
				Last	0.0528	0.0506	0.0522	0.0496
0	0.1	0.2	0.3	First	0.1496	0.1566	0.1554	0.1566
				Last	0.1646	0.1436	0.1468	0.1536
0	0	0.25	0.25	First	0.1524	0.1580	0.1492	0.1580
				Last	0.1712	0.1508	0.1410	0.1556
0	0.125	0.25	0.25	First	0.1420	0.1418	0.1424	0.1418
				Last	0.1520	0.1306	0.1328	0.1398
0	0	0	0.5	First	0.2362	0.2468	0.2476	0.2468
				Last	0.2524	0.2302	0.2344	0.2446
0.05	0.1	0.3	0.5	First	0.2526	0.2660	0.2528	0.2660
				Last	0.2728	0.2484	0.2380	0.2646
0	0	0.5	0.5	First	0.3206	0.3434	0.3288	0.3434
				Last	0.3456	0.3242	0.3150	0.3402
0	0.25	0.5	0.5	First	0.2886	0.2952	0.2816	0.2952
				Last	0.3042	0.2728	0.2698	0.2910
0	0.5	0.5	1	First	0.5624	0.6032	0.5842	0.6032
				Last	0.6044	0.5634	0.5594	0.5974
0	0.25	0.25	0.5	First	0.2468	0.2466	0.2420	0.2466
				Last	0.2614	0.2352	0.2332	0.2446
0	0.25	0.25	0.25	First	0.1172	0.1186	0.1214	0.1186
				Last	0.1310	0.1124	0.1150	0.1158
0.1	0.2	0.6	1	First	0.5942	0.6302	0.6094	0.6302
				Last	0.6354	0.5952	0.5772	0.6242
0.25	0.25	0.5	0.5	First	0.1622	0.1664	0.1562	0.1664
				Last	0.1776	0.1546	0.1512	0.1652
0	0.1	0.3	0.7	First	0.4100	0.4258	0.4100	0.4258
				Last	0.4286	0.3942	0.3932	0.4192
0	0.05	0.15	0.35	First	0.1822	0.1884	0.1884	0.1884
				Last	0.1956	0.1752	0.1768	0.1874
0	0.15	0.2	0.5	First	0.2592	0.2658	0.2558	0.2658
				Last	0.2712	0.2384	0.2402	0.2600
0	0	0.1	0.6	First	0.3106	0.3258	0.3148	0.3258
				Last	0.3308	0.3074	0.3034	0.3238
0	0	0.05	0.3	First	0.1482	0.1492	0.1474	0.1492
				Last	0.1566	0.1374	0.1338	0.1462

Table B.62. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0574	0.0558	0.0536	0.0558
				Last	0.0568	0.0520	0.0532	0.0546
0	0.1	0.2	0.3	First	0.2628	0.2646	0.2572	0.2646
				Last	0.2808	0.2472	0.2414	0.2628
0	0	0.25	0.25	First	0.2608	0.2692	0.2502	0.2692
				Last	0.2752	0.2488	0.2392	0.2646
0	0.125	0.25	0.25	First	0.2300	0.2334	0.2238	0.2334
				Last	0.2504	0.2184	0.2136	0.2278
0	0	0	0.5	First	0.3608	0.3864	0.3882	0.3864
				Last	0.3890	0.3570	0.3628	0.3812
0.05	0.1	0.3	0.5	First	0.4314	0.4450	0.4228	0.4450
				Last	0.4546	0.4196	0.4000	0.4402
0	0	0.5	0.5	First	0.5504	0.5746	0.5454	0.5746
				Last	0.5756	0.5506	0.5264	0.5720
0	0.25	0.5	0.5	First	0.4872	0.5060	0.4754	0.5060
				Last	0.5112	0.4782	0.4574	0.5012
0	0.5	0.5	1	First	0.8068	0.8242	0.8004	0.8242
				Last	0.8310	0.7952	0.7794	0.8222
0	0.25	0.25	0.5	First	0.4116	0.4292	0.4148	0.4292
				Last	0.4314	0.3958	0.3902	0.4272
0	0.25	0.25	0.25	First	0.1860	0.1908	0.1956	0.1908
				Last	0.2078	0.1810	0.1862	0.1898
0.1	0.2	0.6	1	First	0.8314	0.8440	0.8150	0.8440
				Last	0.8490	0.8186	0.7928	0.8392
0.25	0.25	0.5	0.5	First	0.2540	0.2612	0.2488	0.2612
				Last	0.2760	0.2466	0.2392	0.2582
0	0.1	0.3	0.7	First	0.6512	0.6648	0.6266	0.6648
				Last	0.6702	0.6330	0.6024	0.6636
0	0.05	0.15	0.35	First	0.3084	0.3256	0.3106	0.3256
				Last	0.3298	0.2974	0.2930	0.3194
0	0.15	0.2	0.5	First	0.4360	0.4500	0.4266	0.4500
				Last	0.4618	0.4222	0.4098	0.4424
0	0	0.1	0.6	First	0.5016	0.5282	0.5096	0.5282
				Last	0.5314	0.4936	0.4856	0.5232
0	0	0.05	0.3	First	0.2392	0.2456	0.2382	0.2456
				Last	0.2518	0.2240	0.2222	0.2402

Table B.63. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0560	0.0546	0.0544	0.0546
				Last	0.0574	0.0538	0.0524	0.0538
0	0.1	0.2	0.3	First	0.1242	0.1212	0.1180	0.1212
				Last	0.1396	0.1154	0.1120	0.1188
0	0	0.25	0.25	First	0.1260	0.1328	0.1260	0.1328
				Last	0.1370	0.1220	0.1206	0.1288
0	0.125	0.25	0.25	First	0.1074	0.1124	0.1102	0.1124
				Last	0.1182	0.1026	0.1078	0.1104
0	0	0	0.5	First	0.1880	0.1954	0.1880	0.1954
				Last	0.2054	0.1770	0.1800	0.1918
0.05	0.1	0.3	0.5	First	0.2016	0.2084	0.2010	0.2084
				Last	0.2156	0.1900	0.1934	0.2032
0	0	0.5	0.5	First	0.2612	0.2726	0.2540	0.2726
				Last	0.2810	0.2526	0.2388	0.2708
0	0.25	0.5	0.5	First	0.2262	0.2374	0.2320	0.2374
				Last	0.2450	0.2156	0.2166	0.2342
0	0.5	0.5	1	First	0.4422	0.4594	0.4440	0.4594
				Last	0.4614	0.4250	0.4226	0.4542
0	0.25	0.25	0.5	First	0.1856	0.1936	0.1884	0.1936
				Last	0.1976	0.1754	0.1780	0.1904
0	0.25	0.25	0.25	First	0.1092	0.1044	0.1038	0.1044
				Last	0.1216	0.0988	0.0988	0.1016
0.1	0.2	0.6	1	First	0.4490	0.4766	0.4596	0.4766
				Last	0.4808	0.4494	0.4422	0.4736
0.25	0.25	0.5	0.5	First	0.1268	0.1258	0.1204	0.1258
				Last	0.1428	0.1206	0.1162	0.1232
0	0.1	0.3	0.7	First	0.3066	0.3248	0.3082	0.3248
				Last	0.3308	0.3052	0.2936	0.3220
0	0.05	0.15	0.35	First	0.1416	0.1480	0.1450	0.1480
				Last	0.1526	0.1332	0.1382	0.1444
0	0.15	0.2	0.5	First	0.1934	0.1936	0.1896	0.1936
				Last	0.2130	0.1852	0.1822	0.1914
0	0	0.1	0.6	First	0.2486	0.2672	0.2594	0.2672
				Last	0.2732	0.2462	0.2428	0.2634
0	0	0.05	0.3	First	0.1234	0.1228	0.1226	0.1228
				Last	0.1414	0.1172	0.1194	0.1222

Table B.64. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0518	0.0514	0.0536	0.0514
				Last	0.0514	0.0546	0.0514	0.0496
0	0.1	0.2	0.3	First	0.1642	0.1676	0.1660	0.1676
				Last	0.1810	0.1908	0.1750	0.1886
0	0	0.25	0.25	First	0.1632	0.1694	0.1662	0.1694
				Last	0.1834	0.1956	0.1714	0.1910
0	0.125	0.25	0.25	First	0.1468	0.1450	0.1420	0.1450
				Last	0.1578	0.1626	0.1442	0.1592
0	0	0	0.5	First	0.2370	0.2460	0.2486	0.2460
				Last	0.2770	0.2844	0.2694	0.2764
0.05	0.1	0.3	0.5	First	0.2516	0.2662	0.2620	0.2662
				Last	0.2808	0.3000	0.2824	0.2954
0	0	0.5	0.5	First	0.3508	0.3688	0.3472	0.3688
				Last	0.3968	0.4192	0.3820	0.4108
0	0.25	0.5	0.5	First	0.3026	0.3092	0.2982	0.3092
				Last	0.3422	0.3566	0.3296	0.3514
0	0.5	0.5	1	First	0.5816	0.6078	0.6086	0.6078
				Last	0.6676	0.6864	0.6750	0.6810
0	0.25	0.25	0.5	First	0.2512	0.2554	0.2602	0.2554
				Last	0.2898	0.3004	0.2830	0.2968
0	0.25	0.25	0.25	First	0.1182	0.1236	0.1240	0.1236
				Last	0.1322	0.1398	0.1282	0.1348
0.1	0.2	0.6	1	First	0.6234	0.6402	0.6214	0.6402
				Last	0.6908	0.7136	0.6812	0.7106
0.25	0.25	0.5	0.5	First	0.1628	0.1658	0.1634	0.1658
				Last	0.1780	0.1844	0.1692	0.1852
0	0.1	0.3	0.7	First	0.4278	0.4420	0.4378	0.4420
				Last	0.4886	0.5118	0.4864	0.5060
0	0.05	0.15	0.35	First	0.1876	0.1916	0.1862	0.1916
				Last	0.2060	0.2144	0.2014	0.2110
0	0.15	0.2	0.5	First	0.2572	0.2628	0.2596	0.2628
				Last	0.2862	0.2990	0.2878	0.2888
0	0	0.1	0.6	First	0.3242	0.3410	0.3400	0.3410
				Last	0.3750	0.3948	0.3714	0.3856
0	0	0.05	0.3	First	0.1408	0.1458	0.1466	0.1458
				Last	0.1586	0.1674	0.1544	0.1584

Table B.65. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0532	0.0546	0.0524	0.0546
				Last	0.0512	0.0536	0.0488	0.0498
0	0.1	0.2	0.3	First	0.2634	0.2732	0.2678	0.2732
				Last	0.3048	0.3164	0.2924	0.3130
0	0	0.25	0.25	First	0.2646	0.2700	0.2548	0.2700
				Last	0.3028	0.3140	0.2862	0.3080
0	0.125	0.25	0.25	First	0.2364	0.2398	0.2338	0.2398
				Last	0.2656	0.2696	0.2456	0.2652
0	0	0	0.5	First	0.3818	0.3974	0.4078	0.3974
				Last	0.4380	0.4594	0.4470	0.4520
0.05	0.1	0.3	0.5	First	0.4434	0.4568	0.4386	0.4568
				Last	0.5084	0.5204	0.4814	0.5118
0	0	0.5	0.5	First	0.5694	0.5926	0.5664	0.5926
				Last	0.6410	0.6622	0.6228	0.6618
0	0.25	0.5	0.5	First	0.5098	0.5238	0.5050	0.5238
				Last	0.5662	0.5808	0.5454	0.5784
0	0.5	0.5	1	First	0.8326	0.8360	0.8182	0.8360
				Last	0.8948	0.9046	0.8780	0.8960
0	0.25	0.25	0.5	First	0.4098	0.4166	0.4146	0.4166
				Last	0.4756	0.4892	0.4650	0.4804
0	0.25	0.25	0.25	First	0.1786	0.1816	0.1872	0.1816
				Last	0.2074	0.2136	0.1978	0.2024
0.1	0.2	0.6	1	First	0.8512	0.8600	0.8320	0.8600
				Last	0.9164	0.9256	0.8880	0.9160
0.25	0.25	0.5	0.5	First	0.2712	0.2816	0.2696	0.2816
				Last	0.3032	0.3251	0.2860	0.3188
0	0.1	0.3	0.7	First	0.6684	0.6866	0.6640	0.6866
				Last	0.7616	0.7644	0.7306	0.7590
0	0.05	0.15	0.35	First	0.3196	0.3240	0.3122	0.3240
				Last	0.3592	0.3716	0.3482	0.3632
0	0.15	0.2	0.5	First	0.4488	0.4580	0.4514	0.4580
				Last	0.5158	0.5260	0.4940	0.5178
0	0	0.1	0.6	First	0.5250	0.5336	0.5274	0.5336
				Last	0.5922	0.6060	0.5850	0.6032
0	0	0.05	0.3	First	0.2468	0.2474	0.2496	0.2474
				Last	0.2726	0.2874	0.2656	0.2782

Table B.66. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0540	0.0558	0.0530	0.0558
				Last	0.0538	0.0540	0.0496	0.0500
0	0.1	0.2	0.3	First	0.1354	0.1310	0.1270	0.1310
				Last	0.1462	0.1512	0.1412	0.1450
0	0	0.25	0.25	First	0.1324	0.1344	0.1310	0.1344
				Last	0.1496	0.1566	0.1374	0.1512
0	0.125	0.25	0.25	First	0.1194	0.1216	0.1206	0.1216
				Last	0.1190	0.1254	0.1164	0.1204
0	0	0	0.5	First	0.1980	0.2030	0.2036	0.2030
				Last	0.2230	0.2326	0.2216	0.2290
0.05	0.1	0.3	0.5	First	0.2034	0.2098	0.2086	0.2098
				Last	0.2270	0.2386	0.2214	0.2352
0	0	0.5	0.5	First	0.2690	0.2734	0.2626	0.2734
				Last	0.3016	0.3162	0.2854	0.3114
0	0.25	0.5	0.5	First	0.2436	0.2522	0.2482	0.2522
				Last	0.2706	0.2826	0.2644	0.2738
0	0.5	0.5	1	First	0.4650	0.4778	0.4786	0.4778
				Last	0.5246	0.5475	0.5194	0.5402
0	0.25	0.25	0.5	First	0.1972	0.2000	0.2010	0.2000
				Last	0.2208	0.2302	0.2180	0.2266
0	0.25	0.25	0.25	First	0.1030	0.1080	0.1092	0.1080
				Last	0.1126	0.1170	0.1098	0.1130
0.1	0.2	0.6	1	First	0.4892	0.5006	0.4824	0.5006
				Last	0.5556	0.5722	0.5366	0.5714
0.25	0.25	0.5	0.5	First	0.1330	0.1336	0.1334	0.1336
				Last	0.1430	0.1482	0.1342	0.1426
0	0.1	0.3	0.7	First	0.3228	0.3348	0.3336	0.3348
				Last	0.3800	0.3920	0.3660	0.3846
0	0.05	0.15	0.35	First	0.1506	0.1530	0.1506	0.1530
				Last	0.1622	0.1696	0.1550	0.1622
0	0.15	0.2	0.5	First	0.2202	0.2250	0.2206	0.2250
				Last	0.2374	0.2424	0.2314	0.2418
0	0	0.1	0.6	First	0.2554	0.2636	0.2620	0.2636
				Last	0.2858	0.2972	0.2772	0.2896
0	0	0.05	0.3	First	0.1256	0.1262	0.1230	0.1262
				Last	0.1338	0.1384	0.1278	0.1324

Table B.67. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0532	0.0520	0.0508	0.0520
				Last	0.0566	0.0476	0.0490	0.0512
0	0.1	0.2	0.3	First	0.1892	0.1832	0.1742	0.1832
				Last	0.2074	0.1846	0.1802	0.1958
0	0	0.25	0.25	First	0.1802	0.1810	0.1728	0.1810
				Last	0.1978	0.1794	0.1752	0.1886
0	0.125	0.25	0.25	First	0.1494	0.1520	0.1472	0.1520
				Last	0.1722	0.1502	0.1518	0.1614
0	0	0	0.5	First	0.2822	0.2852	0.2820	0.2852
				Last	0.3120	0.2866	0.2888	0.3056
0.05	0.1	0.3	0.5	First	0.2942	0.3030	0.2994	0.3030
				Last	0.3300	0.3074	0.2974	0.3206
0	0	0.5	0.5	First	0.4106	0.4266	0.4002	0.4266
				Last	0.4593	0.4286	0.4160	0.4556
0	0.25	0.5	0.5	First	0.3504	0.3552	0.3406	0.3552
				Last	0.3810	0.3554	0.3500	0.3776
0	0.5	0.5	1	First	0.6604	0.6836	0.6806	0.6836
				Last	0.7212	0.7002	0.7008	0.7186
0	0.25	0.25	0.5	First	0.2770	0.2860	0.2870	0.2860
				Last	0.3118	0.2884	0.2904	0.3070
0	0.25	0.25	0.25	First	0.1396	0.1356	0.1322	0.1356
				Last	0.1560	0.1374	0.1378	0.1426
0.1	0.2	0.6	1	First	0.7084	0.7314	0.7098	0.7314
				Last	0.7674	0.7424	0.7386	0.7664
0.25	0.25	0.5	0.5	First	0.1666	0.1688	0.1692	0.1688
				Last	0.1896	0.1690	0.1704	0.1796
0	0.1	0.3	0.7	First	0.4852	0.5062	0.4950	0.5062
				Last	0.5362	0.5112	0.5022	0.5346
0	0.05	0.15	0.35	First	0.1982	0.1958	0.2008	0.1958
				Last	0.2260	0.2026	0.2040	0.2124
0	0.15	0.2	0.5	First	0.2888	0.3000	0.2902	0.3000
				Last	0.3226	0.3036	0.3070	0.3182
0	0	0.1	0.6	First	0.3886	0.4060	0.3948	0.4060
				Last	0.4334	0.4074	0.4034	0.4302
0	0	0.05	0.3	First	0.1694	0.1740	0.1742	0.1740
				Last	0.1910	0.1726	0.1768	0.1848

Table B.68. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0524	0.0498	0.0510	0.0498
				Last	0.0558	0.0446	0.0440	0.0498
0	0.1	0.2	0.3	First	0.3040	0.3104	0.3010	0.3104
				Last	0.3348	0.3068	0.3032	0.3256
0	0	0.25	0.25	First	0.2992	0.3064	0.2910	0.3064
				Last	0.3287	0.3092	0.3028	0.3276
0	0.125	0.25	0.25	First	0.2700	0.2740	0.2624	0.2740
				Last	0.3012	0.2738	0.2670	0.2896
0	0	0	0.5	First	0.4426	0.4576	0.4560	0.4576
				Last	0.4936	0.4658	0.4788	0.4904
0.05	0.1	0.3	0.5	First	0.5216	0.5320	0.5070	0.5320
				Last	0.5684	0.5386	0.5270	0.5654
0	0	0.5	0.5	First	0.6568	0.6718	0.6414	0.6718
				Last	0.7197	0.6974	0.6716	0.7166
0	0.25	0.5	0.5	First	0.5694	0.5816	0.5602	0.5816
				Last	0.6230	0.5976	0.5826	0.6202
0	0.5	0.5	1	First	0.8950	0.8956	0.8812	0.8956
				Last	0.9278	0.9116	0.9056	0.9246
0	0.25	0.25	0.5	First	0.4944	0.5008	0.4914	0.5008
				Last	0.5426	0.5118	0.5086	0.5290
0	0.25	0.25	0.25	First	0.2164	0.2158	0.2132	0.2158
				Last	0.2428	0.2230	0.2218	0.2306
0.1	0.2	0.6	1	First	0.9242	0.9230	0.8978	0.9230
				Last	0.9454	0.9322	0.9166	0.9440
0.25	0.25	0.5	0.5	First	0.3154	0.3184	0.2956	0.3184
				Last	0.3412	0.3198	0.3096	0.3376
0	0.1	0.3	0.7	First	0.7470	0.7508	0.7282	0.7508
				Last	0.7948	0.7744	0.7546	0.7894
0	0.05	0.15	0.35	First	0.3516	0.3538	0.3400	0.3538
				Last	0.3912	0.3580	0.3540	0.3830
0	0.15	0.2	0.5	First	0.5342	0.5362	0.5118	0.5362
				Last	0.5722	0.5442	0.5334	0.5644
0	0	0.1	0.6	First	0.6054	0.6224	0.6112	0.6224
				Last	0.6642	0.6366	0.6344	0.6624
0	0	0.05	0.3	First	0.2780	0.2832	0.2840	0.2832
				Last	0.3108	0.2898	0.2892	0.3036

Table B.69. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0500	0.0514	0.0510	0.0514
				Last	0.0562	0.0500	0.0502	0.0520
0	0.1	0.2	0.3	First	0.1438	0.1448	0.1420	0.1448
				Last	0.1640	0.1464	0.1516	0.1566
0	0	0.25	0.25	First	0.1470	0.1486	0.1430	0.1486
				Last	0.1638	0.1422	0.1404	0.1514
0	0.125	0.25	0.25	First	0.1234	0.1248	0.1272	0.1248
				Last	0.1380	0.1232	0.1194	0.1308
0	0	0	0.5	First	0.2090	0.2120	0.2122	0.2120
				Last	0.2394	0.2178	0.2198	0.2262
0.05	0.1	0.3	0.5	First	0.2226	0.2254	0.2200	0.2254
				Last	0.2500	0.2270	0.2208	0.2398
0	0	0.5	0.5	First	0.3164	0.3184	0.3002	0.3184
				Last	0.3458	0.3220	0.3124	0.3386
0	0.25	0.5	0.5	First	0.2706	0.2764	0.2698	0.2764
				Last	0.3060	0.2810	0.2774	0.2970
0	0.5	0.5	1	First	0.5348	0.5454	0.5426	0.5454
				Last	0.5803	0.5534	0.5570	0.5778
0	0.25	0.25	0.5	First	0.2224	0.2236	0.2198	0.2236
				Last	0.2492	0.2234	0.2272	0.2376
0	0.25	0.25	0.25	First	0.1092	0.1116	0.1110	0.1116
				Last	0.1234	0.1100	0.1138	0.1174
0.1	0.2	0.6	1	First	0.5562	0.5626	0.5404	0.5626
				Last	0.6985	0.5796	0.5688	0.6054
0.25	0.25	0.5	0.5	First	0.1442	0.1430	0.1378	0.1430
				Last	0.1608	0.1424	0.1444	0.1546
0	0.1	0.3	0.7	First	0.3720	0.3840	0.3806	0.3840
				Last	0.4196	0.3982	0.3960	0.4164
0	0.05	0.15	0.35	First	0.1652	0.1626	0.1606	0.1626
				Last	0.1842	0.1678	0.1668	0.1786
0	0.15	0.2	0.5	First	0.2294	0.2292	0.2246	0.2292
				Last	0.2550	0.2282	0.2308	0.2410
0	0	0.1	0.6	First	0.2906	0.2996	0.2900	0.2996
				Last	0.3180	0.2942	0.2956	0.3172
0	0	0.05	0.3	First	0.1432	0.1324	0.1278	0.1324
				Last	0.1608	0.1386	0.1354	0.1472

Table B.70. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0490	0.0474	0.0522	0.0474
				Last	0.0406	0.0494	0.0466	0.0482
0	0.1	0.2	0.3	First	0.1914	0.2024	0.1956	0.2024
				Last	0.1742	0.2028	0.1900	0.2052
0	0	0.25	0.25	First	0.1794	0.1948	0.1846	0.1948
				Last	0.1672	0.1962	0.1826	0.2022
0	0.125	0.25	0.25	First	0.1658	0.1800	0.1704	0.1800
				Last	0.1530	0.1802	0.1676	0.1820
0	0	0	0.5	First	0.2870	0.3090	0.3062	0.3090
				Last	0.2748	0.3230	0.3160	0.3310
0.05	0.1	0.3	0.5	First	0.3142	0.3416	0.3262	0.3416
				Last	0.2992	0.3452	0.3274	0.3500
0	0	0.5	0.5	First	0.4292	0.4612	0.4370	0.4612
				Last	0.4124	0.4722	0.4364	0.4768
0	0.25	0.5	0.5	First	0.3574	0.3790	0.3670	0.3790
				Last	0.3384	0.3904	0.3760	0.3968
0	0.5	0.5	1	First	0.7122	0.7540	0.7434	0.7540
				Last	0.7018	0.7586	0.7450	0.7690
0	0.25	0.25	0.5	First	0.2900	0.3152	0.3066	0.3152
				Last	0.2680	0.3092	0.3014	0.3194
0	0.25	0.25	0.25	First	0.1246	0.1334	0.1358	0.1334
				Last	0.1146	0.1384	0.1348	0.1398
0.1	0.2	0.6	1	First	0.7336	0.7742	0.7548	0.7742
				Last	0.7256	0.7812	0.7568	0.7936
0.25	0.25	0.5	0.5	First	0.1854	0.1962	0.1888	0.1962
				Last	0.1706	0.1996	0.1846	0.2006
0	0.1	0.3	0.7	First	0.5268	0.5636	0.5494	0.5636
				Last	0.5232	0.5814	0.5576	0.5866
0	0.05	0.15	0.35	First	0.2104	0.2210	0.2180	0.2210
				Last	0.1916	0.2252	0.2142	0.2288
0	0.15	0.2	0.5	First	0.3056	0.3246	0.3198	0.3246
				Last	0.2874	0.3358	0.3278	0.3412
0	0	0.1	0.6	First	0.3968	0.4314	0.4148	0.4314
				Last	0.3796	0.4406	0.4294	0.4488
0	0	0.05	0.3	First	0.1728	0.1838	0.1820	0.1838
				Last	0.1602	0.1888	0.1782	0.1898

Table B.71. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0500	0.0526	0.0516	0.0526
				Last	0.0420	0.0528	0.0478	0.0526
0	0.1	0.2	0.3	First	0.3282	0.3482	0.3298	0.3482
				Last	0.3178	0.3564	0.3284	0.3648
0	0	0.25	0.25	First	0.3192	0.3510	0.3328	0.3510
				Last	0.3044	0.3530	0.3282	0.3612
0	0.125	0.25	0.25	First	0.2800	0.2992	0.2898	0.2992
				Last	0.2594	0.2960	0.2806	0.3062
0	0	0	0.5	First	0.4650	0.5100	0.5112	0.5100
				Last	0.4520	0.5286	0.5228	0.5352
0.05	0.1	0.3	0.5	First	0.5646	0.5948	0.5586	0.5948
				Last	0.5488	0.5938	0.5598	0.6098
0	0	0.5	0.5	First	0.6852	0.7320	0.7022	0.7320
				Last	0.6808	0.7456	0.7068	0.7564
0	0.25	0.5	0.5	First	0.6160	0.6498	0.6198	0.6498
				Last	0.6100	0.6618	0.6268	0.6720
0	0.5	0.5	1	First	0.9166	0.9322	0.9206	0.9322
				Last	0.9200	0.9368	0.9240	0.9432
0	0.25	0.25	0.5	First	0.5284	0.5564	0.5366	0.5564
				Last	0.5176	0.5614	0.5444	0.5710
0	0.25	0.25	0.25	First	0.2256	0.2452	0.2396	0.2452
				Last	0.2072	0.2432	0.2354	0.2500
0.1	0.2	0.6	1	First	0.9376	0.9500	0.9314	0.9500
				Last	0.9418	0.9544	0.9362	0.9606
0.25	0.25	0.5	0.5	First	0.3160	0.3414	0.3174	0.3414
				Last	0.3026	0.3448	0.3180	0.3490
0	0.1	0.3	0.7	First	0.7984	0.8180	0.7934	0.8180
				Last	0.7952	0.8232	0.7962	0.8380
0	0.05	0.15	0.35	First	0.3816	0.4086	0.3908	0.4086
				Last	0.3602	0.4108	0.3850	0.4226
0	0.15	0.2	0.5	First	0.5646	0.5894	0.5716	0.5894
				Last	0.5426	0.5896	0.5652	0.6056
0	0	0.1	0.6	First	0.6412	0.6728	0.6520	0.6728
				Last	0.6386	0.6856	0.6662	0.6988
0	0	0.05	0.3	First	0.2894	0.3040	0.2964	0.3040
				Last	0.2764	0.3174	0.3016	0.3204

Table B.72. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0450	0.0484	0.0518	0.0484
				Last	0.0468	0.0466	0.0472	0.0482
0	0.1	0.2	0.3	First	0.1562	0.1660	0.1596	0.1660
				Last	0.1426	0.1660	0.1584	0.1710
0	0	0.25	0.25	First	0.1458	0.1514	0.1428	0.1514
				Last	0.1250	0.1538	0.1418	0.1590
0	0.125	0.25	0.25	First	0.1352	0.1404	0.1358	0.1404
				Last	0.1220	0.1384	0.1276	0.1414
0	0	0	0.5	First	0.2262	0.2440	0.2388	0.2440
				Last	0.2134	0.2456	0.2384	0.2486
0.05	0.1	0.3	0.5	First	0.2406	0.2536	0.2430	0.2536
				Last	0.2216	0.2568	0.2434	0.2646
0	0	0.5	0.5	First	0.3258	0.3484	0.3314	0.3484
				Last	0.3112	0.3598	0.3312	0.3612
0	0.25	0.5	0.5	First	0.2770	0.3048	0.2900	0.3048
				Last	0.2548	0.2974	0.2838	0.3112
0	0.5	0.5	1	First	0.5554	0.5898	0.5912	0.5898
				Last	0.5440	0.6042	0.5888	0.6156
0	0.25	0.25	0.5	First	0.2224	0.2344	0.2254	0.2344
				Last	0.2048	0.2396	0.2286	0.2422
0	0.25	0.25	0.25	First	0.1132	0.1200	0.1176	0.1200
				Last	0.1038	0.1158	0.1084	0.1276
0.1	0.2	0.6	1	First	0.5778	0.6078	0.5878	0.6078
				Last	0.5626	0.6176	0.5878	0.6264
0.25	0.25	0.5	0.5	First	0.1478	0.1570	0.1510	0.1570
				Last	0.1394	0.1592	0.1506	0.1608
0	0.1	0.3	0.7	First	0.3978	0.4246	0.4136	0.4246
				Last	0.3718	0.4262	0.4072	0.4432
0	0.05	0.15	0.35	First	0.1722	0.1858	0.1852	0.1858
				Last	0.1590	0.1842	0.1776	0.1908
0	0.15	0.2	0.5	First	0.2128	0.2372	0.2330	0.2372
				Last	0.2028	0.2318	0.2270	0.2402
0	0	0.1	0.6	First	0.3010	0.3188	0.3128	0.3188
				Last	0.2864	0.3286	0.3162	0.3320
0	0	0.05	0.3	First	0.1414	0.1508	0.1402	0.1508
				Last	0.1262	0.1476	0.1410	0.1538

Table B.73. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0478	0.0470	0.0468	0.0470
				Last	0.0460	0.0452	0.0444	0.0440
0	0.1	0.2	0.3	First	0.1754	0.1836	0.1886	0.1836
				Last	0.2112	0.2172	0.2170	0.2176
0	0	0.25	0.25	First	0.1768	0.1862	0.1800	0.1862
				Last	0.2112	0.2160	0.2074	0.2162
0	0.125	0.25	0.25	First	0.1632	0.1660	0.1678	0.1660
				Last	0.1854	0.1876	0.1824	0.1902
0	0	0	0.5	First	0.2722	0.2874	0.2944	0.2874
				Last	0.3342	0.3448	0.3506	0.3556
0.05	0.1	0.3	0.5	First	0.3032	0.3180	0.3190	0.3180
				Last	0.3630	0.3794	0.3700	0.3810
0	0	0.5	0.5	First	0.4262	0.4558	0.4318	0.4558
				Last	0.5074	0.5242	0.5044	0.5320
0	0.25	0.5	0.5	First	0.3446	0.3722	0.3716	0.3722
				Last	0.4182	0.4242	0.4254	0.4334
0	0.5	0.5	1	First	0.6978	0.7234	0.7278	0.7234
				Last	0.7976	0.8144	0.8162	0.8168
0	0.25	0.25	0.5	First	0.2902	0.3070	0.3174	0.3070
				Last	0.3434	0.3552	0.3576	0.3590
0	0.25	0.25	0.25	First	0.1266	0.1340	0.1414	0.1340
				Last	0.1462	0.1526	0.1540	0.1586
0.1	0.2	0.6	1	First	0.7222	0.7534	0.7424	0.7534
				Last	0.8192	0.8336	0.8274	0.8398
0.25	0.25	0.5	0.5	First	0.1888	0.1932	0.1918	0.1932
				Last	0.2170	0.2232	0.2172	0.2228
0	0.1	0.3	0.7	First	0.5050	0.5324	0.5244	0.5324
				Last	0.6018	0.6228	0.6120	0.6288
0	0.05	0.15	0.35	First	0.2074	0.2286	0.2290	0.2286
				Last	0.2502	0.2636	0.2626	0.2676
0	0.15	0.2	0.5	First	0.3120	0.3278	0.3348	0.3278
				Last	0.3680	0.3786	0.3762	0.3810
0	0	0.1	0.6	First	0.3942	0.4158	0.4214	0.4158
				Last	0.4694	0.4812	0.4794	0.4850
0	0	0.05	0.3	First	0.1662	0.1738	0.1750	0.1738
				Last	0.1934	0.1974	0.1994	0.2012

Table B.74. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0478	0.0500	0.0530	0.0500
				Last	0.0510	0.0520	0.0530	0.0512
0	0.1	0.2	0.3	First	0.3248	0.3328	0.3246	0.3328
				Last	0.3794	0.3812	0.3744	0.3872
0	0	0.25	0.25	First	0.3082	0.3344	0.3252	0.3344
				Last	0.3682	0.3830	0.3688	0.3868
0	0.125	0.25	0.25	First	0.2746	0.2808	0.2816	0.2808
				Last	0.3282	0.3406	0.3322	0.3484
0	0	0	0.5	First	0.4680	0.4980	0.5142	0.4980
				Last	0.5562	0.5826	0.5906	0.5962
0.05	0.1	0.3	0.5	First	0.5392	0.5514	0.5344	0.5514
				Last	0.6368	0.6444	0.6274	0.6478
0	0	0.5	0.5	First	0.6654	0.6934	0.6734	0.6934
				Last	0.7700	0.7918	0.7712	0.7962
0	0.25	0.5	0.5	First	0.6130	0.6332	0.6188	0.6332
				Last	0.7106	0.7260	0.7102	0.7338
0	0.5	0.5	1	First	0.9132	0.9192	0.9008	0.9192
				Last	0.9592	0.9610	0.9588	0.9642
0	0.25	0.25	0.5	First	0.5126	0.5290	0.5236	0.5290
				Last	0.6070	0.6128	0.6058	0.6164
0	0.25	0.25	0.25	First	0.2272	0.2406	0.2458	0.2406
				Last	0.2664	0.2700	0.2752	0.2795
0.1	0.2	0.6	1	First	0.9304	0.9360	0.9150	0.9360
				Last	0.9758	0.9768	0.9682	0.9776
0.25	0.25	0.5	0.5	First	0.3020	0.3252	0.3178	0.3252
				Last	0.3714	0.3830	0.3734	0.3878
0	0.1	0.3	0.7	First	0.7966	0.8044	0.7796	0.8044
				Last	0.8806	0.8796	0.8600	0.8848
0	0.05	0.15	0.35	First	0.3778	0.3850	0.3850	0.3850
				Last	0.4408	0.4484	0.4412	0.4528
0	0.15	0.2	0.5	First	0.5380	0.5528	0.5454	0.5528
				Last	0.6370	0.6442	0.6364	0.6464
0	0	0.1	0.6	First	0.6300	0.6530	0.6466	0.6530
				Last	0.7362	0.7512	0.7390	0.7604
0	0	0.05	0.3	First	0.2832	0.2992	0.3080	0.2992
				Last	0.3458	0.3612	0.3592	0.3584

Table B.75. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0492	0.0500	0.0494	0.0500
				Last	0.0494	0.0494	0.0494	0.0518
0	0.1	0.2	0.3	First	0.1434	0.1506	0.1528	0.1506
				Last	0.1672	0.1736	0.1698	0.1798
0	0	0.25	0.25	First	0.1488	0.1592	0.1550	0.1592
				Last	0.1654	0.1720	0.1716	0.1781
0	0.125	0.25	0.25	First	0.1392	0.1486	0.1490	0.1486
				Last	0.1496	0.1562	0.1570	0.1600
0	0	0	0.5	First	0.2086	0.2156	0.2260	0.2156
				Last	0.2450	0.2594	0.2630	0.2644
0.05	0.1	0.3	0.5	First	0.2276	0.2436	0.2480	0.2436
				Last	0.2640	0.2756	0.2754	0.2800
0	0	0.5	0.5	First	0.3132	0.3280	0.3222	0.3280
				Last	0.3808	0.3930	0.3762	0.3960
0	0.25	0.5	0.5	First	0.2684	0.2864	0.2844	0.2864
				Last	0.3128	0.3272	0.3264	0.3308
0	0.5	0.5	1	First	0.5556	0.5758	0.5810	0.5758
				Last	0.6404	0.6546	0.6616	0.6672
0	0.25	0.25	0.5	First	0.2168	0.2316	0.2390	0.2316
				Last	0.2656	0.2690	0.2758	0.2788
0	0.25	0.25	0.25	First	0.1130	0.1224	0.1194	0.1224
				Last	0.1270	0.1286	0.1346	0.1416
0.1	0.2	0.6	1	First	0.5590	0.5824	0.5700	0.5824
				Last	0.6526	0.6696	0.6650	0.6730
0.25	0.25	0.5	0.5	First	0.1408	0.1466	0.1476	0.1466
				Last	0.1676	0.1696	0.1624	0.1723
0	0.1	0.3	0.7	First	0.3860	0.4046	0.4038	0.4046
				Last	0.4538	0.4714	0.4614	0.4736
0	0.05	0.15	0.35	First	0.1676	0.1748	0.1778	0.1748
				Last	0.1902	0.1990	0.1956	0.1236
0	0.15	0.2	0.5	First	0.2264	0.2362	0.2458	0.2362
				Last	0.2662	0.2780	0.2784	0.2796
0	0	0.1	0.6	First	0.3042	0.3178	0.3178	0.3178
				Last	0.3562	0.3652	0.3682	0.3723
0	0	0.05	0.3	First	0.1388	0.1440	0.1472	0.1440
				Last	0.1536	0.1574	0.1622	0.1706

Table B.76. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0454	0.0470	0.0492	0.0470
				Last	0.0530	0.0538	0.0472	0.0488
0	0.1	0.2	0.3	First	0.1998	0.2086	0.2100	0.2086
				Last	0.2290	0.2340	0.2200	0.2396
0	0	0.25	0.25	First	0.2080	0.2130	0.2024	0.2130
				Last	0.2306	0.2318	0.2130	0.2462
0	0.125	0.25	0.25	First	0.1682	0.1774	0.1810	0.1774
				Last	0.1918	0.1992	0.1866	0.2066
0	0	0	0.5	First	0.3292	0.3408	0.3392	0.3408
				Last	0.3772	0.3876	0.3766	0.3950
0.05	0.1	0.3	0.5	First	0.3338	0.3496	0.3414	0.3496
				Last	0.3812	0.3912	0.3736	0.3924
0	0	0.5	0.5	First	0.4720	0.5034	0.4752	0.5034
				Last	0.5330	0.5476	0.5150	0.5514
0	0.25	0.5	0.5	First	0.3982	0.4166	0.4026	0.4166
				Last	0.4536	0.4664	0.4454	0.4681
0	0.5	0.5	1	First	0.7624	0.7828	0.7766	0.7828
				Last	0.8256	0.8390	0.8350	0.8402
0	0.25	0.25	0.5	First	0.3190	0.3318	0.3288	0.3318
				Last	0.3648	0.3692	0.3582	0.3706
0	0.25	0.25	0.25	First	0.1372	0.1446	0.1448	0.1446
				Last	0.1590	0.1648	0.1582	0.1734
0.1	0.2	0.6	1	First	0.7922	0.8244	0.8010	0.8244
				Last	0.8464	0.8692	0.8510	0.8712
0.25	0.25	0.5	0.5	First	0.2188	0.2190	0.2090	0.2190
				Last	0.2410	0.2460	0.2266	0.2535
0	0.1	0.3	0.7	First	0.5806	0.6114	0.6022	0.6114
				Last	0.6426	0.6642	0.6486	0.6732
0	0.05	0.15	0.35	First	0.2334	0.2414	0.2344	0.2414
				Last	0.2628	0.2704	0.2590	0.2784
0	0.15	0.2	0.5	First	0.3498	0.3692	0.3640	0.3692
				Last	0.4042	0.4050	0.3972	0.4122
0	0	0.1	0.6	First	0.4482	0.4624	0.4614	0.4624
				Last	0.5010	0.5146	0.5044	0.5242
0	0	0.05	0.3	First	0.1904	0.1962	0.2000	0.1962
				Last	0.2160	0.2260	0.2150	0.2292

Table B.77. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0488	0.0452	0.0482	0.0452
				Last	0.0510	0.0522	0.0502	0.0476
0	0.1	0.2	0.3	First	0.3772	0.3866	0.3704	0.3866
				Last	0.4150	0.4140	0.3960	0.4180
0	0	0.25	0.25	First	0.3558	0.3744	0.3530	0.3744
				Last	0.4014	0.4156	0.3902	0.4254
0	0.125	0.25	0.25	First	0.3138	0.3226	0.3022	0.3226
				Last	0.3516	0.3554	0.3336	0.3628
0	0	0	0.5	First	0.5188	0.5552	0.5540	0.5552
				Last	0.5938	0.6134	0.6088	0.6166
0.05	0.1	0.3	0.5	First	0.6078	0.6218	0.5914	0.6218
				Last	0.6724	0.6764	0.6466	0.6826
0	0	0.5	0.5	First	0.7458	0.7794	0.7434	0.7794
				Last	0.8116	0.8306	0.7984	0.8346
0	0.25	0.5	0.5	First	0.6722	0.6976	0.6696	0.6976
				Last	0.7406	0.7546	0.7260	0.7550
0	0.5	0.5	1	First	0.9488	0.9554	0.9496	0.9554
				Last	0.9742	0.9762	0.9702	0.9770
0	0.25	0.25	0.5	First	0.5904	0.6000	0.5912	0.6000
				Last	0.6494	0.6584	0.6380	0.6628
0	0.25	0.25	0.25	First	0.2572	0.2570	0.2542	0.2570
				Last	0.2922	0.2952	0.2824	0.3110
0.1	0.2	0.6	1	First	0.9656	0.9706	0.9570	0.9706
				Last	0.9838	0.9838	0.9752	0.9856
0.25	0.25	0.5	0.5	First	0.3566	0.3766	0.3642	0.3766
				Last	0.4086	0.4214	0.3912	0.4282
0	0.1	0.3	0.7	First	0.8522	0.8676	0.8456	0.8676
				Last	0.9082	0.9070	0.8916	0.9120
0	0.05	0.15	0.35	First	0.4254	0.4460	0.4288	0.4460
				Last	0.4778	0.4860	0.4614	0.4878
0	0.15	0.2	0.5	First	0.5914	0.6120	0.6020	0.6120
				Last	0.6578	0.6712	0.6460	0.6726
0	0	0.1	0.6	First	0.7112	0.7312	0.7096	0.7312
				Last	0.7748	0.7832	0.7652	0.7872
0	0	0.05	0.3	First	0.3194	0.3318	0.3284	0.3318
				Last	0.3664	0.3768	0.3650	0.3852

Table B.78. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0546	0.0520	0.0516	0.0520
				Last	0.0526	0.0526	0.0510	0.0536
0	0.1	0.2	0.3	First	0.1618	0.1620	0.1562	0.1620
				Last	0.1738	0.1736	0.1672	0.1762
0	0	0.25	0.25	First	0.1624	0.1634	0.1622	0.1634
				Last	0.1832	0.1866	0.1718	0.1942
0	0.125	0.25	0.25	First	0.1342	0.1408	0.1370	0.1408
				Last	0.1464	0.1498	0.1464	0.1527
0	0	0	0.5	First	0.2572	0.2666	0.2698	0.2666
				Last	0.2908	0.2970	0.2894	0.3026
0.05	0.1	0.3	0.5	First	0.2664	0.2784	0.2700	0.2784
				Last	0.3000	0.3066	0.2892	0.3162
0	0	0.5	0.5	First	0.3588	0.3836	0.3678	0.3836
				Last	0.4106	0.4280	0.4056	0.4332
0	0.25	0.5	0.5	First	0.3118	0.3210	0.3124	0.3210
				Last	0.3508	0.3602	0.3414	0.3610
0	0.5	0.5	1	First	0.6172	0.6408	0.6336	0.6408
				Last	0.6808	0.6940	0.6858	0.6960
0	0.25	0.25	0.5	First	0.2582	0.2680	0.2608	0.2680
				Last	0.2942	0.3036	0.2922	0.3122
0	0.25	0.25	0.25	First	0.1298	0.1346	0.1362	0.1346
				Last	0.1420	0.1452	0.1392	0.1644
0.1	0.2	0.6	1	First	0.6262	0.6530	0.6336	0.6530
				Last	0.7018	0.7220	0.6946	0.7240
0.25	0.25	0.5	0.5	First	0.1612	0.1630	0.1550	0.1630
				Last	0.1808	0.1876	0.1702	0.1891
0	0.1	0.3	0.7	First	0.4402	0.4616	0.4522	0.4616
				Last	0.4940	0.5030	0.4940	0.5156
0	0.05	0.15	0.35	First	0.1924	0.1914	0.1904	0.1914
				Last	0.2092	0.2166	0.2046	0.2256
0	0.15	0.2	0.5	First	0.2692	0.2782	0.2810	0.2782
				Last	0.3020	0.3106	0.2984	0.3194
0	0	0.1	0.6	First	0.3366	0.3534	0.3574	0.3534
				Last	0.3912	0.4092	0.4030	0.4127
0	0	0.05	0.3	First	0.1512	0.1470	0.1476	0.1470
				Last	0.1742	0.1752	0.1644	0.1788

Table B.79. Normal, 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0470	0.0470	0.0468	0.0470
				Last	0.0546	0.0456	0.0488	0.0462
0	0.1	0.2	0.3	First	0.2218	0.2244	0.2270	0.2244
				Last	0.2432	0.2254	0.2308	0.2476
0	0	0.25	0.25	First	0.2168	0.2212	0.2092	0.2212
				Last	0.2340	0.2164	0.2154	0.2402
0	0.125	0.25	0.25	First	0.1960	0.2026	0.1924	0.2026
				Last	0.2116	0.1922	0.1974	0.2160
0	0	0	0.5	First	0.3528	0.3646	0.3632	0.3646
				Last	0.3848	0.3720	0.3806	0.3850
0.05	0.1	0.3	0.5	First	0.3830	0.3892	0.3716	0.3892
				Last	0.4144	0.3986	0.3932	0.4226
0	0	0.5	0.5	First	0.5126	0.5434	0.5146	0.5434
				Last	0.5620	0.5552	0.5380	0.5764
0	0.25	0.5	0.5	First	0.4522	0.4736	0.4622	0.4736
				Last	0.4978	0.4782	0.4728	0.5018
0	0.5	0.5	1	First	0.8120	0.8422	0.8386	0.8422
				Last	0.8586	0.8536	0.8578	0.8704
0	0.25	0.25	0.5	First	0.3604	0.3766	0.3714	0.3766
				Last	0.3976	0.3820	0.3910	0.3984
0	0.25	0.25	0.25	First	0.1636	0.1676	0.1620	0.1676
				Last	0.1754	0.1620	0.1652	0.1816
0.1	0.2	0.6	1	First	0.8474	0.8624	0.8466	0.8624
				Last	0.8878	0.8814	0.8742	0.8962
0.25	0.25	0.5	0.5	First	0.2150	0.2238	0.2110	0.2238
				Last	0.2396	0.2214	0.2198	0.2420
0	0.1	0.3	0.7	First	0.6136	0.6448	0.6318	0.6448
				Last	0.6680	0.6608	0.6598	0.6788
0	0.05	0.15	0.35	First	0.2640	0.2682	0.2596	0.2682
				Last	0.2822	0.2636	0.2646	0.2778
0	0.15	0.2	0.5	First	0.3752	0.3892	0.3844	0.3892
				Last	0.4154	0.3966	0.4038	0.4158
0	0	0.1	0.6	First	0.4708	0.4880	0.4840	0.4880
				Last	0.5158	0.5044	0.5092	0.5190
0	0	0.05	0.3	First	0.2066	0.2124	0.2144	0.2124
				Last	0.2312	0.2148	0.2218	0.2386

Table B.80. Exponential, 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0492	0.0470	0.0472	0.0470
				Last	0.0518	0.0440	0.0464	0.0438
0	0.1	0.2	0.3	First	0.3996	0.4194	0.4088	0.4194
				Last	0.4374	0.4204	0.4206	0.4418
0	0	0.25	0.25	First	0.3946	0.4116	0.3872	0.4116
				Last	0.4314	0.4092	0.3962	0.4392
0	0.125	0.25	0.25	First	0.3326	0.3464	0.3350	0.3464
				Last	0.3694	0.3476	0.3498	0.3698
0	0	0	0.5	First	0.5694	0.5994	0.5972	0.5994
				Last	0.6248	0.6136	0.6262	0.6358
0.05	0.1	0.3	0.5	First	0.6650	0.6844	0.6568	0.6844
				Last	0.7182	0.6984	0.6798	0.7184
0	0	0.5	0.5	First	0.7858	0.8156	0.7856	0.8156
				Last	0.8294	0.8322	0.8120	0.8442
0	0.25	0.5	0.5	First	0.7230	0.7444	0.7218	0.7444
				Last	0.7748	0.7650	0.7518	0.7836
0	0.5	0.5	1	First	0.9700	0.9752	0.9652	0.9752
				Last	0.9828	0.9804	0.9790	0.9836
0	0.25	0.25	0.5	First	0.6406	0.6622	0.6460	0.6622
				Last	0.6910	0.6698	0.6700	0.6982
0	0.25	0.25	0.25	First	0.2710	0.2844	0.2790	0.2844
				Last	0.2962	0.2814	0.2830	0.3030
0.1	0.2	0.6	1	First	0.9758	0.9804	0.9700	0.9804
				Last	0.9872	0.9850	0.9804	0.9884
0.25	0.25	0.5	0.5	First	0.3744	0.3918	0.3784	0.3918
				Last	0.4216	0.4092	0.3974	0.4248
0	0.1	0.3	0.7	First	0.8838	0.8924	0.8690	0.8924
				Last	0.9214	0.9100	0.8992	0.9288
0	0.05	0.15	0.35	First	0.4686	0.4774	0.4596	0.4774
				Last	0.5160	0.4900	0.4836	0.5185
0	0.15	0.2	0.5	First	0.6536	0.6670	0.6452	0.6670
				Last	0.6990	0.6808	0.6740	0.7026
0	0	0.1	0.6	First	0.7542	0.7750	0.7610	0.7750
				Last	0.8066	0.7948	0.7888	0.8112
0	0	0.05	0.3	First	0.3564	0.3810	0.3704	0.3810
				Last	0.3962	0.3776	0.3836	0.4006

Table B.81. T with 3 d.f., 4 Treatments - 2 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	First	0.0562	0.0502	0.0528	0.0502
				Last	0.0576	0.0490	0.0516	0.0522
0	0.1	0.2	0.3	First	0.1770	0.1736	0.1714	0.1736
				Last	0.1922	0.1772	0.1774	0.1934
0	0	0.25	0.25	First	0.1754	0.1816	0.1700	0.1816
				Last	0.1960	0.1810	0.1788	0.1984
0	0.125	0.25	0.25	First	0.1532	0.1542	0.1488	0.1542
				Last	0.1722	0.1528	0.1544	0.1794
0	0	0	0.5	First	0.2740	0.2862	0.2880	0.2862
				Last	0.2938	0.2810	0.2900	0.2988
0.05	0.1	0.3	0.5	First	0.2848	0.2976	0.2946	0.2976
				Last	0.3162	0.3010	0.3064	0.3168
0	0	0.5	0.5	First	0.3868	0.4082	0.3906	0.4082
				Last	0.4364	0.4182	0.4032	0.4402
0	0.25	0.5	0.5	First	0.3510	0.3632	0.3554	0.3632
				Last	0.3848	0.3664	0.3608	0.3870
0	0.5	0.5	1	First	0.6526	0.6774	0.6662	0.6774
				Last	0.6966	0.6880	0.6950	0.7106
0	0.25	0.25	0.5	First	0.2594	0.2618	0.2690	0.2618
				Last	0.2852	0.2716	0.2822	0.2873
0	0.25	0.25	0.25	First	0.1322	0.1368	0.1356	0.1368
				Last	0.1506	0.1338	0.1360	0.1564
0.1	0.2	0.6	1	First	0.6810	0.7086	0.6910	0.7086
				Last	0.7280	0.7202	0.7124	0.7414
0.25	0.25	0.5	0.5	First	0.1742	0.1784	0.1716	0.1784
				Last	0.1936	0.1776	0.1784	0.1970
0	0.1	0.3	0.7	First	0.4832	0.5074	0.4910	0.5074
				Last	0.5228	0.5136	0.5168	0.5338
0	0.05	0.15	0.35	First	0.2074	0.2070	0.1984	0.2070
				Last	0.2260	0.2064	0.2124	0.2338
0	0.15	0.2	0.5	First	0.2904	0.3002	0.3054	0.3002
				Last	0.3168	0.2996	0.3098	0.3261
0	0	0.1	0.6	First	0.3826	0.4002	0.3944	0.4002
				Last	0.4210	0.4054	0.4080	0.4266
0	0	0.05	0.3	First	0.1640	0.1654	0.1624	0.1654
				Last	0.1856	0.1668	0.1704	0.1910

Table B.82. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0516	0.0512	0.0516
					Last	0.0498	0.0564	0.0530	0.0556
0.05	0.15	0.25	0.35	0.45	First	0.2952	0.3116	0.3038	0.3116
					Last	0.2790	0.3210	0.3086	0.3136
0	0.025	0.075	0.175	0.375	First	0.2582	0.2658	0.2648	0.2658
					Last	0.2464	0.2746	0.2648	0.2694
0	0	0	0	0.5	First	0.2892	0.3014	0.3068	0.3014
					Last	0.2746	0.3056	0.3052	0.3012
0	0	0	0.125	0.25	First	0.1702	0.1756	0.1750	0.1756
					Last	0.1570	0.1794	0.1708	0.1774
0	0	0.125	0.25	0.25	First	0.2076	0.2154	0.2104	0.2154
					Last	0.1942	0.2176	0.2038	0.2138
0	0.05	0.05	0.3	0.3	First	0.2326	0.2502	0.2432	0.2502
					Last	0.2210	0.2580	0.2414	0.2534
0.05	0.2	0.3	0.4	0.5	First	0.3400	0.3544	0.3540	0.3544
					Last	0.3200	0.3652	0.3560	0.3548
0	0	0	0.25	0.5	First	0.4048	0.4262	0.4206	0.4262
					Last	0.3832	0.4302	0.4192	0.4244
0	0	0	0.35	0.35	First	0.3126	0.3290	0.3140	0.3290
					Last	0.3006	0.3330	0.3112	0.3308
0	0	0.25	0.25	0.5	First	0.4056	0.4258	0.4168	0.4258
					Last	0.3874	0.4300	0.4158	0.4246
0	0.125	0.25	0.25	0.25	First	0.1804	0.1898	0.1858	0.1898
					Last	0.1690	0.1952	0.1842	0.1922
0	0.125	0.125	0.125	0.25	First	0.1366	0.1428	0.1442	0.1428
					Last	0.1280	0.1488	0.1452	0.1446
0	0.125	0.125	0.125	0.125	First	0.0888	0.0862	0.0884	0.0862
					Last	0.0830	0.0928	0.0904	0.0896
0.125	0.125	0.125	0.25	0.25	First	0.1054	0.1078	0.1034	0.1078
					Last	0.0964	0.1138	0.1050	0.1100
0	0	0	0.1	0.3	First	0.1994	0.2046	0.1996	0.2046
					Last	0.1850	0.2084	0.1984	0.2050
0	0	0	0.2	0.7	First	0.5570	0.5734	0.5658	0.5734
					Last	0.5344	0.5812	0.5640	0.5732
0	0.1	0.1	0.6	0.6	First	0.5956	0.6208	0.5978	0.6208
					Last	0.5796	0.6244	0.5984	0.6220
0	0.1	0.3	0.4	0.4	First	0.3446	0.3646	0.3500	0.3646
					Last	0.3280	0.3708	0.3506	0.3660
0	0.05	0.2	0.4	0.4	First	0.3522	0.3770	0.3602	0.3770
					Last	0.3378	0.3766	0.3542	0.3764

Table B.83. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0490	0.0472	0.0498	0.0472
					Last	0.0452	0.0510	0.0492	0.0488
0.05	0.15	0.25	0.35	0.45	First	0.5540	0.5668	0.5538	0.5668
					Last	0.5280	0.5662	0.5468	0.5650
0	0.025	0.075	0.175	0.375	First	0.4846	0.4924	0.4694	0.4924
					Last	0.4608	0.4970	0.4726	0.4948
0	0	0	0	0.5	First	0.4688	0.4922	0.5064	0.4922
					Last	0.4450	0.5016	0.5038	0.4970
0	0	0	0.125	0.25	First	0.2978	0.3086	0.2984	0.3086
					Last	0.2848	0.3170	0.3006	0.3090
0	0	0.125	0.25	0.25	First	0.3930	0.4098	0.3910	0.4098
					Last	0.3730	0.4174	0.3908	0.4086
0	0.05	0.05	0.3	0.3	First	0.4324	0.4588	0.4428	0.4588
					Last	0.4206	0.4654	0.4448	0.4602
0.05	0.2	0.3	0.4	0.5	First	0.6192	0.6306	0.6134	0.6306
					Last	0.6014	0.6388	0.6098	0.6342
0	0	0	0.25	0.5	First	0.6890	0.7006	0.6844	0.7006
					Last	0.6716	0.7096	0.6808	0.7012
0	0	0	0.35	0.35	First	0.5486	0.5768	0.5572	0.5768
					Last	0.5272	0.5844	0.5556	0.5800
0	0	0.25	0.25	0.5	First	0.7014	0.7182	0.6954	0.7182
					Last	0.6840	0.7220	0.6924	0.7202
0	0.125	0.25	0.25	0.25	First	0.3074	0.3190	0.3112	0.3190
					Last	0.2930	0.3196	0.3094	0.3182
0	0.125	0.125	0.125	0.25	First	0.2356	0.2470	0.2488	0.2470
					Last	0.2222	0.2546	0.2514	0.2484
0	0.125	0.125	0.125	0.125	First	0.1200	0.1214	0.1196	0.1214
					Last	0.1080	0.1238	0.1184	0.1198
0.125	0.125	0.125	0.25	0.25	First	0.1714	0.1840	0.1768	0.1840
					Last	0.1570	0.1844	0.1726	0.1810
0	0	0	0.1	0.3	First	0.3356	0.3514	0.3526	0.3514
					Last	0.3208	0.3552	0.3446	0.3476
0	0	0	0.2	0.7	First	0.8260	0.8362	0.8274	0.8362
					Last	0.8086	0.8414	0.8280	0.8384
0	0.1	0.1	0.6	0.6	First	0.8664	0.8786	0.8562	0.8786
					Last	0.8566	0.8840	0.8580	0.8802
0	0.1	0.3	0.4	0.4	First	0.6076	0.6230	0.5978	0.6230
					Last	0.5858	0.6280	0.5946	0.6258
0	0.05	0.2	0.4	0.4	First	0.6404	0.6598	0.6322	0.6598
					Last	0.6220	0.6604	0.6276	0.6602

Table B.84. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0494	0.0470	0.0494
					Last	0.0490	0.0516	0.0470	0.0512
0.05	0.15	0.25	0.35	0.45	First	0.2298	0.2392	0.2316	0.2392
					Last	0.2158	0.2412	0.2340	0.2394
0	0.025	0.075	0.175	0.375	First	0.2052	0.2096	0.2016	0.2096
					Last	0.1888	0.2134	0.2030	0.2094
0	0	0	0	0.5	First	0.2244	0.2316	0.2376	0.2316
					Last	0.2128	0.2394	0.2332	0.2334
0	0	0	0.125	0.25	First	0.1400	0.1494	0.1462	0.1494
					Last	0.1324	0.1544	0.1486	0.1504
0	0	0.125	0.25	0.25	First	0.1660	0.1738	0.1712	0.1738
					Last	0.1552	0.1806	0.1686	0.1762
0	0.05	0.05	0.3	0.3	First	0.1952	0.2038	0.1994	0.2038
					Last	0.1814	0.2074	0.1960	0.2020
0.05	0.2	0.3	0.4	0.5	First	0.2650	0.2782	0.2718	0.2782
					Last	0.2508	0.2866	0.2744	0.2796
0	0	0	0.25	0.5	First	0.3054	0.3188	0.3112	0.3188
					Last	0.2940	0.3252	0.3070	0.3200
0	0	0	0.35	0.35	First	0.2472	0.2614	0.2538	0.2614
					Last	0.2306	0.2616	0.2514	0.2620
0	0	0.25	0.25	0.5	First	0.3058	0.3168	0.3108	0.3168
					Last	0.2906	0.3244	0.3102	0.3156
0	0.125	0.25	0.25	0.25	First	0.1324	0.1392	0.1360	0.1392
					Last	0.1258	0.1448	0.1352	0.1406
0	0.125	0.125	0.125	0.25	First	0.1150	0.1226	0.1260	0.1226
					Last	0.1066	0.1258	0.1240	0.1226
0	0.125	0.125	0.125	0.125	First	0.0800	0.0816	0.0810	0.0816
					Last	0.0718	0.0866	0.0818	0.0818
0.125	0.125	0.125	0.25	0.25	First	0.0910	0.0920	0.0888	0.0920
					Last	0.0808	0.0936	0.0888	0.0914
0	0	0	0.1	0.3	First	0.1558	0.1570	0.1574	0.1570
					Last	0.1436	0.1646	0.1564	0.1582
0	0	0	0.2	0.7	First	0.3962	0.4060	0.4004	0.4060
					Last	0.3740	0.4154	0.4000	0.4078
0	0.1	0.1	0.6	0.6	First	0.4672	0.4826	0.4690	0.4826
					Last	0.4480	0.4968	0.4696	0.4892
0	0.1	0.3	0.4	0.4	First	0.2568	0.2724	0.2592	0.2724
					Last	0.2406	0.2762	0.2604	0.2710
0	0.05	0.2	0.4	0.4	First	0.2772	0.2894	0.2826	0.2894
					Last	0.2630	0.2992	0.2802	0.2906

Table B.85. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0448	0.0530	0.0516	0.0530
					Last	0.0442	0.0520	0.0525	0.0518
0.05	0.15	0.25	0.35	0.45	First	0.4102	0.3912	0.4102	0.3912
					Last	0.3568	0.3912	0.3868	0.3874
0	0.025	0.075	0.175	0.375	First	0.3142	0.3531	0.3336	0.3531
					Last	0.3134	0.3408	0.3364	0.3392
0	0	0	0	0.5	First	0.3516	0.3905	0.3922	0.3905
					Last	0.3504	0.3862	0.3946	0.3840
0	0	0	0.125	0.25	First	0.1902	0.2231	0.2120	0.2231
					Last	0.1888	0.2152	0.2140	0.2126
0	0	0.125	0.25	0.25	First	0.2462	0.2798	0.2580	0.2798
					Last	0.2458	0.2712	0.2588	0.2678
0	0.05	0.05	0.3	0.3	First	0.2868	0.3212	0.3052	0.3212
					Last	0.2858	0.3112	0.3068	0.3158
0.05	0.2	0.3	0.4	0.5	First	0.4160	0.4568	0.4464	0.4568
					Last	0.4148	0.4512	0.4486	0.4500
0	0	0	0.25	0.5	First	0.5046	0.5414	0.5206	0.5414
					Last	0.5036	0.5400	0.5234	0.5356
0	0	0	0.35	0.35	First	0.3802	0.4238	0.4030	0.4238
					Last	0.3790	0.4211	0.4060	0.4210
0	0	0.25	0.25	0.5	First	0.4944	0.5376	0.5208	0.5376
					Last	0.4928	0.5233	0.5222	0.5318
0	0.125	0.25	0.25	0.25	First	0.2028	0.2296	0.2180	0.2296
					Last	0.2012	0.2231	0.2194	0.2256
0	0.125	0.125	0.125	0.25	First	0.1544	0.1756	0.1756	0.1756
					Last	0.1538	0.1710	0.1762	0.1722
0	0.125	0.125	0.125	0.125	First	0.0906	0.1034	0.1008	0.1034
					Last	0.0898	0.0932	0.1012	0.0976
0.125	0.125	0.125	0.25	0.25	First	0.1160	0.1308	0.1250	0.1308
					Last	0.1156	0.1256	0.1260	0.1292
0	0	0	0.1	0.3	First	0.2284	0.2536	0.2452	0.2536
					Last	0.2276	0.2521	0.2472	0.2530
0	0	0	0.2	0.7	First	0.6748	0.7158	0.7084	0.7158
					Last	0.6734	0.7023	0.7098	0.7108
0	0.1	0.1	0.6	0.6	First	0.7192	0.7538	0.7288	0.7538
					Last	0.7178	0.7527	0.7312	0.7494
0	0.1	0.3	0.4	0.4	First	0.4256	0.4594	0.4360	0.4594
					Last	0.4242	0.4511	0.4376	0.4556
0	0.05	0.2	0.4	0.4	First	0.4444	0.4822	0.4592	0.4822
					Last	0.4438	0.4796	0.4620	0.4760

Table B.86. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0420	0.0448	0.0450	0.0448
					Last	0.0414	0.0448	0.0458	0.0436
0.05	0.15	0.25	0.35	0.45	First	0.6790	0.7046	0.6796	0.7046
					Last	0.6788	0.7013	0.6818	0.7002
0	0.025	0.075	0.175	0.375	First	0.5886	0.6184	0.5918	0.6184
					Last	0.5870	0.6056	0.5942	0.6112
0	0	0	0	0.5	First	0.5786	0.6238	0.6336	0.6238
					Last	0.5768	0.6207	0.6362	0.6236
0	0	0	0.125	0.25	First	0.3810	0.4180	0.4034	0.4180
					Last	0.3806	0.4078	0.4050	0.4142
0	0	0.125	0.25	0.25	First	0.4744	0.5088	0.4776	0.5088
					Last	0.4732	0.4998	0.4802	0.5068
0	0.05	0.05	0.3	0.3	First	0.5426	0.5784	0.5490	0.5784
					Last	0.5406	0.5725	0.5524	0.5756
0.05	0.2	0.3	0.4	0.5	First	0.7276	0.7550	0.7308	0.7550
					Last	0.7266	0.7541	0.7330	0.7504
0	0	0	0.25	0.5	First	0.7952	0.8222	0.8024	0.8222
					Last	0.7948	0.8198	0.8034	0.8198
0	0	0	0.35	0.35	First	0.6790	0.7180	0.6906	0.7180
					Last	0.6778	0.7089	0.6936	0.7146
0	0	0.25	0.25	0.5	First	0.8158	0.8376	0.8146	0.8376
					Last	0.8150	0.8316	0.8164	0.8352
0	0.125	0.25	0.25	0.25	First	0.3662	0.3984	0.3854	0.3984
					Last	0.3656	0.3899	0.3888	0.3962
0	0.125	0.125	0.125	0.25	First	0.2718	0.2988	0.2996	0.2988
					Last	0.2704	0.2905	0.3018	0.2942
0	0.125	0.125	0.125	0.125	First	0.1320	0.1452	0.1428	0.1452
					Last	0.1308	0.1426	0.1442	0.1412
0.125	0.125	0.125	0.25	0.25	First	0.1954	0.2126	0.2002	0.2126
					Last	0.1950	0.2097	0.2018	0.2086
0	0	0	0.1	0.3	First	0.4276	0.4662	0.4544	0.4662
					Last	0.4266	0.4613	0.4564	0.4676
0	0	0	0.2	0.7	First	0.9132	0.9278	0.9190	0.9278
					Last	0.9128	0.9234	0.9202	0.9260
0	0.1	0.1	0.6	0.6	First	0.9418	0.9586	0.9470	0.9586
					Last	0.9418	0.9478	0.9478	0.9574
0	0.1	0.3	0.4	0.4	First	0.7318	0.7612	0.7332	0.7612
					Last	0.7302	0.7577	0.7350	0.7576
0	0.05	0.2	0.4	0.4	First	0.7588	0.7964	0.7648	0.7964
					Last	0.7578	0.7909	0.7666	0.7928

Table B.87. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0438	0.0502	0.0490	0.0502
					Last	0.0428	0.0502	0.0496	0.0494
0.05	0.15	0.25	0.35	0.45	First	0.2698	0.3010	0.2928	0.3010
					Last	0.2682	0.2968	0.2944	0.2942
0	0.025	0.075	0.175	0.375	First	0.2306	0.2528	0.2512	0.2528
					Last	0.2292	0.2497	0.2530	0.2488
0	0	0	0	0.5	First	0.2818	0.3156	0.3180	0.3156
					Last	0.2808	0.3108	0.3198	0.3124
0	0	0	0.125	0.25	First	0.1604	0.1774	0.1748	0.1774
					Last	0.1596	0.1687	0.1762	0.1710
0	0	0.125	0.25	0.25	First	0.1996	0.2254	0.2126	0.2254
					Last	0.1984	0.2185	0.2148	0.2198
0	0.05	0.05	0.3	0.3	First	0.2168	0.2424	0.2280	0.2424
					Last	0.2156	0.2399	0.2310	0.2382
0.05	0.2	0.3	0.4	0.5	First	0.3170	0.3476	0.3378	0.3476
					Last	0.3150	0.3414	0.3394	0.3414
0	0	0	0.25	0.5	First	0.3712	0.4042	0.3944	0.4042
					Last	0.3698	0.3956	0.3968	0.4028
0	0	0	0.35	0.35	First	0.2966	0.3194	0.3002	0.3194
					Last	0.2958	0.3161	0.3038	0.3204
0	0	0.25	0.25	0.5	First	0.3754	0.4114	0.4000	0.4114
					Last	0.3740	0.4092	0.4020	0.4088
0	0.125	0.25	0.25	0.25	First	0.1558	0.1780	0.1694	0.1780
					Last	0.1542	0.1721	0.1710	0.1736
0	0.125	0.125	0.125	0.25	First	0.1362	0.1518	0.1482	0.1518
					Last	0.1358	0.1459	0.1494	0.1464
0	0.125	0.125	0.125	0.125	First	0.0776	0.0846	0.0816	0.0846
					Last	0.0774	0.0801	0.0826	0.0806
0.125	0.125	0.125	0.25	0.25	First	0.1066	0.1134	0.1086	0.1134
					Last	0.1062	0.1088	0.1100	0.1106
0	0	0	0.1	0.3	First	0.1762	0.1986	0.1914	0.1986
					Last	0.1754	0.1877	0.1932	0.1952
0	0	0	0.2	0.7	First	0.5102	0.5574	0.5472	0.5574
					Last	0.5090	0.5511	0.5488	0.5524
0	0.1	0.1	0.6	0.6	First	0.5616	0.6082	0.5806	0.6082
					Last	0.5606	0.5963	0.5824	0.6064
0	0.1	0.3	0.4	0.4	First	0.3232	0.3526	0.3356	0.3526
					Last	0.3216	0.3422	0.3374	0.3484
0	0.05	0.2	0.4	0.4	First	0.3468	0.3796	0.3598	0.3796
					Last	0.3462	0.3766	0.3614	0.3758

Table B.88. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0502	0.0494	0.0500	0.0494
					Last	0.0560	0.0500	0.0494	0.0500
0.05	0.15	0.25	0.35	0.45	First	0.4238	0.4546	0.4472	0.4546
					Last	0.4608	0.4566	0.4574	0.4636
0	0.025	0.075	0.175	0.375	First	0.3796	0.3988	0.3952	0.3988
					Last	0.4060	0.3992	0.4030	0.4092
0	0	0	0	0.5	First	0.4428	0.4586	0.4650	0.4586
					Last	0.4712	0.4628	0.4792	0.4842
0	0	0	0.125	0.25	First	0.2536	0.2636	0.2556	0.2636
					Last	0.2756	0.2608	0.2620	0.2818
0	0	0.125	0.25	0.25	First	0.2962	0.3110	0.3008	0.3110
					Last	0.3204	0.3114	0.3064	0.3248
0	0.05	0.05	0.3	0.3	First	0.3574	0.3800	0.3674	0.3800
					Last	0.3866	0.3788	0.3762	0.3874
0.05	0.2	0.3	0.4	0.5	First	0.5038	0.5282	0.5212	0.5282
					Last	0.5366	0.5362	0.5336	0.5460
0	0	0	0.25	0.5	First	0.5784	0.6070	0.5956	0.6070
					Last	0.6130	0.6098	0.6100	0.6200
0	0	0	0.35	0.35	First	0.4710	0.4910	0.4702	0.4910
					Last	0.5002	0.4964	0.4818	0.5054
0	0	0.25	0.25	0.5	First	0.5836	0.6072	0.5958	0.6072
					Last	0.6112	0.6120	0.6072	0.6136
0	0.125	0.25	0.25	0.25	First	0.2446	0.2592	0.2520	0.2592
					Last	0.2702	0.2610	0.2612	0.2776
0	0.125	0.125	0.125	0.25	First	0.1816	0.1888	0.1924	0.1888
					Last	0.2034	0.1850	0.1952	0.2103
0	0.125	0.125	0.125	0.125	First	0.0982	0.1022	0.1004	0.1022
					Last	0.1116	0.1032	0.1026	0.1148
0.125	0.125	0.125	0.25	0.25	First	0.1464	0.1538	0.1480	0.1538
					Last	0.1604	0.1536	0.1516	0.1646
0	0	0	0.1	0.3	First	0.2674	0.2920	0.2880	0.2920
					Last	0.2936	0.2922	0.2996	0.2988
0	0	0	0.2	0.7	First	0.7558	0.7758	0.7816	0.7758
					Last	0.7806	0.7816	0.7930	0.7892
0	0.1	0.1	0.6	0.6	First	0.8156	0.8398	0.8218	0.8398
					Last	0.8366	0.8446	0.8324	0.8478
0	0.1	0.3	0.4	0.4	First	0.5134	0.5356	0.5234	0.5356
					Last	0.5462	0.5414	0.5340	0.5484
0	0.05	0.2	0.4	0.4	First	0.5240	0.5482	0.5364	0.5482
					Last	0.5552	0.5526	0.5498	0.5660

Table B.89. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0478	0.0492	0.0480	0.0492
					Last	0.0548	0.0482	0.0496	0.0498
0.05	0.15	0.25	0.35	0.45	First	0.7644	0.7726	0.7524	0.7726
					Last	0.7880	0.7774	0.7596	0.7918
0	0.025	0.075	0.175	0.375	First	0.6846	0.7024	0.6918	0.7024
					Last	0.7162	0.7088	0.6972	0.7254
0	0	0	0	0.5	First	0.6830	0.7118	0.7218	0.7118
					Last	0.7152	0.7190	0.7342	0.7252
0	0	0	0.125	0.25	First	0.4432	0.4642	0.4546	0.4642
					Last	0.4732	0.4660	0.4624	0.4792
0	0	0.125	0.25	0.25	First	0.5854	0.6116	0.5816	0.6116
					Last	0.6166	0.6120	0.5910	0.6234
0	0.05	0.05	0.3	0.3	First	0.6298	0.6632	0.6338	0.6632
					Last	0.6676	0.6666	0.6506	0.6736
0.05	0.2	0.3	0.4	0.5	First	0.8234	0.8324	0.8166	0.8324
					Last	0.8446	0.8400	0.8268	0.8478
0	0	0	0.25	0.5	First	0.8800	0.8926	0.8804	0.8926
					Last	0.8998	0.8990	0.8880	0.9040
0	0	0	0.35	0.35	First	0.7766	0.8036	0.7798	0.8036
					Last	0.8012	0.8092	0.7876	0.8132
0	0	0.25	0.25	0.5	First	0.8840	0.8916	0.8814	0.8916
					Last	0.9012	0.8966	0.8880	0.9034
0	0.125	0.25	0.25	0.25	First	0.4516	0.4684	0.4606	0.4684
					Last	0.4796	0.4682	0.4698	0.4826
0	0.125	0.125	0.125	0.25	First	0.3380	0.3574	0.3608	0.3574
					Last	0.3690	0.3550	0.3692	0.3653
0	0.125	0.125	0.125	0.125	First	0.1610	0.1670	0.1672	0.1670
					Last	0.1768	0.1652	0.1692	0.1797
0.125	0.125	0.125	0.25	0.25	First	0.2354	0.2476	0.2376	0.2476
					Last	0.2580	0.2488	0.2458	0.2623
0	0	0	0.1	0.3	First	0.5118	0.5380	0.5252	0.5380
					Last	0.5442	0.5398	0.5344	0.5452
0	0	0	0.2	0.7	First	0.9648	0.9686	0.9652	0.9686
					Last	0.9718	0.9720	0.9692	0.9732
0	0.1	0.1	0.6	0.6	First	0.9778	0.9832	0.9766	0.9832
					Last	0.9836	0.9846	0.9780	0.9862
0	0.1	0.3	0.4	0.4	First	0.8162	0.8286	0.8024	0.8286
					Last	0.8388	0.8368	0.8148	0.8432
0	0.05	0.2	0.4	0.4	First	0.8548	0.8676	0.8492	0.8676
					Last	0.8744	0.8758	0.8598	0.8786

Table B.90. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0480	0.0496	0.0518	0.0496
					Last	0.0538	0.0496	0.0514	0.0482
0.05	0.15	0.25	0.35	0.45	First	0.3348	0.3488	0.3422	0.3488
					Last	0.3626	0.3524	0.3494	0.3688
0	0.025	0.075	0.175	0.375	First	0.2892	0.3060	0.3082	0.3060
					Last	0.3136	0.3090	0.3132	0.3180
0	0	0	0	0.5	First	0.3244	0.3422	0.3504	0.3422
					Last	0.3530	0.3448	0.3562	0.3610
0	0	0	0.125	0.25	First	0.1802	0.1904	0.1864	0.1904
					Last	0.2000	0.1908	0.1924	0.2036
0	0	0.125	0.25	0.25	First	0.2282	0.2382	0.2288	0.2382
					Last	0.2506	0.2424	0.2322	0.2562
0	0.05	0.05	0.3	0.3	First	0.2690	0.2838	0.2778	0.2838
					Last	0.2932	0.2792	0.2838	0.2975
0.05	0.2	0.3	0.4	0.5	First	0.3748	0.3934	0.3890	0.3934
					Last	0.4032	0.3960	0.4014	0.4086
0	0	0	0.25	0.5	First	0.4474	0.4662	0.4588	0.4662
					Last	0.4822	0.4724	0.4670	0.4854
0	0	0	0.35	0.35	First	0.3454	0.3744	0.3590	0.3744
					Last	0.3736	0.3732	0.3648	0.3782
0	0	0.25	0.25	0.5	First	0.4510	0.4692	0.4566	0.4692
					Last	0.4818	0.4726	0.4698	0.4897
0	0.125	0.25	0.25	0.25	First	0.1896	0.2004	0.1988	0.2004
					Last	0.2080	0.2016	0.2020	0.2084
0	0.125	0.125	0.125	0.25	First	0.1468	0.1532	0.1602	0.1532
					Last	0.1660	0.1554	0.1626	0.1680
0	0.125	0.125	0.125	0.125	First	0.0890	0.0970	0.0996	0.0970
					Last	0.0968	0.0936	0.1002	0.0997
0.125	0.125	0.125	0.25	0.25	First	0.1168	0.1220	0.1214	0.1220
					Last	0.1282	0.1174	0.1206	0.1294
0	0	0	0.1	0.3	First	0.2140	0.2266	0.2220	0.2266
					Last	0.2368	0.2236	0.2234	0.2394
0	0	0	0.2	0.7	First	0.6038	0.6318	0.6278	0.6318
					Last	0.6370	0.6386	0.6430	0.6450
0	0.1	0.1	0.6	0.6	First	0.6594	0.6916	0.6662	0.6916
					Last	0.6918	0.6958	0.6810	0.7074
0	0.1	0.3	0.4	0.4	First	0.3538	0.3762	0.3662	0.3762
					Last	0.3864	0.3768	0.3694	0.3662
0	0.05	0.2	0.4	0.4	First	0.3940	0.4124	0.3962	0.4124
					Last	0.4222	0.4146	0.4080	0.4314

Table B.91. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0458	0.0438	0.0448	0.0438
					Last	0.0552	0.0474	0.0474	0.0474
0.05	0.15	0.25	0.35	0.45	First	0.4004	0.4134	0.4104	0.4134
					Last	0.4332	0.4284	0.4272	0.4422
0	0.025	0.075	0.175	0.375	First	0.3378	0.3432	0.3474	0.3432
					Last	0.3640	0.3572	0.3618	0.3652
0	0	0	0	0.5	First	0.3872	0.4050	0.4222	0.4050
					Last	0.4230	0.4236	0.4384	0.4408
0	0	0	0.125	0.25	First	0.2208	0.2232	0.2218	0.2232
					Last	0.2424	0.2330	0.2358	0.2502
0	0	0.125	0.25	0.25	First	0.2680	0.2792	0.2798	0.2792
					Last	0.2966	0.2890	0.2836	0.3044
0	0.05	0.05	0.3	0.3	First	0.3088	0.3184	0.3130	0.3184
					Last	0.3396	0.3342	0.3288	0.3410
0.05	0.2	0.3	0.4	0.5	First	0.4516	0.4676	0.4642	0.4676
					Last	0.4784	0.4786	0.4778	0.4880
0	0	0	0.25	0.5	First	0.5288	0.5432	0.5378	0.5432
					Last	0.5636	0.5602	0.5574	0.5684
0	0	0	0.35	0.35	First	0.4170	0.4294	0.4118	0.4294
					Last	0.4530	0.4520	0.4384	0.4572
0	0	0.25	0.25	0.5	First	0.5250	0.5378	0.5392	0.5378
					Last	0.5574	0.5564	0.5566	0.5638
0	0.125	0.25	0.25	0.25	First	0.2066	0.2166	0.2196	0.2166
					Last	0.2296	0.2196	0.2244	0.2390
0	0.125	0.125	0.125	0.25	First	0.1696	0.1698	0.1730	0.1698
					Last	0.1844	0.1740	0.1828	0.1898
0	0.125	0.125	0.125	0.125	First	0.0944	0.0968	0.1010	0.0968
					Last	0.1036	0.0996	0.1022	0.1116
0.125	0.125	0.125	0.25	0.25	First	0.1202	0.1258	0.1276	0.1258
					Last	0.1338	0.1276	0.1308	0.1408
0	0	0	0.1	0.3	First	0.2408	0.2450	0.2502	0.2450
					Last	0.2628	0.2522	0.2570	0.2694
0	0	0	0.2	0.7	First	0.6958	0.7160	0.7210	0.7160
					Last	0.7306	0.7320	0.7360	0.7430
0	0.1	0.1	0.6	0.6	First	0.7506	0.7680	0.7542	0.7680
					Last	0.7924	0.7928	0.7786	0.7952
0	0.1	0.3	0.4	0.4	First	0.4430	0.4544	0.4468	0.4544
					Last	0.4788	0.4736	0.4674	0.4828
0	0.05	0.2	0.4	0.4	First	0.4804	0.4952	0.4840	0.4952
					Last	0.5138	0.5072	0.4924	0.5206

Table B.92. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0530	0.0530	0.0530	0.0530
					Last	0.0548	0.0486	0.0492	0.0512
0.05	0.15	0.25	0.35	0.45	First	0.7064	0.7074	0.6986	0.7074
					Last	0.7528	0.7404	0.7212	0.7568
0	0.025	0.075	0.175	0.375	First	0.6272	0.6426	0.6314	0.6426
					Last	0.6750	0.6676	0.6600	0.6752
0	0	0	0	0.5	First	0.6252	0.6506	0.6724	0.6506
					Last	0.6654	0.6754	0.6936	0.6806
0	0	0	0.125	0.25	First	0.3938	0.4104	0.4082	0.4104
					Last	0.4326	0.4208	0.4208	0.4332
0	0	0.125	0.25	0.25	First	0.4930	0.5084	0.4944	0.5084
					Last	0.5360	0.5286	0.5142	0.5376
0	0.05	0.05	0.3	0.3	First	0.5794	0.5966	0.5780	0.5966
					Last	0.6232	0.6214	0.6072	0.6312
0.05	0.2	0.3	0.4	0.5	First	0.7648	0.7670	0.7570	0.7670
					Last	0.7994	0.7914	0.7752	0.8072
0	0	0	0.25	0.5	First	0.8396	0.8444	0.8302	0.8444
					Last	0.8652	0.8592	0.8496	0.8744
0	0	0	0.35	0.35	First	0.7188	0.7352	0.7174	0.7352
					Last	0.7536	0.7540	0.7346	0.7618
0	0	0.25	0.25	0.5	First	0.8324	0.8440	0.8328	0.8440
					Last	0.8642	0.8618	0.8510	0.8660
0	0.125	0.25	0.25	0.25	First	0.4064	0.4126	0.4116	0.4126
					Last	0.4346	0.4216	0.4188	0.4406
0	0.125	0.125	0.125	0.25	First	0.2938	0.3018	0.3180	0.3018
					Last	0.3306	0.3222	0.3288	0.3370
0	0.125	0.125	0.125	0.125	First	0.1450	0.1460	0.1472	0.1460
					Last	0.1586	0.1478	0.1560	0.1626
0.125	0.125	0.125	0.25	0.25	First	0.2080	0.2164	0.2144	0.2164
					Last	0.2248	0.2208	0.2224	0.2254
0	0	0	0.1	0.3	First	0.4568	0.4678	0.4702	0.4678
					Last	0.4932	0.4880	0.4876	0.4964
0	0	0	0.2	0.7	First	0.9420	0.9408	0.9358	0.9408
					Last	0.9552	0.9506	0.9526	0.9630
0	0.1	0.1	0.6	0.6	First	0.9578	0.9642	0.9558	0.9642
					Last	0.9692	0.9710	0.9666	0.9720
0	0.1	0.3	0.4	0.4	First	0.7582	0.7666	0.7500	0.7666
					Last	0.7894	0.7842	0.7654	0.7982
0	0.05	0.2	0.4	0.4	First	0.7952	0.8022	0.7816	0.8022
					Last	0.8254	0.8248	0.8084	0.8296

Table B.93. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0516	0.0492	0.0514	0.0492
					Last	0.0520	0.0482	0.0506	0.0512
0.05	0.15	0.25	0.35	0.45	First	0.2928	0.3020	0.3008	0.3020
					Last	0.3282	0.3142	0.3120	0.3288
0	0.025	0.075	0.175	0.375	First	0.2672	0.2712	0.2730	0.2712
					Last	0.2944	0.2784	0.2830	0.3046
0	0	0	0	0.5	First	0.2974	0.3028	0.3166	0.3028
					Last	0.3232	0.3156	0.3200	0.3296
0	0	0	0.125	0.25	First	0.1682	0.1770	0.1828	0.1770
					Last	0.1846	0.1802	0.1874	0.1950
0	0	0.125	0.25	0.25	First	0.2018	0.2054	0.2054	0.2054
					Last	0.2220	0.2126	0.2094	0.2352
0	0.05	0.05	0.3	0.3	First	0.2506	0.2542	0.2508	0.2542
					Last	0.2704	0.2628	0.2600	0.2796
0.05	0.2	0.3	0.4	0.5	First	0.3456	0.3600	0.3554	0.3600
					Last	0.3698	0.3670	0.3684	0.3714
0	0	0	0.25	0.5	First	0.3890	0.4018	0.4054	0.4018
					Last	0.4238	0.4200	0.4212	0.4314
0	0	0	0.35	0.35	First	0.3140	0.3226	0.3172	0.3226
					Last	0.3440	0.3382	0.3332	0.3562
0	0	0.25	0.25	0.5	First	0.4026	0.4208	0.4188	0.4208
					Last	0.4340	0.4328	0.4364	0.4414
0	0.125	0.25	0.25	0.25	First	0.1726	0.1780	0.1770	0.1780
					Last	0.1894	0.1818	0.1840	0.1922
0	0.125	0.125	0.125	0.25	First	0.1338	0.1340	0.1404	0.1340
					Last	0.1478	0.1376	0.1406	0.1510
0	0.125	0.125	0.125	0.125	First	0.0838	0.0840	0.0862	0.0840
					Last	0.0900	0.0882	0.0896	0.0992
0.125	0.125	0.125	0.25	0.25	First	0.1154	0.1144	0.1138	0.1144
					Last	0.1220	0.1086	0.1110	0.1260
0	0	0	0.1	0.3	First	0.1890	0.1944	0.1976	0.1944
					Last	0.2128	0.2024	0.2056	0.2266
0	0	0	0.2	0.7	First	0.5504	0.5662	0.5722	0.5662
					Last	0.5890	0.5874	0.5938	0.5942
0	0.1	0.1	0.6	0.6	First	0.6000	0.6170	0.5974	0.6170
					Last	0.6344	0.6344	0.6204	0.6434
0	0.1	0.3	0.4	0.4	First	0.3256	0.3404	0.3378	0.3404
					Last	0.3584	0.3568	0.3490	0.3616
0	0.05	0.2	0.4	0.4	First	0.3574	0.3704	0.3646	0.3704
					Last	0.3876	0.3860	0.3796	0.3904

Table B.94. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0470	0.0466	0.0488	0.0466
					Last	0.0496	0.0478	0.0498	0.0480
0.05	0.15	0.25	0.35	0.45	First	0.4806	0.5018	0.4920	0.5018
					Last	0.4818	0.4930	0.4866	0.5042
0	0.025	0.075	0.175	0.375	First	0.4188	0.4340	0.4308	0.4340
					Last	0.4194	0.4286	0.4280	0.4356
0	0	0	0	0.5	First	0.4748	0.4890	0.4972	0.4890
					Last	0.4792	0.4856	0.4988	0.5028
0	0	0	0.125	0.25	First	0.2522	0.2618	0.2578	0.2618
					Last	0.2540	0.2576	0.2550	0.2636
0	0	0.125	0.25	0.25	First	0.3384	0.3452	0.3276	0.3452
					Last	0.3414	0.3390	0.3228	0.3474
0	0.05	0.05	0.3	0.3	First	0.3862	0.3988	0.3902	0.3988
					Last	0.3868	0.3942	0.3888	0.3992
0.05	0.2	0.3	0.4	0.5	First	0.5464	0.5606	0.5556	0.5606
					Last	0.5456	0.5578	0.5552	0.5648
0	0	0	0.25	0.5	First	0.6408	0.6650	0.6552	0.6650
					Last	0.6460	0.6612	0.6544	0.6686
0	0	0	0.35	0.35	First	0.5208	0.5442	0.5194	0.5442
					Last	0.5252	0.5378	0.5178	0.5458
0	0	0.25	0.25	0.5	First	0.6358	0.6604	0.6426	0.6604
					Last	0.6354	0.6474	0.6410	0.6612
0	0.125	0.25	0.25	0.25	First	0.2686	0.2794	0.2728	0.2794
					Last	0.2676	0.2748	0.2672	0.2884
0	0.125	0.125	0.125	0.25	First	0.1976	0.2026	0.2004	0.2026
					Last	0.1924	0.1966	0.1978	0.2030
0	0.125	0.125	0.125	0.125	First	0.1026	0.1034	0.1050	0.1034
					Last	0.1030	0.1024	0.1082	0.1154
0.125	0.125	0.125	0.25	0.25	First	0.1412	0.1456	0.1418	0.1456
					Last	0.1412	0.1474	0.1460	0.1482
0	0	0	0.1	0.3	First	0.2952	0.3020	0.3004	0.3020
					Last	0.2970	0.2982	0.3008	0.3048
0	0	0	0.2	0.7	First	0.8032	0.8340	0.8346	0.8340
					Last	0.8096	0.8264	0.8364	0.8444
0	0.1	0.1	0.6	0.6	First	0.8514	0.8708	0.8518	0.8708
					Last	0.8520	0.8650	0.8520	0.8718
0	0.1	0.3	0.4	0.4	First	0.5506	0.5662	0.5456	0.5662
					Last	0.5506	0.5602	0.5424	0.5684
0	0.05	0.2	0.4	0.4	First	0.5654	0.5872	0.5724	0.5872
					Last	0.5718	0.5850	0.5706	0.5922

Table B.95. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0514	0.0522	0.0508	0.0522
					Last	0.0498	0.0506	0.0498	0.0538
0.05	0.15	0.25	0.35	0.45	First	0.8188	0.8238	0.8066	0.8238
					Last	0.8154	0.8192	0.8040	0.8270
0	0.025	0.075	0.175	0.375	First	0.7388	0.7498	0.7338	0.7498
					Last	0.7368	0.7422	0.7302	0.7524
0	0	0	0	0.5	First	0.7470	0.7682	0.7780	0.7682
					Last	0.7430	0.7564	0.7720	0.7756
0	0	0	0.125	0.25	First	0.4880	0.5092	0.4932	0.5092
					Last	0.4882	0.5018	0.4946	0.5102
0	0	0.125	0.25	0.25	First	0.6172	0.6316	0.6096	0.6316
					Last	0.6172	0.6254	0.6082	0.6334
0	0.05	0.05	0.3	0.3	First	0.6962	0.7206	0.6964	0.7206
					Last	0.6946	0.7084	0.6926	0.7180
0.05	0.2	0.3	0.4	0.5	First	0.8708	0.8724	0.8604	0.8724
					Last	0.8716	0.8718	0.8610	0.8762
0	0	0	0.25	0.5	First	0.9246	0.9272	0.9152	0.9272
					Last	0.9234	0.9236	0.9152	0.9274
0	0	0	0.35	0.35	First	0.8186	0.8438	0.8200	0.8438
					Last	0.8216	0.8422	0.8264	0.8494
0	0	0.25	0.25	0.5	First	0.9250	0.9242	0.9158	0.9242
					Last	0.9236	0.9242	0.9150	0.9274
0	0.125	0.25	0.25	0.25	First	0.4822	0.4958	0.4864	0.4958
					Last	0.4848	0.4910	0.4848	0.4962
0	0.125	0.125	0.125	0.25	First	0.3720	0.3848	0.3870	0.3848
					Last	0.3696	0.3764	0.3844	0.3866
0	0.125	0.125	0.125	0.125	First	0.1766	0.1774	0.1810	0.1774
					Last	0.1738	0.1742	0.1804	0.1858
0.125	0.125	0.125	0.25	0.25	First	0.2522	0.2680	0.2618	0.2680
					Last	0.2510	0.2574	0.2558	0.2770
0	0	0	0.1	0.3	First	0.5472	0.5690	0.5674	0.5690
					Last	0.5508	0.5620	0.5658	0.5708
0	0	0	0.2	0.7	First	0.9786	0.9798	0.9790	0.9798
					Last	0.9796	0.9800	0.9792	0.9814
0	0.1	0.1	0.6	0.6	First	0.9892	0.9922	0.9854	0.9922
					Last	0.9876	0.9906	0.9856	0.9952
0	0.1	0.3	0.4	0.4	First	0.8652	0.8728	0.8564	0.8728
					Last	0.8654	0.8688	0.8558	0.8730
0	0.05	0.2	0.4	0.4	First	0.8824	0.8926	0.8734	0.8926
					Last	0.8846	0.8890	0.8704	0.8936

Table B.96. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0494	0.0520	0.0516	0.0520
					Last	0.0494	0.0514	0.0530	0.0522
0.05	0.15	0.25	0.35	0.45	First	0.3620	0.3824	0.3796	0.3824
					Last	0.3634	0.3762	0.3722	0.3922
0	0.025	0.075	0.175	0.375	First	0.3320	0.3376	0.3298	0.3376
					Last	0.3296	0.3370	0.3282	0.3436
0	0	0	0	0.5	First	0.3504	0.3692	0.3740	0.3692
					Last	0.3566	0.3562	0.3684	0.3762
0	0	0	0.125	0.25	First	0.1978	0.2034	0.1980	0.2034
					Last	0.2004	0.1980	0.1966	0.2132
0	0	0.125	0.25	0.25	First	0.2662	0.2696	0.2510	0.2696
					Last	0.2630	0.2666	0.2582	0.2788
0	0.05	0.05	0.3	0.3	First	0.2812	0.2972	0.2926	0.2972
					Last	0.2864	0.2916	0.2892	0.2994
0.05	0.2	0.3	0.4	0.5	First	0.4194	0.4324	0.4206	0.4324
					Last	0.4146	0.4218	0.4244	0.4420
0	0	0	0.25	0.5	First	0.4776	0.4978	0.4890	0.4978
					Last	0.4774	0.4898	0.4852	0.4980
0	0	0	0.35	0.35	First	0.3964	0.4096	0.3890	0.4096
					Last	0.3990	0.4018	0.3900	0.4114
0	0	0.25	0.25	0.5	First	0.4936	0.5176	0.5086	0.5176
					Last	0.5016	0.5038	0.5018	0.5178
0	0.125	0.25	0.25	0.25	First	0.2008	0.2052	0.2032	0.2052
					Last	0.2030	0.2020	0.2026	0.2148
0	0.125	0.125	0.125	0.25	First	0.1722	0.1740	0.1740	0.1740
					Last	0.1704	0.1676	0.1722	0.1820
0	0.125	0.125	0.125	0.125	First	0.0876	0.0892	0.0876	0.0892
					Last	0.0854	0.0850	0.0902	0.0932
0.125	0.125	0.125	0.25	0.25	First	0.1290	0.1332	0.1314	0.1332
					Last	0.1288	0.1270	0.1282	0.1410
0	0	0	0.1	0.3	First	0.2234	0.2330	0.2352	0.2330
					Last	0.2302	0.2332	0.2338	0.2380
0	0	0	0.2	0.7	First	0.6586	0.6866	0.6862	0.6866
					Last	0.6652	0.6820	0.6848	0.6884
0	0.1	0.1	0.6	0.6	First	0.7012	0.7252	0.7068	0.7252
					Last	0.7002	0.7158	0.7038	0.7296
0	0.1	0.3	0.4	0.4	First	0.4168	0.4290	0.4174	0.4290
					Last	0.4198	0.4248	0.4172	0.4306
0	0.05	0.2	0.4	0.4	First	0.4512	0.4624	0.4438	0.4624
					Last	0.4502	0.4556	0.4474	0.4666

Table B.97. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0486	0.0480	0.0486	0.0480
					Last	0.0446	0.0512	0.0496	0.0476
0.05	0.15	0.25	0.35	0.45	First	0.5400	0.5628	0.5512	0.5628
					Last	0.5232	0.5612	0.5528	0.5620
0	0.025	0.075	0.175	0.375	First	0.4716	0.4982	0.4974	0.4982
					Last	0.4548	0.4958	0.4965	0.4970
0	0	0	0	0.5	First	0.5300	0.5534	0.5660	0.5534
					Last	0.5140	0.5492	0.5522	0.5532
0	0	0	0.125	0.25	First	0.2982	0.3100	0.3014	0.3100
					Last	0.2840	0.3020	0.3014	0.3090
0	0	0.125	0.25	0.25	First	0.3684	0.3838	0.3674	0.3838
					Last	0.3530	0.3832	0.3662	0.3804
0	0.05	0.05	0.3	0.3	First	0.4398	0.4550	0.4340	0.4550
					Last	0.4246	0.4552	0.4378	0.4546
0.05	0.2	0.3	0.4	0.5	First	0.6084	0.6368	0.6258	0.6368
					Last	0.5940	0.6352	0.6236	0.6350
0	0	0	0.25	0.5	First	0.7024	0.7224	0.7098	0.7224
					Last	0.6882	0.7134	0.7124	0.7196
0	0	0	0.35	0.35	First	0.5780	0.6012	0.5794	0.6012
					Last	0.5612	0.5988	0.5780	0.5998
0	0	0.25	0.25	0.5	First	0.7160	0.7402	0.7334	0.7402
					Last	0.6988	0.7382	0.7330	0.7356
0	0.125	0.25	0.25	0.25	First	0.2998	0.3132	0.3066	0.3132
					Last	0.2832	0.3112	0.3064	0.3100
0	0.125	0.125	0.125	0.25	First	0.2134	0.2228	0.2250	0.2228
					Last	0.2030	0.2203	0.2212	0.2222
0	0.125	0.125	0.125	0.125	First	0.1194	0.1310	0.1208	0.1310
					Last	0.1102	0.1218	0.1210	0.1212
0.125	0.125	0.125	0.25	0.25	First	0.1680	0.1794	0.1688	0.1794
					Last	0.1582	0.1750	0.1710	0.1734
0	0	0	0.1	0.3	First	0.3364	0.3476	0.3450	0.3476
					Last	0.3170	0.3468	0.3472	0.3464
0	0	0	0.2	0.7	First	0.8702	0.8864	0.8874	0.8864
					Last	0.8616	0.8862	0.8862	0.8860
0	0.1	0.1	0.6	0.6	First	0.9050	0.9294	0.9060	0.9294
					Last	0.8984	0.9214	0.9074	0.9190
0	0.1	0.3	0.4	0.4	First	0.6214	0.6454	0.6296	0.6454
					Last	0.6046	0.6430	0.6266	0.6444
0	0.05	0.2	0.4	0.4	First	0.6524	0.6842	0.6574	0.6842
					Last	0.6318	0.6774	0.6552	0.6736

Table B.98. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0464	0.0480	0.0484	0.0480
					Last	0.0430	0.0486	0.0500	0.0474
0.05	0.15	0.25	0.35	0.45	First	0.8804	0.8894	0.8712	0.8894
					Last	0.8684	0.8874	0.8692	0.8804
0	0.025	0.075	0.175	0.375	First	0.8164	0.8288	0.8150	0.8288
					Last	0.8052	0.8258	0.8118	0.8276
0	0	0	0	0.5	First	0.8144	0.8338	0.8400	0.8338
					Last	0.7996	0.8318	0.8326	0.8318
0	0	0	0.125	0.25	First	0.5586	0.5808	0.5656	0.5808
					Last	0.5430	0.5714	0.5668	0.5790
0	0	0.125	0.25	0.25	First	0.6884	0.7098	0.6794	0.7098
					Last	0.6714	0.7002	0.6842	0.7068
0	0.05	0.05	0.3	0.3	First	0.7696	0.7880	0.7626	0.7880
					Last	0.7546	0.7852	0.7640	0.7876
0.05	0.2	0.3	0.4	0.5	First	0.9128	0.9188	0.9058	0.9188
					Last	0.9060	0.9120	0.9040	0.9176
0	0	0	0.25	0.5	First	0.9566	0.9570	0.9482	0.9570
					Last	0.9516	0.9482	0.9476	0.9470
0	0	0	0.35	0.35	First	0.8774	0.8952	0.8780	0.8952
					Last	0.8668	0.8936	0.8762	0.8946
0	0	0.25	0.25	0.5	First	0.9580	0.9620	0.9536	0.9620
					Last	0.9546	0.9610	0.9522	0.9612
0	0.125	0.25	0.25	0.25	First	0.5562	0.5722	0.5604	0.5722
					Last	0.5360	0.5720	0.5610	0.5720
0	0.125	0.125	0.125	0.25	First	0.4288	0.4416	0.4462	0.4416
					Last	0.4136	0.4330	0.4352	0.4410
0	0.125	0.125	0.125	0.125	First	0.1858	0.1950	0.1968	0.1950
					Last	0.1776	0.1948	0.1898	0.1934
0.125	0.125	0.125	0.25	0.25	First	0.2932	0.3074	0.2904	0.3074
					Last	0.2782	0.3060	0.2926	0.3064
0	0	0	0.1	0.3	First	0.6212	0.6440	0.6344	0.6440
					Last	0.6062	0.6420	0.6344	0.6432
0	0	0	0.2	0.7	First	0.9920	0.9922	0.9916	0.9922
					Last	0.9920	0.9912	0.9916	0.9904
0	0.1	0.1	0.6	0.6	First	0.9960	0.9972	0.9956	0.9972
					Last	0.9958	0.9970	0.9960	0.9932
0	0.1	0.3	0.4	0.4	First	0.9086	0.9168	0.9022	0.9168
					Last	0.8984	0.9140	0.9032	0.9128
0	0.05	0.2	0.4	0.4	First	0.9354	0.9420	0.9280	0.9420
					Last	0.9312	0.9406	0.9246	0.9408

Table B.99. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0458	0.0442	0.0462	0.0442
					Last	0.0422	0.0462	0.0458	0.0444
0.05	0.15	0.25	0.35	0.45	First	0.4192	0.4408	0.4312	0.4408
					Last	0.4008	0.4368	0.4282	0.4402
0	0.025	0.075	0.175	0.375	First	0.3666	0.3816	0.3796	0.3816
					Last	0.3476	0.3814	0.3780	0.3800
0	0	0	0	0.5	First	0.3946	0.4126	0.4214	0.4126
					Last	0.3812	0.4140	0.4134	0.4108
0	0	0	0.125	0.25	First	0.2178	0.2314	0.2234	0.2314
					Last	0.2074	0.2310	0.2254	0.2226
0	0	0.125	0.25	0.25	First	0.2762	0.2872	0.2744	0.2872
					Last	0.2630	0.2836	0.2752	0.2816
0	0.05	0.05	0.3	0.3	First	0.3314	0.3480	0.3320	0.3480
					Last	0.3172	0.3382	0.3320	0.3476
0.05	0.2	0.3	0.4	0.5	First	0.4824	0.5048	0.4904	0.5048
					Last	0.4680	0.5034	0.4908	0.5042
0	0	0	0.25	0.5	First	0.5494	0.5722	0.5588	0.5722
					Last	0.5344	0.5634	0.5622	0.5708
0	0	0	0.35	0.35	First	0.4444	0.4626	0.4450	0.4626
					Last	0.4294	0.4608	0.4462	0.4616
0	0	0.25	0.25	0.5	First	0.5482	0.5714	0.5604	0.5714
					Last	0.5322	0.5712	0.5578	0.5712
0	0.125	0.25	0.25	0.25	First	0.2304	0.2398	0.2294	0.2398
					Last	0.2184	0.2368	0.2300	0.2390
0	0.125	0.125	0.125	0.25	First	0.1710	0.1842	0.1792	0.1842
					Last	0.1630	0.1772	0.1834	0.1752
0	0.125	0.125	0.125	0.125	First	0.1062	0.1130	0.1026	0.1130
					Last	0.0974	0.1030	0.1016	0.1018
0.125	0.125	0.125	0.25	0.25	First	0.1388	0.1488	0.1404	0.1488
					Last	0.1286	0.1426	0.1400	0.1428
0	0	0	0.1	0.3	First	0.2620	0.2734	0.2690	0.2734
					Last	0.2482	0.2728	0.2702	0.2732
0	0	0	0.2	0.7	First	0.7200	0.7490	0.7412	0.7490
					Last	0.7016	0.7372	0.7402	0.7390
0	0.1	0.1	0.6	0.6	First	0.7796	0.8032	0.7846	0.8032
					Last	0.7656	0.8014	0.7852	0.8010
0	0.1	0.3	0.4	0.4	First	0.4790	0.4922	0.4746	0.4922
					Last	0.4580	0.4916	0.4762	0.4912
0	0.05	0.2	0.4	0.4	First	0.5012	0.5264	0.4952	0.5264
					Last	0.4812	0.5168	0.4952	0.5166

Table B.100. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0486	0.0488	0.0484	0.0488
					Last	0.0528	0.0500	0.0470	0.0504
0.05	0.15	0.25	0.35	0.45	First	0.4720	0.4926	0.4800	0.4926
					Last	0.5304	0.5324	0.5218	0.5396
0	0.025	0.075	0.175	0.375	First	0.4068	0.4258	0.4242	0.4258
					Last	0.4494	0.4556	0.4472	0.4582
0	0	0	0	0.5	First	0.4600	0.4828	0.4968	0.4828
					Last	0.5084	0.5204	0.5310	0.5220
0	0	0	0.125	0.25	First	0.2610	0.2708	0.2676	0.2708
					Last	0.2890	0.2918	0.2816	0.3014
0	0	0.125	0.25	0.25	First	0.3182	0.3378	0.3256	0.3378
					Last	0.3574	0.3610	0.3398	0.3688
0	0.05	0.05	0.3	0.3	First	0.3792	0.3920	0.3790	0.3920
					Last	0.4238	0.4304	0.4182	0.4316
0.05	0.2	0.3	0.4	0.5	First	0.5280	0.5518	0.5444	0.5518
					Last	0.5828	0.5920	0.5832	0.5988
0	0	0	0.25	0.5	First	0.6188	0.6422	0.6380	0.6422
					Last	0.6756	0.6774	0.6710	0.6780
0	0	0	0.35	0.35	First	0.5104	0.5348	0.5164	0.5348
					Last	0.5622	0.5696	0.5524	0.5726
0	0	0.25	0.25	0.5	First	0.6152	0.6378	0.6290	0.6378
					Last	0.6726	0.6810	0.6692	0.6836
0	0.125	0.25	0.25	0.25	First	0.2518	0.2554	0.2518	0.2554
					Last	0.2790	0.2792	0.2724	0.2886
0	0.125	0.125	0.125	0.25	First	0.1910	0.2020	0.2036	0.2020
					Last	0.2150	0.2134	0.2216	0.2136
0	0.125	0.125	0.125	0.125	First	0.0946	0.0944	0.0948	0.0944
					Last	0.1100	0.1038	0.1032	0.1130
0.125	0.125	0.125	0.25	0.25	First	0.1428	0.1488	0.1412	0.1488
					Last	0.1588	0.1550	0.1492	0.1630
0	0	0	0.1	0.3	First	0.2920	0.3034	0.2990	0.3034
					Last	0.3258	0.3276	0.3206	0.3364
0	0	0	0.2	0.7	First	0.8080	0.8312	0.8282	0.8312
					Last	0.8612	0.8672	0.8658	0.8684
0	0.1	0.1	0.6	0.6	First	0.8442	0.8626	0.8456	0.8626
					Last	0.8914	0.8944	0.8800	0.9024
0	0.1	0.3	0.4	0.4	First	0.5310	0.5508	0.5412	0.5508
					Last	0.5960	0.5942	0.5748	0.5987
0	0.05	0.2	0.4	0.4	First	0.5762	0.5882	0.5696	0.5882
					Last	0.6342	0.6374	0.6172	0.6466

Table B.101. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0456	0.0442	0.0444	0.0442
					Last	0.0464	0.0464	0.0456	0.0446
0.05	0.15	0.25	0.35	0.45	First	0.8094	0.8122	0.7996	0.8122
					Last	0.8594	0.8578	0.8390	0.8584
0	0.025	0.075	0.175	0.375	First	0.7350	0.7428	0.7322	0.7428
					Last	0.7818	0.7738	0.7660	0.7798
0	0	0	0	0.5	First	0.7292	0.7538	0.7652	0.7538
					Last	0.7872	0.7960	0.8084	0.7962
0	0	0	0.125	0.25	First	0.4710	0.4814	0.4784	0.4814
					Last	0.5254	0.5232	0.5134	0.5248
0	0	0.125	0.25	0.25	First	0.6140	0.6326	0.6064	0.6326
					Last	0.6654	0.6736	0.6448	0.6826
0	0.05	0.05	0.3	0.3	First	0.6914	0.7068	0.6816	0.7068
					Last	0.7414	0.7438	0.7192	0.7526
0.05	0.2	0.3	0.4	0.5	First	0.8586	0.8720	0.8562	0.8720
					Last	0.8974	0.8994	0.8852	0.9020
0	0	0	0.25	0.5	First	0.9044	0.9112	0.9024	0.9112
					Last	0.9442	0.9438	0.9342	0.9496
0	0	0	0.35	0.35	First	0.8204	0.8414	0.8176	0.8414
					Last	0.8618	0.8698	0.8470	0.8722
0	0	0.25	0.25	0.5	First	0.9060	0.9148	0.9044	0.9148
					Last	0.9400	0.9378	0.9298	0.9402
0	0.125	0.25	0.25	0.25	First	0.4888	0.5042	0.4924	0.5042
					Last	0.5452	0.5510	0.5338	0.5548
0	0.125	0.125	0.125	0.25	First	0.3664	0.3764	0.3804	0.3764
					Last	0.4112	0.4128	0.4124	0.4202
0	0.125	0.125	0.125	0.125	First	0.1782	0.1814	0.1810	0.1814
					Last	0.1912	0.1864	0.1886	0.1894
0.125	0.125	0.125	0.25	0.25	First	0.2506	0.2622	0.2470	0.2622
					Last	0.2758	0.2786	0.2646	0.2802
0	0	0	0.1	0.3	First	0.5350	0.5516	0.5494	0.5516
					Last	0.5920	0.5930	0.5834	0.5987
0	0	0	0.2	0.7	First	0.9786	0.9792	0.9738	0.9792
					Last	0.9880	0.9858	0.9834	0.9868
0	0.1	0.1	0.6	0.6	First	0.9870	0.9890	0.9852	0.9890
					Last	0.9926	0.9932	0.9914	0.9936
0	0.1	0.3	0.4	0.4	First	0.8548	0.8702	0.8532	0.8702
					Last	0.8930	0.8958	0.8788	0.8972
0	0.05	0.2	0.4	0.4	First	0.8850	0.8974	0.8754	0.8974
					Last	0.9210	0.9230	0.9096	0.9232

Table B.102. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0512	0.0514	0.0512
					Last	0.0542	0.0512	0.0496	0.0488
0.05	0.15	0.25	0.35	0.45	First	0.3656	0.3828	0.3752	0.3828
					Last	0.3984	0.4044	0.4028	0.4118
0	0.025	0.075	0.175	0.375	First	0.3140	0.3242	0.3182	0.3242
					Last	0.3432	0.3448	0.3346	0.3454
0	0	0	0	0.5	First	0.3594	0.3714	0.3800	0.3714
					Last	0.4032	0.4090	0.4156	0.4270
0	0	0	0.125	0.25	First	0.1980	0.2074	0.2074	0.2074
					Last	0.2178	0.2190	0.2192	0.2198
0	0	0.125	0.25	0.25	First	0.2432	0.2550	0.2446	0.2550
					Last	0.2808	0.2802	0.2700	0.2890
0	0.05	0.05	0.3	0.3	First	0.2920	0.3024	0.2952	0.3024
					Last	0.3270	0.3268	0.3144	0.3276
0.05	0.2	0.3	0.4	0.5	First	0.4036	0.4168	0.4140	0.4168
					Last	0.4514	0.4530	0.4450	0.4538
0	0	0	0.25	0.5	First	0.4832	0.5038	0.4976	0.5038
					Last	0.5346	0.5374	0.5332	0.5382
0	0	0	0.35	0.35	First	0.3800	0.3916	0.3782	0.3916
					Last	0.4160	0.4184	0.4034	0.4202
0	0	0.25	0.25	0.5	First	0.4794	0.5000	0.4918	0.5000
					Last	0.5346	0.5384	0.5310	0.5394
0	0.125	0.25	0.25	0.25	First	0.2018	0.2058	0.2046	0.2058
					Last	0.2196	0.2174	0.2164	0.2272
0	0.125	0.125	0.125	0.25	First	0.1612	0.1636	0.1636	0.1636
					Last	0.1804	0.1680	0.1672	0.1686
0	0.125	0.125	0.125	0.125	First	0.0938	0.0928	0.0950	0.0928
					Last	0.1050	0.0968	0.0970	0.1066
0.125	0.125	0.125	0.25	0.25	First	0.1262	0.1250	0.1238	0.1250
					Last	0.1360	0.1298	0.1276	0.1302
0	0	0	0.1	0.3	First	0.2336	0.2404	0.2360	0.2404
					Last	0.2602	0.2496	0.2478	0.2514
0	0	0	0.2	0.7	First	0.6396	0.6668	0.6706	0.6668
					Last	0.6916	0.7020	0.7048	0.7068
0	0.1	0.1	0.6	0.6	First	0.6896	0.7102	0.6912	0.7102
					Last	0.7516	0.7598	0.7360	0.7608
0	0.1	0.3	0.4	0.4	First	0.4180	0.4344	0.4176	0.4344
					Last	0.4590	0.4576	0.4422	0.4592
0	0.05	0.2	0.4	0.4	First	0.4364	0.4534	0.4388	0.4534
					Last	0.4846	0.4878	0.4690	0.4970

Table B.103. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0468	0.0460	0.0484	0.0460
					Last	0.0446	0.0430	0.0470	0.0452
0.05	0.15	0.25	0.35	0.45	First	0.5482	0.5652	0.5582	0.5652
					Last	0.5612	0.5746	0.5744	0.5836
0	0.025	0.075	0.175	0.375	First	0.4780	0.5058	0.4996	0.5058
					Last	0.4894	0.5040	0.5112	0.5210
0	0	0	0	0.5	First	0.5580	0.5782	0.5830	0.5782
					Last	0.5624	0.5800	0.5992	0.5998
0	0	0	0.125	0.25	First	0.2876	0.3034	0.2986	0.3034
					Last	0.2894	0.3016	0.3048	0.3052
0	0	0.125	0.25	0.25	First	0.3746	0.3916	0.3738	0.3916
					Last	0.3828	0.3882	0.3812	0.3992
0	0.05	0.05	0.3	0.3	First	0.4442	0.4636	0.4482	0.4636
					Last	0.4428	0.4658	0.4630	0.4724
0.05	0.2	0.3	0.4	0.5	First	0.6240	0.6498	0.6466	0.6498
					Last	0.6338	0.6536	0.6540	0.6604
0	0	0	0.25	0.5	First	0.7198	0.7330	0.7248	0.7330
					Last	0.7224	0.7404	0.7316	0.7440
0	0	0	0.35	0.35	First	0.5856	0.6124	0.5880	0.6124
					Last	0.5912	0.6178	0.5990	0.6238
0	0	0.25	0.25	0.5	First	0.7278	0.7478	0.7362	0.7478
					Last	0.7372	0.7576	0.7518	0.7616
0	0.125	0.25	0.25	0.25	First	0.2982	0.3152	0.3086	0.3152
					Last	0.3082	0.3170	0.3180	0.3224
0	0.125	0.125	0.125	0.25	First	0.2336	0.2440	0.2456	0.2440
					Last	0.2310	0.2380	0.2474	0.2534
0	0.125	0.125	0.125	0.125	First	0.1114	0.1126	0.1158	0.1126
					Last	0.1124	0.1110	0.1152	0.1232
0.125	0.125	0.125	0.25	0.25	First	0.1642	0.1716	0.1664	0.1716
					Last	0.1702	0.1772	0.1762	0.1780
0	0	0	0.1	0.3	First	0.3432	0.3522	0.3524	0.3522
					Last	0.3446	0.3570	0.3598	0.3626
0	0	0	0.2	0.7	First	0.8878	0.9014	0.8980	0.9014
					Last	0.8898	0.9048	0.9084	0.9096
0	0.1	0.1	0.6	0.6	First	0.9160	0.9282	0.9170	0.9282
					Last	0.9212	0.9334	0.9260	0.9354
0	0.1	0.3	0.4	0.4	First	0.6234	0.6442	0.6254	0.6442
					Last	0.6262	0.6468	0.6380	0.6546
0	0.05	0.2	0.4	0.4	First	0.6682	0.6918	0.6692	0.6918
					Last	0.6762	0.6954	0.6774	0.7006

Table B.104. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0514	0.0490	0.0490	0.0490
					Last	0.0496	0.0468	0.0454	0.0498
0.05	0.15	0.25	0.35	0.45	First	0.8864	0.8886	0.8754	0.8886
					Last	0.8918	0.8944	0.8802	0.8974
0	0.025	0.075	0.175	0.375	First	0.8322	0.8420	0.8270	0.8420
					Last	0.8332	0.8436	0.8354	0.8508
0	0	0	0	0.5	First	0.8278	0.8488	0.8542	0.8488
					Last	0.8368	0.8524	0.8654	0.8674
0	0	0	0.125	0.25	First	0.5786	0.5972	0.5890	0.5972
					Last	0.5896	0.5984	0.5966	0.6078
0	0	0.125	0.25	0.25	First	0.6998	0.7178	0.6932	0.7178
					Last	0.7098	0.7246	0.7034	0.7286
0	0.05	0.05	0.3	0.3	First	0.7770	0.7940	0.7704	0.7940
					Last	0.7870	0.8018	0.7854	0.8092
0.05	0.2	0.3	0.4	0.5	First	0.9222	0.9282	0.9172	0.9282
					Last	0.9222	0.9258	0.9204	0.9294
0	0	0	0.25	0.5	First	0.9628	0.9660	0.9586	0.9660
					Last	0.9666	0.9696	0.9628	0.9704
0	0	0	0.35	0.35	First	0.8922	0.9042	0.8858	0.9042
					Last	0.8950	0.9080	0.8940	0.9136
0	0	0.25	0.25	0.5	First	0.9666	0.9734	0.9638	0.9734
					Last	0.9716	0.9748	0.9684	0.9762
0	0.125	0.25	0.25	0.25	First	0.5904	0.6098	0.6018	0.6098
					Last	0.5890	0.6118	0.6040	0.6206
0	0.125	0.125	0.125	0.25	First	0.4382	0.4476	0.4536	0.4476
					Last	0.4426	0.4538	0.4612	0.4592
0	0.125	0.125	0.125	0.125	First	0.1844	0.1894	0.1976	0.1894
					Last	0.1894	0.1942	0.1964	0.1936
0.125	0.125	0.125	0.25	0.25	First	0.2902	0.3044	0.2972	0.3044
					Last	0.2924	0.3054	0.2990	0.3116
0	0	0	0.1	0.3	First	0.6398	0.6556	0.6452	0.6556
					Last	0.6502	0.6684	0.6656	0.6714
0	0	0	0.2	0.7	First	0.9936	0.9936	0.9916	0.9936
					Last	0.9948	0.9952	0.9930	0.9975
0	0.1	0.1	0.6	0.6	First	0.9968	0.9976	0.9976	0.9976
					Last	0.9978	0.9982	0.9980	0.9987
0	0.1	0.3	0.4	0.4	First	0.9112	0.9212	0.9058	0.9212
					Last	0.9184	0.9268	0.9172	0.9304
0	0.05	0.2	0.4	0.4	First	0.9414	0.9468	0.9330	0.9468
					Last	0.9424	0.9488	0.9388	0.9528

Table B.105. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0474	0.0482	0.0490	0.0482
					Last	0.0478	0.0460	0.0482	0.0466
0.05	0.15	0.25	0.35	0.45	First	0.4268	0.4446	0.4374	0.4446
					Last	0.4308	0.4410	0.4446	0.4482
0	0.025	0.075	0.175	0.375	First	0.3726	0.3832	0.3784	0.3832
					Last	0.3688	0.3710	0.3768	0.3916
0	0	0	0	0.5	First	0.4120	0.4346	0.4490	0.4346
					Last	0.4194	0.4324	0.4588	0.4624
0	0	0	0.125	0.25	First	0.2320	0.2434	0.2378	0.2434
					Last	0.2338	0.2406	0.2412	0.2472
0	0	0.125	0.25	0.25	First	0.2990	0.3144	0.3048	0.3144
					Last	0.3014	0.3110	0.3034	0.3178
0	0.05	0.05	0.3	0.3	First	0.3420	0.3538	0.3402	0.3538
					Last	0.3428	0.3520	0.3502	0.3606
0.05	0.2	0.3	0.4	0.5	First	0.4758	0.4906	0.4832	0.4906
					Last	0.4828	0.4976	0.5000	0.5036
0	0	0	0.25	0.5	First	0.5734	0.5896	0.5854	0.5896
					Last	0.5828	0.5988	0.5934	0.6048
0	0	0	0.35	0.35	First	0.4612	0.4738	0.4510	0.4738
					Last	0.4650	0.4774	0.4658	0.4844
0	0	0.25	0.25	0.5	First	0.5740	0.5970	0.5856	0.5970
					Last	0.5842	0.5980	0.5984	0.6080
0	0.125	0.25	0.25	0.25	First	0.2300	0.2422	0.2370	0.2422
					Last	0.2302	0.2384	0.2364	0.2464
0	0.125	0.125	0.125	0.25	First	0.1804	0.1880	0.1910	0.1880
					Last	0.1790	0.1810	0.1928	0.1964
0	0.125	0.125	0.125	0.125	First	0.0974	0.1026	0.1044	0.1026
					Last	0.1032	0.1020	0.1062	0.1150
0.125	0.125	0.125	0.25	0.25	First	0.1382	0.1480	0.1412	0.1480
					Last	0.1412	0.1416	0.1444	0.1452
0	0	0	0.1	0.3	First	0.2532	0.2684	0.2704	0.2684
					Last	0.2560	0.2688	0.2736	0.2732
0	0	0	0.2	0.7	First	0.7490	0.7710	0.7694	0.7710
					Last	0.7564	0.7770	0.7840	0.7930
0	0.1	0.1	0.6	0.6	First	0.8002	0.8198	0.8006	0.8198
					Last	0.8056	0.8238	0.8076	0.8320
0	0.1	0.3	0.4	0.4	First	0.4736	0.4946	0.4756	0.4946
					Last	0.4782	0.4950	0.4872	0.5034
0	0.05	0.2	0.4	0.4	First	0.5190	0.5398	0.5144	0.5398
					Last	0.5280	0.5400	0.5238	0.5462

Table B.106. Normal, 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0484	0.0460	0.0500	0.0460
					Last	0.0508	0.0474	0.0494	0.0468
0.05	0.15	0.25	0.35	0.45	First	0.6202	0.6444	0.6374	0.6444
					Last	0.6248	0.6454	0.6414	0.6474
0	0.025	0.075	0.175	0.375	First	0.5454	0.5654	0.5620	0.5654
					Last	0.5484	0.5576	0.5502	0.5672
0	0	0	0	0.5	First	0.6044	0.6300	0.6422	0.6300
					Last	0.6146	0.6292	0.6440	0.6484
0	0	0	0.125	0.25	First	0.3384	0.3454	0.3404	0.3454
					Last	0.3442	0.3456	0.3390	0.3492
0	0	0.125	0.25	0.25	First	0.4136	0.4394	0.4224	0.4394
					Last	0.4276	0.4374	0.4226	0.4424
0	0.05	0.05	0.3	0.3	First	0.5140	0.5312	0.5160	0.5312
					Last	0.5220	0.5330	0.5202	0.5362
0.05	0.2	0.3	0.4	0.5	First	0.6854	0.7050	0.6966	0.7050
					Last	0.6846	0.7008	0.6926	0.7058
0	0	0	0.25	0.5	First	0.7874	0.8074	0.7984	0.8074
					Last	0.7936	0.8046	0.7984	0.8092
0	0	0	0.35	0.35	First	0.6554	0.6826	0.6608	0.6826
					Last	0.6638	0.6868	0.6592	0.6878
0	0	0.25	0.25	0.5	First	0.7700	0.7928	0.7884	0.7928
					Last	0.7752	0.7900	0.7838	0.7990
0	0.125	0.25	0.25	0.25	First	0.3460	0.3572	0.3502	0.3572
					Last	0.3422	0.3456	0.3476	0.3550
0	0.125	0.125	0.125	0.25	First	0.2512	0.2566	0.2610	0.2566
					Last	0.2530	0.2604	0.2664	0.2706
0	0.125	0.125	0.125	0.125	First	0.1274	0.1286	0.1320	0.1286
					Last	0.1290	0.1240	0.1266	0.1368
0.125	0.125	0.125	0.25	0.25	First	0.1822	0.1864	0.1766	0.1864
					Last	0.1860	0.1826	0.1732	0.1874
0	0	0	0.1	0.3	First	0.3760	0.3932	0.3912	0.3932
					Last	0.3866	0.3922	0.3932	0.3952
0	0	0	0.2	0.7	First	0.9200	0.9326	0.9296	0.9326
					Last	0.9214	0.9314	0.9310	0.9354
0	0.1	0.1	0.6	0.6	First	0.9518	0.9602	0.9486	0.9602
					Last	0.9532	0.9568	0.9488	0.9610
0	0.1	0.3	0.4	0.4	First	0.6998	0.7224	0.7064	0.7224
					Last	0.7060	0.7250	0.7074	0.7292
0	0.05	0.2	0.4	0.4	First	0.7326	0.7518	0.7326	0.7518
					Last	0.7420	0.7566	0.7352	0.7582

Table B.107. Exponential, 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0502	0.0480	0.0490	0.0480
					Last	0.0516	0.0518	0.0520	0.0512
0.05	0.15	0.25	0.35	0.45	First	0.9258	0.9330	0.9258	0.9330
					Last	0.9302	0.9342	0.9286	0.9380
0	0.025	0.075	0.175	0.375	First	0.8744	0.8814	0.8720	0.8814
					Last	0.8786	0.8810	0.8724	0.8914
0	0	0	0	0.5	First	0.8882	0.9038	0.9068	0.9038
					Last	0.8894	0.9022	0.9096	0.9044
0	0	0	0.125	0.25	First	0.6400	0.6614	0.6488	0.6614
					Last	0.6480	0.6566	0.6448	0.6616
0	0	0.125	0.25	0.25	First	0.7648	0.7832	0.7592	0.7832
					Last	0.7744	0.7822	0.7588	0.7894
0	0.05	0.05	0.3	0.3	First	0.8318	0.8508	0.8352	0.8508
					Last	0.8382	0.8508	0.8342	0.8540
0.05	0.2	0.3	0.4	0.5	First	0.9594	0.9624	0.9552	0.9624
					Last	0.9614	0.9640	0.9566	0.9646
0	0	0	0.25	0.5	First	0.9794	0.9838	0.9794	0.9838
					Last	0.9808	0.9820	0.9792	0.9842
0	0	0	0.35	0.35	First	0.9306	0.9424	0.9292	0.9424
					Last	0.9336	0.9418	0.9304	0.9444
0	0	0.25	0.25	0.5	First	0.9856	0.9866	0.9812	0.9866
					Last	0.9852	0.9856	0.9804	0.9887
0	0.125	0.25	0.25	0.25	First	0.6326	0.6554	0.6402	0.6554
					Last	0.6376	0.6440	0.6370	0.6606
0	0.125	0.125	0.125	0.25	First	0.4884	0.5022	0.5102	0.5022
					Last	0.4914	0.4978	0.5104	0.5038
0	0.125	0.125	0.125	0.125	First	0.2028	0.2126	0.2144	0.2126
					Last	0.2106	0.2118	0.2146	0.2198
0.125	0.125	0.125	0.25	0.25	First	0.3380	0.3508	0.3342	0.3508
					Last	0.3418	0.3440	0.3346	0.3600
0	0	0	0.1	0.3	First	0.7104	0.7192	0.7128	0.7192
					Last	0.7152	0.7170	0.7116	0.7222
0	0	0	0.2	0.7	First	0.9986	0.9988	0.9984	0.9988
					Last	0.9990	0.9992	0.9990	0.9997
0	0.1	0.1	0.6	0.6	First	0.9988	0.9990	0.9984	0.9990
					Last	0.9988	0.9986	0.9984	0.9992
0	0.1	0.3	0.4	0.4	First	0.9512	0.9586	0.9486	0.9586
					Last	0.9552	0.9576	0.9458	0.9603
0	0.05	0.2	0.4	0.4	First	0.9668	0.9690	0.9604	0.9690
					Last	0.9686	0.9674	0.9602	0.9723

Table B.108. T with 3 d.f., 5 Treatments - 1 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0500	0.0474	0.0450	0.0474
					Last	0.0522	0.0496	0.0452	0.0472
0.05	0.15	0.25	0.35	0.45	First	0.4824	0.4970	0.4878	0.4970
					Last	0.4864	0.4932	0.4848	0.5058
0	0.025	0.075	0.175	0.375	First	0.4278	0.4452	0.4352	0.4452
					Last	0.4334	0.4390	0.4336	0.4497
0	0	0	0	0.5	First	0.4676	0.4858	0.5004	0.4858
					Last	0.4784	0.4836	0.4966	0.5018
0	0	0	0.125	0.25	First	0.2530	0.2638	0.2638	0.2638
					Last	0.2540	0.2598	0.2574	0.2732
0	0	0.125	0.25	0.25	First	0.3194	0.3368	0.3246	0.3368
					Last	0.3246	0.3306	0.3190	0.3448
0	0.05	0.05	0.3	0.3	First	0.3874	0.4082	0.3912	0.4082
					Last	0.3888	0.4032	0.3898	0.4116
0.05	0.2	0.3	0.4	0.5	First	0.5538	0.5702	0.5624	0.5702
					Last	0.5600	0.5658	0.5570	0.5726
0	0	0	0.25	0.5	First	0.6326	0.6560	0.6476	0.6560
					Last	0.6344	0.6508	0.6466	0.6570
0	0	0	0.35	0.35	First	0.5128	0.5386	0.5148	0.5386
					Last	0.5196	0.5328	0.5174	0.5478
0	0	0.25	0.25	0.5	First	0.6306	0.6602	0.6424	0.6602
					Last	0.6410	0.6574	0.6438	0.6636
0	0.125	0.25	0.25	0.25	First	0.2580	0.2680	0.2652	0.2680
					Last	0.2624	0.2672	0.2650	0.2694
0	0.125	0.125	0.125	0.25	First	0.1994	0.2052	0.2102	0.2052
					Last	0.2042	0.2016	0.2102	0.2148
0	0.125	0.125	0.125	0.125	First	0.1080	0.1144	0.1158	0.1144
					Last	0.1116	0.1126	0.1170	0.1250
0.125	0.125	0.125	0.25	0.25	First	0.1470	0.1506	0.1438	0.1506
					Last	0.1486	0.1480	0.1402	0.1623
0	0	0	0.1	0.3	First	0.2960	0.3108	0.3066	0.3108
					Last	0.3006	0.3084	0.3078	0.3114
0	0	0	0.2	0.7	First	0.7958	0.8238	0.8246	0.8238
					Last	0.8014	0.8204	0.8220	0.8276
0	0.1	0.1	0.6	0.6	First	0.8454	0.8662	0.8488	0.8662
					Last	0.8442	0.8614	0.8454	0.8698
0	0.1	0.3	0.4	0.4	First	0.5464	0.5714	0.5538	0.5714
					Last	0.5546	0.5654	0.5526	0.5744
0	0.05	0.2	0.4	0.4	First	0.5706	0.5922	0.5674	0.5922
					Last	0.5724	0.5864	0.5634	0.5934

Table B.109. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0524	0.0508	0.0520	0.0508
					Last	0.0578	0.0496	0.0532	0.0506
0.05	0.15	0.25	0.35	0.45	First	0.2526	0.2672	0.2622	0.2672
					Last	0.2704	0.2702	0.2674	0.2752
0	0.025	0.075	0.175	0.375	First	0.2268	0.2398	0.2344	0.2398
					Last	0.2404	0.2362	0.2370	0.2466
0	0	0	0	0.5	First	0.2496	0.2652	0.2686	0.2652
					Last	0.2664	0.2682	0.2668	0.2734
0	0	0	0.125	0.25	First	0.1612	0.1666	0.1580	0.1666
					Last	0.1698	0.1628	0.1604	0.1684
0	0	0.125	0.25	0.25	First	0.1822	0.1838	0.1826	0.1838
					Last	0.1938	0.1884	0.1836	0.1942
0	0.05	0.05	0.3	0.3	First	0.2150	0.2298	0.2196	0.2298
					Last	0.2290	0.2310	0.2262	0.2344
0.05	0.2	0.3	0.4	0.5	First	0.2914	0.3048	0.2986	0.3048
					Last	0.3064	0.3070	0.3042	0.3186
0	0	0	0.25	0.5	First	0.3398	0.3570	0.3488	0.3570
					Last	0.3568	0.3570	0.3490	0.3694
0	0	0	0.35	0.35	First	0.2744	0.2886	0.2832	0.2886
					Last	0.2876	0.2936	0.2812	0.2970
0	0	0.25	0.25	0.5	First	0.3446	0.3686	0.3636	0.3686
					Last	0.3656	0.3700	0.3650	0.3742
0	0.125	0.25	0.25	0.25	First	0.1562	0.1646	0.1622	0.1646
					Last	0.1690	0.1670	0.1608	0.1720
0	0.125	0.125	0.125	0.25	First	0.1328	0.1426	0.1406	0.1426
					Last	0.1388	0.1370	0.1402	0.1430
0	0.125	0.125	0.125	0.125	First	0.0808	0.0856	0.0872	0.0856
					Last	0.0842	0.0822	0.0830	0.0934
0.125	0.125	0.125	0.25	0.25	First	0.1004	0.1062	0.1044	0.1062
					Last	0.1132	0.1050	0.1030	0.1186
0	0	0	0.1	0.3	First	0.1744	0.1778	0.1788	0.1778
					Last	0.1828	0.1824	0.1780	0.1838
0	0	0	0.2	0.7	First	0.4780	0.4994	0.4978	0.4994
					Last	0.4944	0.5018	0.4978	0.5124
0	0.1	0.1	0.6	0.6	First	0.5202	0.5470	0.5266	0.5470
					Last	0.5452	0.5514	0.5288	0.5598
0	0.1	0.3	0.4	0.4	First	0.3012	0.3200	0.3052	0.3200
					Last	0.3134	0.3192	0.3112	0.3320
0	0.05	0.2	0.4	0.4	First	0.3192	0.3356	0.3248	0.3356
					Last	0.3314	0.3300	0.3220	0.3424

Table B.110. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0514	0.0542	0.0518	0.0542
					Last	0.0554	0.0520	0.0522	0.0522
0.05	0.15	0.25	0.35	0.45	First	0.4924	0.4932	0.4756	0.4932
					Last	0.5090	0.4996	0.4810	0.5094
0	0.025	0.075	0.175	0.375	First	0.4152	0.4354	0.4204	0.4354
					Last	0.4400	0.4354	0.4310	0.4464
0	0	0	0	0.5	First	0.4010	0.4212	0.4310	0.4212
					Last	0.4222	0.4288	0.4344	0.4394
0	0	0	0.125	0.25	First	0.2562	0.2686	0.2606	0.2686
					Last	0.2622	0.2582	0.2566	0.2672
0	0	0.125	0.25	0.25	First	0.3312	0.3448	0.3344	0.3448
					Last	0.3560	0.3540	0.3406	0.3588
0	0.05	0.05	0.3	0.3	First	0.3760	0.3944	0.3752	0.3944
					Last	0.3932	0.3950	0.3752	0.4048
0.05	0.2	0.3	0.4	0.5	First	0.5424	0.5552	0.5302	0.5552
					Last	0.5660	0.5538	0.5380	0.5664
0	0	0	0.25	0.5	First	0.5922	0.6186	0.5982	0.6186
					Last	0.6194	0.6240	0.6040	0.6328
0	0	0	0.35	0.35	First	0.4816	0.5080	0.4846	0.5080
					Last	0.5050	0.5184	0.5006	0.5224
0	0	0.25	0.25	0.5	First	0.6086	0.6190	0.6002	0.6190
					Last	0.6302	0.6230	0.6084	0.6362
0	0.125	0.25	0.25	0.25	First	0.2704	0.2800	0.2752	0.2800
					Last	0.2860	0.2792	0.2724	0.2858
0	0.125	0.125	0.125	0.25	First	0.2254	0.2236	0.2220	0.2236
					Last	0.2330	0.2190	0.2166	0.2354
0	0.125	0.125	0.125	0.125	First	0.1116	0.1152	0.1168	0.1152
					Last	0.1174	0.1152	0.1184	0.1254
0.125	0.125	0.125	0.25	0.25	First	0.1574	0.1588	0.1534	0.1588
					Last	0.1678	0.1642	0.1576	0.1752
0	0	0	0.1	0.3	First	0.2836	0.2982	0.2968	0.2982
					Last	0.3030	0.3034	0.3048	0.3130
0	0	0	0.2	0.7	First	0.7414	0.7592	0.7412	0.7592
					Last	0.7634	0.7634	0.7480	0.7734
0	0.1	0.1	0.6	0.6	First	0.7898	0.8156	0.7888	0.8156
					Last	0.8106	0.8214	0.7962	0.8316
0	0.1	0.3	0.4	0.4	First	0.5444	0.5582	0.5296	0.5582
					Last	0.5590	0.5584	0.5310	0.5722
0	0.05	0.2	0.4	0.4	First	0.5580	0.5832	0.5482	0.5832
					Last	0.5792	0.5778	0.5568	0.5904

Table B.111. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0532	0.0488	0.0492	0.0488
					Last	0.0510	0.0464	0.0456	0.0484
0.05	0.15	0.25	0.35	0.45	First	0.2002	0.2084	0.2068	0.2084
					Last	0.2140	0.2162	0.2182	0.2184
0	0.025	0.075	0.175	0.375	First	0.1866	0.1950	0.1974	0.1950
					Last	0.1984	0.1992	0.1976	0.2012
0	0	0	0	0.5	First	0.1944	0.2094	0.2174	0.2094
					Last	0.2042	0.2086	0.2130	0.2164
0	0	0	0.125	0.25	First	0.1292	0.1308	0.1310	0.1308
					Last	0.1380	0.1350	0.1314	0.1454
0	0	0.125	0.25	0.25	First	0.1498	0.1572	0.1558	0.1572
					Last	0.1574	0.1552	0.1516	0.1598
0	0.05	0.05	0.3	0.3	First	0.1672	0.1762	0.1720	0.1762
					Last	0.1832	0.1778	0.1724	0.1904
0.05	0.2	0.3	0.4	0.5	First	0.2208	0.2352	0.2348	0.2352
					Last	0.2390	0.2336	0.2334	0.2430
0	0	0	0.25	0.5	First	0.2600	0.2714	0.2642	0.2714
					Last	0.2704	0.2686	0.2684	0.2802
0	0	0	0.35	0.35	First	0.2198	0.2298	0.2224	0.2298
					Last	0.2254	0.2280	0.2190	0.2316
0	0	0.25	0.25	0.5	First	0.2704	0.2868	0.2800	0.2868
					Last	0.2824	0.2840	0.2710	0.2888
0	0.125	0.25	0.25	0.25	First	0.1286	0.1336	0.1326	0.1336
					Last	0.1414	0.1364	0.1352	0.1484
0	0.125	0.125	0.125	0.25	First	0.0996	0.1080	0.1086	0.1080
					Last	0.1046	0.1056	0.1064	0.1112
0	0.125	0.125	0.125	0.125	First	0.0724	0.0730	0.0732	0.0730
					Last	0.0772	0.0738	0.0726	0.0854
0.125	0.125	0.125	0.25	0.25	First	0.0932	0.0966	0.0958	0.0966
					Last	0.1042	0.0972	0.0908	0.0998
0	0	0	0.1	0.3	First	0.1442	0.1432	0.1402	0.1432
					Last	0.1448	0.1402	0.1414	0.1526
0	0	0	0.2	0.7	First	0.3634	0.3780	0.3754	0.3780
					Last	0.3828	0.3824	0.3776	0.3914
0	0.1	0.1	0.6	0.6	First	0.4056	0.4278	0.4158	0.4278
					Last	0.4282	0.4280	0.4096	0.4366
0	0.1	0.3	0.4	0.4	First	0.2272	0.2388	0.2308	0.2388
					Last	0.2486	0.2422	0.2352	0.2503
0	0.05	0.2	0.4	0.4	First	0.2406	0.2488	0.2412	0.2488
					Last	0.2528	0.2496	0.2406	0.2576

Table B.112. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0566	0.0508	0.0498	0.0508
					Last	0.0558	0.0534	0.0468	0.0506
0.05	0.15	0.25	0.35	0.45	First	0.3124	0.3338	0.3248	0.3338
					Last	0.3142	0.3252	0.3176	0.3438
0	0.025	0.075	0.175	0.375	First	0.2710	0.2844	0.2800	0.2844
					Last	0.2726	0.2822	0.2700	0.2848
0	0	0	0	0.5	First	0.3088	0.3254	0.3338	0.3254
					Last	0.3118	0.3240	0.3236	0.3368
0	0	0	0.125	0.25	First	0.1810	0.1772	0.1738	0.1772
					Last	0.1812	0.1792	0.1702	0.1888
0	0	0.125	0.25	0.25	First	0.2226	0.2350	0.2240	0.2350
					Last	0.2292	0.2334	0.2202	0.2358
0	0.05	0.05	0.3	0.3	First	0.2572	0.2746	0.2648	0.2746
					Last	0.2666	0.2744	0.2600	0.2762
0.05	0.2	0.3	0.4	0.5	First	0.3640	0.3824	0.3712	0.3824
					Last	0.3730	0.3796	0.3610	0.3840
0	0	0	0.25	0.5	First	0.4290	0.4538	0.4424	0.4538
					Last	0.4318	0.4494	0.4290	0.4554
0	0	0	0.35	0.35	First	0.3388	0.3562	0.3368	0.3562
					Last	0.3452	0.3514	0.3282	0.3644
0	0	0.25	0.25	0.5	First	0.4154	0.4414	0.4254	0.4414
					Last	0.4152	0.4348	0.4156	0.4418
0	0.125	0.25	0.25	0.25	First	0.1796	0.1874	0.1860	0.1874
					Last	0.1832	0.1874	0.1798	0.1888
0	0.125	0.125	0.125	0.25	First	0.1552	0.1568	0.1588	0.1568
					Last	0.1582	0.1592	0.1554	0.1594
0	0.125	0.125	0.125	0.125	First	0.0934	0.0940	0.0924	0.0940
					Last	0.0942	0.0914	0.0912	0.0978
0.125	0.125	0.125	0.25	0.25	First	0.1104	0.1138	0.1092	0.1138
					Last	0.1126	0.1136	0.1076	0.1140
0	0	0	0.1	0.3	First	0.2138	0.2132	0.2112	0.2132
					Last	0.2198	0.2164	0.2078	0.2258
0	0	0	0.2	0.7	First	0.5822	0.6086	0.6018	0.6086
					Last	0.5828	0.6016	0.5836	0.6180
0	0.1	0.1	0.6	0.6	First	0.6382	0.6836	0.6554	0.6836
					Last	0.6458	0.6704	0.6464	0.6926
0	0.1	0.3	0.4	0.4	First	0.3684	0.3896	0.3754	0.3896
					Last	0.3622	0.3820	0.3674	0.3906
0	0.05	0.2	0.4	0.4	First	0.3780	0.3972	0.3728	0.3972
					Last	0.3818	0.3910	0.3696	0.3980

Table B.113. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0508	0.0524	0.0530	0.0524
					Last	0.0542	0.0530	0.0540	0.0526
0.05	0.15	0.25	0.35	0.45	First	0.5832	0.6078	0.5878	0.6078
					Last	0.5928	0.5966	0.5712	0.6086
0	0.025	0.075	0.175	0.375	First	0.5182	0.5280	0.5092	0.5280
					Last	0.5162	0.5192	0.4964	0.5286
0	0	0	0	0.5	First	0.5000	0.5294	0.5410	0.5294
					Last	0.5064	0.5260	0.5298	0.5332
0	0	0	0.125	0.25	First	0.3206	0.3358	0.3314	0.3358
					Last	0.3160	0.3234	0.3148	0.3380
0	0	0.125	0.25	0.25	First	0.4248	0.4392	0.4140	0.4392
					Last	0.4252	0.4348	0.4020	0.4502
0	0.05	0.05	0.3	0.3	First	0.4694	0.4868	0.4618	0.4868
					Last	0.4710	0.4826	0.4544	0.4888
0.05	0.2	0.3	0.4	0.5	First	0.6600	0.6724	0.6534	0.6724
					Last	0.6588	0.6620	0.6388	0.6740
0	0	0	0.25	0.5	First	0.7062	0.7278	0.7078	0.7278
					Last	0.7024	0.7204	0.6952	0.7302
0	0	0	0.35	0.35	First	0.5882	0.6266	0.5978	0.6266
					Last	0.5874	0.6144	0.5832	0.6292
0	0	0.25	0.25	0.5	First	0.7318	0.7516	0.7244	0.7516
					Last	0.7314	0.7398	0.7082	0.7614
0	0.125	0.25	0.25	0.25	First	0.3324	0.3410	0.3280	0.3410
					Last	0.3368	0.3362	0.3174	0.3498
0	0.125	0.125	0.125	0.25	First	0.2478	0.2538	0.2532	0.2538
					Last	0.2474	0.2556	0.2480	0.2568
0	0.125	0.125	0.125	0.125	First	0.1386	0.1382	0.1328	0.1382
					Last	0.1418	0.1376	0.1312	0.1480
0.125	0.125	0.125	0.25	0.25	First	0.1838	0.1838	0.1738	0.1838
					Last	0.1852	0.1864	0.1716	0.1956
0	0	0	0.1	0.3	First	0.3610	0.3730	0.3684	0.3730
					Last	0.3634	0.3660	0.3548	0.3742
0	0	0	0.2	0.7	First	0.8440	0.8604	0.8454	0.8604
					Last	0.8474	0.8486	0.8314	0.8616
0	0.1	0.1	0.6	0.6	First	0.8890	0.9088	0.8886	0.9088
					Last	0.8904	0.9022	0.8784	0.9182
0	0.1	0.3	0.4	0.4	First	0.6474	0.6658	0.6418	0.6658
					Last	0.6450	0.6650	0.6268	0.6798
0	0.05	0.2	0.4	0.4	First	0.6744	0.7048	0.6784	0.7048
					Last	0.6830	0.6960	0.6580	0.7068

Table B.114. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0504	0.0510	0.0502	0.0510
					Last	0.0518	0.0514	0.0488	0.0508
0.05	0.15	0.25	0.35	0.45	First	0.2510	0.2616	0.2540	0.2616
					Last	0.2532	0.2564	0.2458	0.2636
0	0.025	0.075	0.175	0.375	First	0.2266	0.2268	0.2188	0.2268
					Last	0.2286	0.2268	0.2166	0.2384
0	0	0	0	0.5	First	0.2438	0.2608	0.2604	0.2608
					Last	0.2482	0.2552	0.2548	0.2706
0	0	0	0.125	0.25	First	0.1448	0.1438	0.1428	0.1438
					Last	0.1458	0.1480	0.1398	0.1566
0	0	0.125	0.25	0.25	First	0.1806	0.1888	0.1858	0.1888
					Last	0.1814	0.1896	0.1796	0.1988
0	0.05	0.05	0.3	0.3	First	0.1932	0.2042	0.2002	0.2042
					Last	0.1952	0.2026	0.1972	0.2050
0.05	0.2	0.3	0.4	0.5	First	0.2690	0.2742	0.2704	0.2742
					Last	0.2728	0.2760	0.2612	0.2858
0	0	0	0.25	0.5	First	0.3122	0.3288	0.3262	0.3288
					Last	0.3188	0.3274	0.3170	0.3384
0	0	0	0.35	0.35	First	0.2608	0.2766	0.2604	0.2766
					Last	0.2648	0.2714	0.2528	0.2856
0	0	0.25	0.25	0.5	First	0.3228	0.3342	0.3316	0.3342
					Last	0.3268	0.3286	0.3162	0.3360
0	0.125	0.25	0.25	0.25	First	0.1520	0.1526	0.1546	0.1526
					Last	0.1528	0.1540	0.1482	0.1630
0	0.125	0.125	0.125	0.25	First	0.1230	0.1232	0.1266	0.1232
					Last	0.1276	0.1256	0.1252	0.1346
0	0.125	0.125	0.125	0.125	First	0.0878	0.0864	0.0842	0.0864
					Last	0.0900	0.0878	0.0842	0.0856
0.125	0.125	0.125	0.25	0.25	First	0.0994	0.0994	0.0968	0.0994
					Last	0.1018	0.1024	0.0944	0.1090
0	0	0	0.1	0.3	First	0.1594	0.1666	0.1658	0.1666
					Last	0.1654	0.1676	0.1634	0.1674
0	0	0	0.2	0.7	First	0.4552	0.4758	0.4668	0.4758
					Last	0.4562	0.4660	0.4546	0.4788
0	0.1	0.1	0.6	0.6	First	0.4824	0.5044	0.4820	0.5044
					Last	0.4846	0.4960	0.4688	0.5052
0	0.1	0.3	0.4	0.4	First	0.2774	0.2976	0.2896	0.2976
					Last	0.2790	0.2914	0.2788	0.3008
0	0.05	0.2	0.4	0.4	First	0.3018	0.3184	0.2996	0.3184
					Last	0.3086	0.3118	0.2966	0.3265

Table B.115. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0506	0.0502	0.0452	0.0502
					Last	0.0530	0.0534	0.0486	0.0504
0.05	0.15	0.25	0.35	0.45	First	0.3700	0.3930	0.3802	0.3930
					Last	0.3772	0.3940	0.3764	0.3976
0	0.025	0.075	0.175	0.375	First	0.3048	0.3296	0.3264	0.3296
					Last	0.3090	0.3298	0.3222	0.3318
0	0	0	0	0.5	First	0.3608	0.3874	0.3862	0.3874
					Last	0.3654	0.3826	0.3824	0.3890
0	0	0	0.125	0.25	First	0.2042	0.2064	0.2036	0.2064
					Last	0.2088	0.2114	0.2016	0.2210
0	0	0.125	0.25	0.25	First	0.2536	0.2726	0.2650	0.2726
					Last	0.2522	0.2698	0.2572	0.2774
0	0.05	0.05	0.3	0.3	First	0.2870	0.3072	0.2944	0.3072
					Last	0.2918	0.3092	0.2922	0.3114
0.05	0.2	0.3	0.4	0.5	First	0.3974	0.4228	0.4198	0.4228
					Last	0.4040	0.4260	0.4124	0.4280
0	0	0	0.25	0.5	First	0.4752	0.5030	0.4916	0.5030
					Last	0.4818	0.5018	0.4826	0.5054
0	0	0	0.35	0.35	First	0.3754	0.4082	0.3956	0.4082
					Last	0.3808	0.4098	0.3842	0.4114
0	0	0.25	0.25	0.5	First	0.4910	0.5180	0.5024	0.5180
					Last	0.4928	0.5168	0.4918	0.5238
0	0.125	0.25	0.25	0.25	First	0.2002	0.2146	0.2112	0.2146
					Last	0.2040	0.2186	0.2116	0.2184
0	0.125	0.125	0.125	0.25	First	0.1592	0.1702	0.1714	0.1702
					Last	0.1666	0.1734	0.1752	0.1785
0	0.125	0.125	0.125	0.125	First	0.0920	0.0992	0.1046	0.0992
					Last	0.0958	0.1046	0.1056	0.1098
0.125	0.125	0.125	0.25	0.25	First	0.1326	0.1318	0.1268	0.1318
					Last	0.1334	0.1340	0.1254	0.1396
0	0	0	0.1	0.3	First	0.2166	0.2314	0.2284	0.2314
					Last	0.2188	0.2354	0.2240	0.2414
0	0	0	0.2	0.7	First	0.6616	0.6924	0.6780	0.6924
					Last	0.6638	0.6894	0.6716	0.6930
0	0.1	0.1	0.6	0.6	First	0.7056	0.7426	0.7182	0.7426
					Last	0.7052	0.7398	0.7102	0.7480
0	0.1	0.3	0.4	0.4	First	0.4234	0.4552	0.4344	0.4552
					Last	0.4292	0.4494	0.4268	0.4566
0	0.05	0.2	0.4	0.4	First	0.4410	0.4710	0.4510	0.4710
					Last	0.4430	0.4618	0.4376	0.4766

Table B.116. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0516	0.0520	0.0516
					Last	0.0550	0.0538	0.0536	0.0504
0.05	0.15	0.25	0.35	0.45	First	0.6616	0.6854	0.6554	0.6854
					Last	0.6660	0.6820	0.6518	0.6898
0	0.025	0.075	0.175	0.375	First	0.5728	0.5978	0.5752	0.5978
					Last	0.5766	0.5892	0.5668	0.6032
0	0	0	0	0.5	First	0.5748	0.6140	0.6256	0.6140
					Last	0.5744	0.6078	0.6100	0.6212
0	0	0	0.125	0.25	First	0.3590	0.3784	0.3662	0.3784
					Last	0.3624	0.3768	0.3590	0.3810
0	0	0.125	0.25	0.25	First	0.4666	0.4904	0.4684	0.4904
					Last	0.4730	0.4892	0.4638	0.4916
0	0.05	0.05	0.3	0.3	First	0.5346	0.5640	0.5318	0.5640
					Last	0.5382	0.5604	0.5316	0.5666
0.05	0.2	0.3	0.4	0.5	First	0.7234	0.7412	0.7218	0.7412
					Last	0.7236	0.7350	0.7074	0.7476
0	0	0	0.25	0.5	First	0.8012	0.8230	0.7980	0.8230
					Last	0.8014	0.8222	0.7906	0.8270
0	0	0	0.35	0.35	First	0.6572	0.7004	0.6724	0.7004
					Last	0.6600	0.6898	0.6576	0.7060
0	0	0.25	0.25	0.5	First	0.8012	0.8254	0.8006	0.8254
					Last	0.8026	0.8176	0.7924	0.8270
0	0.125	0.25	0.25	0.25	First	0.3738	0.3890	0.3778	0.3890
					Last	0.3724	0.3900	0.3736	0.3910
0	0.125	0.125	0.125	0.25	First	0.2744	0.2882	0.2818	0.2882
					Last	0.2790	0.2910	0.2784	0.2934
0	0.125	0.125	0.125	0.125	First	0.1318	0.1368	0.1370	0.1368
					Last	0.1360	0.1378	0.1358	0.1418
0.125	0.125	0.125	0.25	0.25	First	0.1980	0.2064	0.1976	0.2064
					Last	0.1990	0.2068	0.1936	0.2092
0	0	0	0.1	0.3	First	0.4154	0.4382	0.4350	0.4382
					Last	0.4218	0.4398	0.4286	0.4480
0	0	0	0.2	0.7	First	0.8996	0.9156	0.9080	0.9156
					Last	0.8980	0.9124	0.8988	0.9162
0	0.1	0.1	0.6	0.6	First	0.9348	0.9486	0.9346	0.9486
					Last	0.9360	0.9478	0.9294	0.9518
0	0.1	0.3	0.4	0.4	First	0.7036	0.7382	0.7100	0.7382
					Last	0.7046	0.7342	0.7010	0.7388
0	0.05	0.2	0.4	0.4	First	0.7472	0.7784	0.7442	0.7784
					Last	0.7518	0.7702	0.7342	0.7824

Table B.117. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0508	0.0508	0.0528	0.0508
					Last	0.0548	0.0532	0.0538	0.0516
0.05	0.15	0.25	0.35	0.45	First	0.2778	0.2912	0.2884	0.2912
					Last	0.2846	0.2958	0.2842	0.2976
0	0.025	0.075	0.175	0.375	First	0.2396	0.2552	0.2580	0.2552
					Last	0.2428	0.2586	0.2528	0.2616
0	0	0	0	0.5	First	0.2782	0.3020	0.3072	0.3020
					Last	0.2840	0.2992	0.2988	0.3044
0	0	0	0.125	0.25	First	0.1532	0.1616	0.1602	0.1616
					Last	0.1572	0.1640	0.1566	0.1679
0	0	0.125	0.25	0.25	First	0.1958	0.2102	0.2014	0.2102
					Last	0.2040	0.2136	0.1984	0.2160
0	0.05	0.05	0.3	0.3	First	0.2266	0.2420	0.2366	0.2420
					Last	0.2326	0.2436	0.2320	0.2454
0.05	0.2	0.3	0.4	0.5	First	0.3202	0.3342	0.3232	0.3342
					Last	0.3224	0.3332	0.3220	0.3392
0	0	0	0.25	0.5	First	0.3714	0.3936	0.3820	0.3936
					Last	0.3732	0.3884	0.3736	0.3976
0	0	0	0.35	0.35	First	0.3004	0.3120	0.2944	0.3120
					Last	0.3038	0.3160	0.2930	0.3164
0	0	0.25	0.25	0.5	First	0.3602	0.3958	0.3882	0.3958
					Last	0.3672	0.3936	0.3848	0.3996
0	0.125	0.25	0.25	0.25	First	0.1584	0.1726	0.1656	0.1726
					Last	0.1648	0.1744	0.1666	0.1840
0	0.125	0.125	0.125	0.25	First	0.1280	0.1392	0.1412	0.1392
					Last	0.1336	0.1400	0.1396	0.1502
0	0.125	0.125	0.125	0.125	First	0.0830	0.0798	0.0816	0.0798
					Last	0.0848	0.0836	0.0826	0.0934
0.125	0.125	0.125	0.25	0.25	First	0.0994	0.1024	0.1056	0.1024
					Last	0.1036	0.1096	0.1058	0.1150
0	0	0	0.1	0.3	First	0.1832	0.1910	0.1854	0.1910
					Last	0.1902	0.1936	0.1834	0.2012
0	0	0	0.2	0.7	First	0.5144	0.5412	0.5298	0.5412
					Last	0.5104	0.5332	0.5194	0.5456
0	0.1	0.1	0.6	0.6	First	0.5498	0.5872	0.5670	0.5872
					Last	0.5578	0.5804	0.5512	0.5952
0	0.1	0.3	0.4	0.4	First	0.3122	0.3364	0.3230	0.3364
					Last	0.3196	0.3362	0.3188	0.3402
0	0.05	0.2	0.4	0.4	First	0.3268	0.3430	0.3328	0.3430
					Last	0.3308	0.3474	0.3260	0.3466

Table B.118. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0430	0.0464	0.0494	0.0464
					Last	0.0556	0.0516	0.0514	0.0518
0.05	0.15	0.25	0.35	0.45	First	0.3384	0.3646	0.3634	0.3646
					Last	0.3942	0.3948	0.3912	0.3964
0	0.025	0.075	0.175	0.375	First	0.2914	0.3122	0.3084	0.3122
					Last	0.3362	0.3316	0.3284	0.3372
0	0	0	0	0.5	First	0.3338	0.3564	0.3662	0.3564
					Last	0.3896	0.3910	0.4040	0.4094
0	0	0	0.125	0.25	First	0.2072	0.2162	0.2120	0.2162
					Last	0.2378	0.2298	0.2286	0.2440
0	0	0.125	0.25	0.25	First	0.2282	0.2470	0.2358	0.2470
					Last	0.2608	0.2676	0.2552	0.2676
0	0.05	0.05	0.3	0.3	First	0.2702	0.2968	0.2892	0.2968
					Last	0.3172	0.3202	0.3136	0.3218
0.05	0.2	0.3	0.4	0.5	First	0.3872	0.4156	0.4102	0.4156
					Last	0.4494	0.4532	0.4444	0.4556
0	0	0	0.25	0.5	First	0.4606	0.4960	0.4856	0.4960
					Last	0.5226	0.5244	0.5188	0.5290
0	0	0	0.35	0.35	First	0.3502	0.3826	0.3706	0.3826
					Last	0.4072	0.4178	0.4056	0.4210
0	0	0.25	0.25	0.5	First	0.4744	0.5108	0.5054	0.5108
					Last	0.5334	0.5376	0.5338	0.5442
0	0.125	0.25	0.25	0.25	First	0.1940	0.2020	0.1956	0.2020
					Last	0.2186	0.2148	0.2088	0.2274
0	0.125	0.125	0.125	0.25	First	0.1496	0.1590	0.1670	0.1590
					Last	0.1710	0.1682	0.1686	0.1780
0	0.125	0.125	0.125	0.125	First	0.0952	0.0982	0.0964	0.0982
					Last	0.1084	0.1024	0.1056	0.1120
0.125	0.125	0.125	0.25	0.25	First	0.1160	0.1246	0.1222	0.1246
					Last	0.1274	0.1274	0.1268	0.1280
0	0	0	0.1	0.3	First	0.2236	0.2408	0.2418	0.2408
					Last	0.2548	0.2518	0.2506	0.2558
0	0	0	0.2	0.7	First	0.6362	0.6722	0.6672	0.6722
					Last	0.7052	0.7116	0.7082	0.7166
0	0.1	0.1	0.6	0.6	First	0.6818	0.7180	0.7026	0.7180
					Last	0.7474	0.7648	0.7488	0.7706
0	0.1	0.3	0.4	0.4	First	0.3810	0.4120	0.3996	0.4120
					Last	0.4390	0.4486	0.4326	0.4584
0	0.05	0.2	0.4	0.4	First	0.4148	0.4410	0.4152	0.4410
					Last	0.4766	0.4778	0.4606	0.4798

Table B.119. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0466	0.0482	0.0492	0.0482
					Last	0.0506	0.0496	0.0526	0.0484
0.05	0.15	0.25	0.35	0.45	First	0.6404	0.6586	0.6358	0.6586
					Last	0.7042	0.6982	0.6840	0.7060
0	0.025	0.075	0.175	0.375	First	0.5540	0.5762	0.5646	0.5762
					Last	0.6122	0.6112	0.5984	0.6132
0	0	0	0	0.5	First	0.5438	0.5830	0.5904	0.5830
					Last	0.6222	0.6314	0.6470	0.6368
0	0	0	0.125	0.25	First	0.3404	0.3640	0.3550	0.3640
					Last	0.3916	0.3914	0.3834	0.3976
0	0	0.125	0.25	0.25	First	0.4434	0.4672	0.4402	0.4672
					Last	0.5026	0.4958	0.4722	0.5122
0	0.05	0.05	0.3	0.3	First	0.5126	0.5458	0.5208	0.5458
					Last	0.5724	0.5776	0.5596	0.5858
0.05	0.2	0.3	0.4	0.5	First	0.6926	0.7190	0.6944	0.7190
					Last	0.7638	0.7624	0.7410	0.7668
0	0	0	0.25	0.5	First	0.7688	0.7968	0.7744	0.7968
					Last	0.8314	0.8298	0.8166	0.8346
0	0	0	0.35	0.35	First	0.6408	0.6788	0.6600	0.6788
					Last	0.7138	0.7272	0.7030	0.7318
0	0	0.25	0.25	0.5	First	0.7738	0.7916	0.7748	0.7916
					Last	0.8282	0.8286	0.8132	0.8324
0	0.125	0.25	0.25	0.25	First	0.3480	0.3662	0.3604	0.3662
					Last	0.4016	0.3986	0.3882	0.4092
0	0.125	0.125	0.125	0.25	First	0.2764	0.2904	0.2932	0.2904
					Last	0.3158	0.3128	0.3204	0.3266
0	0.125	0.125	0.125	0.125	First	0.1290	0.1352	0.1358	0.1352
					Last	0.1484	0.1434	0.1446	0.1520
0.125	0.125	0.125	0.25	0.25	First	0.1876	0.2048	0.1984	0.2048
					Last	0.2220	0.2170	0.2100	0.2290
0	0	0	0.1	0.3	First	0.3918	0.4168	0.4142	0.4168
					Last	0.4508	0.4492	0.4510	0.4618
0	0	0	0.2	0.7	First	0.8876	0.9054	0.8978	0.9054
					Last	0.9312	0.9250	0.9188	0.9392
0	0.1	0.1	0.6	0.6	First	0.9234	0.9400	0.9276	0.9400
					Last	0.9542	0.9580	0.9496	0.9592
0	0.1	0.3	0.4	0.4	First	0.6844	0.7082	0.6854	0.7082
					Last	0.7446	0.7428	0.7292	0.7486
0	0.05	0.2	0.4	0.4	First	0.7238	0.7494	0.7290	0.7494
					Last	0.7864	0.7934	0.7690	0.7976

Table B.120. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0478	0.0538	0.0560	0.0538
					Last	0.0564	0.0538	0.0528	0.0536
0.05	0.15	0.25	0.35	0.45	First	0.2714	0.2948	0.2936	0.2948
					Last	0.3216	0.3208	0.3166	0.3278
0	0.025	0.075	0.175	0.375	First	0.2186	0.2358	0.2358	0.2358
					Last	0.2610	0.2544	0.2566	0.2682
0	0	0	0	0.5	First	0.2512	0.2704	0.2776	0.2704
					Last	0.2976	0.3008	0.3046	0.3048
0	0	0	0.125	0.25	First	0.1648	0.1754	0.1764	0.1754
					Last	0.1856	0.1790	0.1778	0.1892
0	0	0.125	0.25	0.25	First	0.1858	0.1962	0.1884	0.1962
					Last	0.2120	0.2090	0.2030	0.2208
0	0.05	0.05	0.3	0.3	First	0.2114	0.2266	0.2118	0.2266
					Last	0.2424	0.2402	0.2294	0.2492
0.05	0.2	0.3	0.4	0.5	First	0.2920	0.3128	0.3012	0.3128
					Last	0.3364	0.3366	0.3340	0.3494
0	0	0	0.25	0.5	First	0.3490	0.3754	0.3660	0.3754
					Last	0.4016	0.4048	0.3956	0.4197
0	0	0	0.35	0.35	First	0.2680	0.2898	0.2744	0.2898
					Last	0.3150	0.3154	0.3038	0.3192
0	0	0.25	0.25	0.5	First	0.3370	0.3670	0.3520	0.3670
					Last	0.3912	0.3920	0.3900	0.3948
0	0.125	0.25	0.25	0.25	First	0.1596	0.1718	0.1696	0.1718
					Last	0.1812	0.1794	0.1798	0.1888
0	0.125	0.125	0.125	0.25	First	0.1254	0.1370	0.1384	0.1370
					Last	0.1462	0.1428	0.1446	0.1542
0	0.125	0.125	0.125	0.125	First	0.0770	0.0884	0.0904	0.0884
					Last	0.0956	0.0930	0.0928	0.1036
0.125	0.125	0.125	0.25	0.25	First	0.0886	0.0980	0.1008	0.0980
					Last	0.1080	0.1088	0.1076	0.1158
0	0	0	0.1	0.3	First	0.1768	0.1884	0.1888	0.1884
					Last	0.2044	0.2034	0.2038	0.2089
0	0	0	0.2	0.7	First	0.4888	0.5222	0.5214	0.5222
					Last	0.5466	0.5572	0.5544	0.5640
0	0.1	0.1	0.6	0.6	First	0.5340	0.5638	0.5458	0.5638
					Last	0.5964	0.5978	0.5812	0.6056
0	0.1	0.3	0.4	0.4	First	0.2988	0.3240	0.3120	0.3240
					Last	0.3486	0.3518	0.3398	0.3538
0	0.05	0.2	0.4	0.4	First	0.3110	0.3340	0.3272	0.3340
					Last	0.3590	0.3614	0.3524	0.3624

Table B.121. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0554	0.0500	0.0514	0.0500
					Last	0.0538	0.0492	0.0492	0.0494
0.05	0.15	0.25	0.35	0.45	First	0.4148	0.4322	0.4246	0.4322
					Last	0.4254	0.4326	0.4244	0.4452
0	0.025	0.075	0.175	0.375	First	0.3388	0.3686	0.3574	0.3686
					Last	0.3502	0.3620	0.3578	0.3772
0	0	0	0	0.5	First	0.4094	0.4354	0.4424	0.4354
					Last	0.4128	0.4308	0.4420	0.4476
0	0	0	0.125	0.25	First	0.2316	0.2344	0.2288	0.2344
					Last	0.2358	0.2352	0.2332	0.2426
0	0	0.125	0.25	0.25	First	0.2864	0.2998	0.2800	0.2998
					Last	0.2902	0.2944	0.2838	0.3018
0	0.05	0.05	0.3	0.3	First	0.3304	0.3446	0.3354	0.3446
					Last	0.3346	0.3404	0.3288	0.3538
0.05	0.2	0.3	0.4	0.5	First	0.4766	0.4962	0.4888	0.4962
					Last	0.4814	0.4904	0.4886	0.5072
0	0	0	0.25	0.5	First	0.5482	0.5812	0.5602	0.5812
					Last	0.5668	0.5752	0.5636	0.5954
0	0	0	0.35	0.35	First	0.4450	0.4676	0.4436	0.4676
					Last	0.4534	0.4674	0.4496	0.4788
0	0	0.25	0.25	0.5	First	0.5500	0.5800	0.5692	0.5800
					Last	0.5654	0.5824	0.5708	0.5954
0	0.125	0.25	0.25	0.25	First	0.2232	0.2378	0.2320	0.2378
					Last	0.2306	0.2334	0.2296	0.2416
0	0.125	0.125	0.125	0.25	First	0.1722	0.1818	0.1844	0.1818
					Last	0.1786	0.1770	0.1806	0.1889
0	0.125	0.125	0.125	0.125	First	0.0934	0.0954	0.0960	0.0954
					Last	0.0974	0.0976	0.0950	0.0966
0.125	0.125	0.125	0.25	0.25	First	0.1330	0.1382	0.1338	0.1382
					Last	0.1330	0.1318	0.1316	0.1404
0	0	0	0.1	0.3	First	0.2700	0.2828	0.2764	0.2828
					Last	0.2734	0.2806	0.2816	0.2894
0	0	0	0.2	0.7	First	0.7146	0.7526	0.7476	0.7526
					Last	0.7374	0.7476	0.7516	0.7632
0	0.1	0.1	0.6	0.6	First	0.7814	0.8048	0.7876	0.8048
					Last	0.7958	0.8124	0.7886	0.8250
0	0.1	0.3	0.4	0.4	First	0.4770	0.5004	0.4814	0.5004
					Last	0.4862	0.5034	0.4894	0.5138
0	0.05	0.2	0.4	0.4	First	0.4922	0.5238	0.5072	0.5238
					Last	0.5118	0.5242	0.5092	0.5364

Table B.122. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0524	0.0524	0.0504	0.0524
					Last	0.0556	0.0530	0.0526	0.0526
0.05	0.15	0.25	0.35	0.45	First	0.7212	0.7430	0.7264	0.7430
					Last	0.7414	0.7442	0.7298	0.7590
0	0.025	0.075	0.175	0.375	First	0.6500	0.6674	0.6512	0.6674
					Last	0.6680	0.6716	0.6584	0.6818
0	0	0	0	0.5	First	0.6544	0.6796	0.6854	0.6796
					Last	0.6624	0.6816	0.6950	0.6952
0	0	0	0.125	0.25	First	0.4254	0.4444	0.4324	0.4444
					Last	0.4374	0.4454	0.4372	0.4608
0	0	0.125	0.25	0.25	First	0.5386	0.5566	0.5286	0.5566
					Last	0.5520	0.5648	0.5382	0.5768
0	0.05	0.05	0.3	0.3	First	0.6190	0.6378	0.6108	0.6378
					Last	0.6336	0.6438	0.6204	0.6580
0.05	0.2	0.3	0.4	0.5	First	0.7972	0.8038	0.7866	0.8038
					Last	0.8100	0.8148	0.7970	0.8228
0	0	0	0.25	0.5	First	0.8596	0.8724	0.8518	0.8724
					Last	0.8726	0.8732	0.8568	0.8850
0	0	0	0.35	0.35	First	0.7382	0.7642	0.7358	0.7642
					Last	0.7522	0.7620	0.7378	0.7762
0	0	0.25	0.25	0.5	First	0.8674	0.8828	0.8656	0.8828
					Last	0.8770	0.8814	0.8678	0.8938
0	0.125	0.25	0.25	0.25	First	0.4246	0.4466	0.4312	0.4466
					Last	0.4372	0.4412	0.4314	0.4572
0	0.125	0.125	0.125	0.25	First	0.3196	0.3282	0.3308	0.3282
					Last	0.3290	0.3326	0.3408	0.3486
0	0.125	0.125	0.125	0.125	First	0.1528	0.1538	0.1504	0.1538
					Last	0.1544	0.1532	0.1546	0.1548
0.125	0.125	0.125	0.25	0.25	First	0.2230	0.2280	0.2146	0.2280
					Last	0.2218	0.2232	0.2158	0.2328
0	0	0	0.1	0.3	First	0.4768	0.5008	0.4952	0.5008
					Last	0.4970	0.5094	0.5032	0.5240
0	0	0	0.2	0.7	First	0.9468	0.9548	0.9490	0.9548
					Last	0.9562	0.9616	0.9564	0.9660
0	0.1	0.1	0.6	0.6	First	0.9704	0.9762	0.9676	0.9762
					Last	0.9744	0.9788	0.9744	0.9808
0	0.1	0.3	0.4	0.4	First	0.7756	0.7976	0.7706	0.7976
					Last	0.7892	0.7982	0.7780	0.8106
0	0.05	0.2	0.4	0.4	First	0.8156	0.8326	0.8042	0.8326
					Last	0.8222	0.8294	0.8034	0.8408

Table B.123. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0518	0.0538	0.0538	0.0538
					Last	0.0532	0.0494	0.0500	0.0536
0.05	0.15	0.25	0.35	0.45	First	0.3264	0.3418	0.3334	0.3418
					Last	0.3380	0.3392	0.3324	0.3494
0	0.025	0.075	0.175	0.375	First	0.2902	0.3040	0.2966	0.3040
					Last	0.2992	0.3024	0.2946	0.3104
0	0	0	0	0.5	First	0.2920	0.3100	0.3182	0.3100
					Last	0.3024	0.3110	0.3188	0.3208
0	0	0	0.125	0.25	First	0.1762	0.1762	0.1738	0.1762
					Last	0.1828	0.1822	0.1814	0.1850
0	0	0.125	0.25	0.25	First	0.2238	0.2356	0.2280	0.2356
					Last	0.2286	0.2306	0.2244	0.2390
0	0.05	0.05	0.3	0.3	First	0.2570	0.2676	0.2562	0.2676
					Last	0.2578	0.2600	0.2550	0.2722
0.05	0.2	0.3	0.4	0.5	First	0.3594	0.3798	0.3792	0.3798
					Last	0.3696	0.3828	0.3816	0.3926
0	0	0	0.25	0.5	First	0.4144	0.4352	0.4238	0.4352
					Last	0.4236	0.4274	0.4234	0.4428
0	0	0	0.35	0.35	First	0.3370	0.3572	0.3330	0.3572
					Last	0.3462	0.3492	0.3378	0.3662
0	0	0.25	0.25	0.5	First	0.4116	0.4430	0.4310	0.4430
					Last	0.4342	0.4408	0.4376	0.4526
0	0.125	0.25	0.25	0.25	First	0.1736	0.1856	0.1880	0.1856
					Last	0.1782	0.1802	0.1802	0.1892
0	0.125	0.125	0.125	0.25	First	0.1456	0.1522	0.1502	0.1522
					Last	0.1496	0.1506	0.1534	0.1550
0	0.125	0.125	0.125	0.125	First	0.0902	0.0930	0.0946	0.0930
					Last	0.0896	0.0884	0.0902	0.0906
0.125	0.125	0.125	0.25	0.25	First	0.1084	0.1132	0.1118	0.1132
					Last	0.1074	0.1056	0.1026	0.1134
0	0	0	0.1	0.3	First	0.2058	0.2128	0.2094	0.2128
					Last	0.2092	0.2078	0.2080	0.2190
0	0	0	0.2	0.7	First	0.5658	0.5898	0.5884	0.5898
					Last	0.5812	0.5966	0.5954	0.6088
0	0.1	0.1	0.6	0.6	First	0.6258	0.6572	0.6316	0.6572
					Last	0.6400	0.6608	0.6416	0.6696
0	0.1	0.3	0.4	0.4	First	0.3642	0.3880	0.3638	0.3880
					Last	0.3726	0.3780	0.3648	0.3894
0	0.05	0.2	0.4	0.4	First	0.3722	0.3946	0.3864	0.3946
					Last	0.3786	0.3922	0.3854	0.4060

Table B.124. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0512	0.0508	0.0526	0.0508
					Last	0.0506	0.0536	0.0530	0.0508
0.05	0.15	0.25	0.35	0.45	First	0.4678	0.4964	0.4804	0.4964
					Last	0.4574	0.4974	0.4768	0.4988
0	0.025	0.075	0.175	0.375	First	0.3998	0.4234	0.4196	0.4234
					Last	0.3914	0.4276	0.4130	0.4298
0	0	0	0	0.5	First	0.4536	0.4820	0.4930	0.4820
					Last	0.4478	0.4856	0.4816	0.4918
0	0	0	0.125	0.25	First	0.2472	0.2598	0.2574	0.2598
					Last	0.2436	0.2600	0.2530	0.2694
0	0	0.125	0.25	0.25	First	0.3052	0.3296	0.3152	0.3296
					Last	0.3006	0.3290	0.3100	0.3372
0	0.05	0.05	0.3	0.3	First	0.3654	0.3884	0.3688	0.3884
					Last	0.3526	0.3812	0.3572	0.3964
0.05	0.2	0.3	0.4	0.5	First	0.5466	0.5782	0.5660	0.5782
					Last	0.5394	0.5704	0.5536	0.5790
0	0	0	0.25	0.5	First	0.6222	0.6536	0.6388	0.6536
					Last	0.6122	0.6494	0.6300	0.6566
0	0	0	0.35	0.35	First	0.4842	0.5170	0.4968	0.5170
					Last	0.4788	0.5118	0.4884	0.5250
0	0	0.25	0.25	0.5	First	0.6016	0.6380	0.6240	0.6380
					Last	0.5974	0.6406	0.6188	0.6468
0	0.125	0.25	0.25	0.25	First	0.2480	0.2604	0.2550	0.2604
					Last	0.2464	0.2648	0.2498	0.2730
0	0.125	0.125	0.125	0.25	First	0.1996	0.2098	0.2122	0.2098
					Last	0.1962	0.2164	0.2126	0.2184
0	0.125	0.125	0.125	0.125	First	0.0996	0.1072	0.1072	0.1072
					Last	0.0986	0.1070	0.1030	0.1170
0.125	0.125	0.125	0.25	0.25	First	0.1358	0.1534	0.1486	0.1534
					Last	0.1406	0.1546	0.1516	0.1634
0	0	0	0.1	0.3	First	0.2860	0.3024	0.2994	0.3024
					Last	0.2762	0.3008	0.2922	0.3098
0	0	0	0.2	0.7	First	0.7898	0.8214	0.8162	0.8214
					Last	0.7764	0.8208	0.8114	0.8336
0	0.1	0.1	0.6	0.6	First	0.8426	0.8688	0.8490	0.8688
					Last	0.8346	0.8650	0.8474	0.8716
0	0.1	0.3	0.4	0.4	First	0.5092	0.5376	0.5210	0.5376
					Last	0.5028	0.5348	0.5112	0.5378
0	0.05	0.2	0.4	0.4	First	0.5642	0.5928	0.5688	0.5928
					Last	0.5534	0.5936	0.5606	0.5962

Table B.125. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0430	0.0414	0.0458	0.0414
					Last	0.0438	0.0490	0.0480	0.0436
0.05	0.15	0.25	0.35	0.45	First	0.7948	0.8100	0.7884	0.8100
					Last	0.7934	0.8150	0.7910	0.8154
0	0.025	0.075	0.175	0.375	First	0.7194	0.7430	0.7302	0.7430
					Last	0.7172	0.7416	0.7228	0.7476
0	0	0	0	0.5	First	0.7084	0.7452	0.7532	0.7452
					Last	0.7090	0.7472	0.7518	0.7590
0	0	0	0.125	0.25	First	0.4788	0.5004	0.4844	0.5004
					Last	0.4664	0.5008	0.4804	0.5060
0	0	0.125	0.25	0.25	First	0.5882	0.6098	0.5832	0.6098
					Last	0.5860	0.6076	0.5762	0.6162
0	0.05	0.05	0.3	0.3	First	0.6550	0.6836	0.6644	0.6836
					Last	0.6540	0.6904	0.6568	0.6976
0.05	0.2	0.3	0.4	0.5	First	0.8460	0.8670	0.8462	0.8670
					Last	0.8440	0.8640	0.8484	0.8682
0	0	0	0.25	0.5	First	0.8990	0.9116	0.8974	0.9116
					Last	0.8952	0.9120	0.8924	0.9154
0	0	0	0.35	0.35	First	0.8006	0.8260	0.7998	0.8260
					Last	0.7962	0.8224	0.7960	0.8316
0	0	0.25	0.25	0.5	First	0.9056	0.9180	0.9016	0.9180
					Last	0.9042	0.9130	0.8972	0.9224
0	0.125	0.25	0.25	0.25	First	0.4782	0.4968	0.4808	0.4968
					Last	0.4668	0.4984	0.4748	0.5074
0	0.125	0.125	0.125	0.25	First	0.3554	0.3762	0.3722	0.3762
					Last	0.3538	0.3796	0.3732	0.3836
0	0.125	0.125	0.125	0.125	First	0.1686	0.1768	0.1730	0.1768
					Last	0.1644	0.1770	0.1696	0.1870
0.125	0.125	0.125	0.25	0.25	First	0.2502	0.2634	0.2536	0.2634
					Last	0.2446	0.2656	0.2502	0.2736
0	0	0	0.1	0.3	First	0.5188	0.5556	0.5434	0.5556
					Last	0.5116	0.5462	0.5274	0.5542
0	0	0	0.2	0.7	First	0.9708	0.9754	0.9704	0.9754
					Last	0.9700	0.9746	0.9680	0.9758
0	0.1	0.1	0.6	0.6	First	0.9856	0.9898	0.9840	0.9898
					Last	0.9844	0.9896	0.9842	0.9908
0	0.1	0.3	0.4	0.4	First	0.8420	0.8634	0.8364	0.8634
					Last	0.8356	0.8574	0.8304	0.8626
0	0.05	0.2	0.4	0.4	First	0.8672	0.8858	0.8650	0.8858
					Last	0.8600	0.8860	0.8548	0.8900

Table B.126. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0508	0.0542	0.0542	0.0542
					Last	0.0468	0.0568	0.0540	0.0540
0.05	0.15	0.25	0.35	0.45	First	0.3454	0.3650	0.3550	0.3650
					Last	0.3456	0.3712	0.3520	0.3792
0	0.025	0.075	0.175	0.375	First	0.3134	0.3276	0.3204	0.3276
					Last	0.3056	0.3316	0.3180	0.3418
0	0	0	0	0.5	First	0.3390	0.3672	0.3724	0.3672
					Last	0.3384	0.3744	0.3728	0.3792
0	0	0	0.125	0.25	First	0.1892	0.2036	0.2010	0.2036
					Last	0.1874	0.2064	0.1986	0.2118
0	0	0.125	0.25	0.25	First	0.2454	0.2550	0.2472	0.2550
					Last	0.2376	0.2560	0.2418	0.2587
0	0.05	0.05	0.3	0.3	First	0.2890	0.3036	0.2928	0.3036
					Last	0.2794	0.3092	0.2964	0.3162
0.05	0.2	0.3	0.4	0.5	First	0.3960	0.4238	0.4194	0.4238
					Last	0.3956	0.4298	0.4124	0.4386
0	0	0	0.25	0.5	First	0.4654	0.4898	0.4776	0.4898
					Last	0.4530	0.4804	0.4666	0.4924
0	0	0	0.35	0.35	First	0.3626	0.3862	0.3698	0.3862
					Last	0.3658	0.3934	0.3670	0.4008
0	0	0.25	0.25	0.5	First	0.4826	0.5096	0.4960	0.5096
					Last	0.4714	0.5060	0.4864	0.5112
0	0.125	0.25	0.25	0.25	First	0.1808	0.1914	0.1874	0.1914
					Last	0.1776	0.1960	0.1890	0.2020
0	0.125	0.125	0.125	0.25	First	0.1508	0.1636	0.1642	0.1636
					Last	0.1416	0.1606	0.1634	0.1694
0	0.125	0.125	0.125	0.125	First	0.0896	0.0940	0.0924	0.0940
					Last	0.0888	0.0956	0.0908	0.0998
0.125	0.125	0.125	0.25	0.25	First	0.1222	0.1290	0.1276	0.1290
					Last	0.1218	0.1306	0.1216	0.1379
0	0	0	0.1	0.3	First	0.2224	0.2318	0.2274	0.2318
					Last	0.2186	0.2350	0.2272	0.2410
0	0	0	0.2	0.7	First	0.6326	0.6670	0.6650	0.6670
					Last	0.6282	0.6666	0.6560	0.6694
0	0.1	0.1	0.6	0.6	First	0.6776	0.7142	0.6904	0.7142
					Last	0.6688	0.7082	0.6806	0.7140
0	0.1	0.3	0.4	0.4	First	0.3906	0.4094	0.3920	0.4094
					Last	0.3814	0.4122	0.3900	0.4188
0	0.05	0.2	0.4	0.4	First	0.4276	0.4534	0.4324	0.4534
					Last	0.4150	0.4492	0.4236	0.4516

Table B.127. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0516	0.0528	0.0506	0.0528
					Last	0.0484	0.0508	0.0484	0.0498
0.05	0.15	0.25	0.35	0.45	First	0.4296	0.4484	0.4338	0.4484
					Last	0.4650	0.4934	0.4858	0.4976
0	0.025	0.075	0.175	0.375	First	0.3742	0.3890	0.3820	0.3890
					Last	0.4116	0.4440	0.4368	0.4452
0	0	0	0	0.5	First	0.4270	0.4474	0.4582	0.4474
					Last	0.4614	0.4948	0.5090	0.5096
0	0	0	0.125	0.25	First	0.2314	0.2460	0.2450	0.2460
					Last	0.2452	0.2686	0.2640	0.2708
0	0	0.125	0.25	0.25	First	0.2788	0.2986	0.2892	0.2986
					Last	0.3142	0.3454	0.3282	0.3540
0	0.05	0.05	0.3	0.3	First	0.3446	0.3640	0.3536	0.3640
					Last	0.3732	0.4054	0.3940	0.4098
0.05	0.2	0.3	0.4	0.5	First	0.4758	0.5034	0.4944	0.5034
					Last	0.5286	0.5604	0.5500	0.5644
0	0	0	0.25	0.5	First	0.5706	0.5986	0.5870	0.5986
					Last	0.6190	0.6540	0.6492	0.6658
0	0	0	0.35	0.35	First	0.4522	0.4728	0.4466	0.4728
					Last	0.4920	0.5286	0.5102	0.5330
0	0	0.25	0.25	0.5	First	0.5606	0.5890	0.5740	0.5890
					Last	0.6190	0.6530	0.6462	0.6582
0	0.125	0.25	0.25	0.25	First	0.2204	0.2302	0.2256	0.2302
					Last	0.2450	0.2650	0.2640	0.2664
0	0.125	0.125	0.125	0.25	First	0.1768	0.1864	0.1910	0.1864
					Last	0.1902	0.2086	0.2124	0.2166
0	0.125	0.125	0.125	0.125	First	0.0978	0.0958	0.0964	0.0958
					Last	0.1000	0.1066	0.1086	0.1048
0.125	0.125	0.125	0.25	0.25	First	0.1268	0.1282	0.1222	0.1282
					Last	0.1328	0.1454	0.1390	0.1550
0	0	0	0.1	0.3	First	0.2668	0.2758	0.2698	0.2758
					Last	0.2848	0.3084	0.3038	0.3110
0	0	0	0.2	0.7	First	0.7430	0.7646	0.7626	0.7646
					Last	0.7962	0.8304	0.8290	0.8312
0	0.1	0.1	0.6	0.6	First	0.7922	0.8214	0.7986	0.8214
					Last	0.8492	0.8780	0.8590	0.8796
0	0.1	0.3	0.4	0.4	First	0.4858	0.5068	0.4878	0.5068
					Last	0.5312	0.5722	0.5528	0.5814
0	0.05	0.2	0.4	0.4	First	0.5068	0.5356	0.5140	0.5356
					Last	0.5574	0.5928	0.5774	0.5978

Table B.128. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0476	0.0466	0.0460	0.0466
					Last	0.0438	0.0482	0.0480	0.0480
0.05	0.15	0.25	0.35	0.45	First	0.7530	0.7662	0.7420	0.7662
					Last	0.8034	0.8204	0.8022	0.8252
0	0.025	0.075	0.175	0.375	First	0.6662	0.6764	0.6630	0.6764
					Last	0.7242	0.7392	0.7262	0.7438
0	0	0	0	0.5	First	0.6780	0.7010	0.7042	0.7010
					Last	0.7350	0.7630	0.7728	0.7678
0	0	0	0.125	0.25	First	0.4338	0.4460	0.4374	0.4460
					Last	0.4772	0.5112	0.5032	0.5162
0	0	0.125	0.25	0.25	First	0.5438	0.5686	0.5440	0.5686
					Last	0.6002	0.6302	0.6050	0.6352
0	0.05	0.05	0.3	0.3	First	0.6082	0.6364	0.6166	0.6364
					Last	0.6726	0.6984	0.6774	0.7048
0.05	0.2	0.3	0.4	0.5	First	0.8090	0.8184	0.8044	0.8184
					Last	0.8744	0.8832	0.8688	0.8848
0	0	0	0.25	0.5	First	0.8594	0.8764	0.8598	0.8764
					Last	0.9080	0.9206	0.9112	0.9244
0	0	0	0.35	0.35	First	0.7624	0.7926	0.7686	0.7926
					Last	0.8218	0.8448	0.8272	0.8506
0	0	0.25	0.25	0.5	First	0.8734	0.8816	0.8656	0.8816
					Last	0.9202	0.9272	0.9166	0.9308
0	0.125	0.25	0.25	0.25	First	0.4310	0.4464	0.4362	0.4464
					Last	0.4692	0.4994	0.4884	0.5060
0	0.125	0.125	0.125	0.25	First	0.3164	0.3348	0.3400	0.3348
					Last	0.3480	0.3750	0.3822	0.3904
0	0.125	0.125	0.125	0.125	First	0.1466	0.1516	0.1560	0.1516
					Last	0.1562	0.1672	0.1674	0.1762
0.125	0.125	0.125	0.25	0.25	First	0.2274	0.2456	0.2392	0.2456
					Last	0.2464	0.2718	0.2664	0.2752
0	0	0	0.1	0.3	First	0.4864	0.5044	0.4980	0.5044
					Last	0.5330	0.5614	0.5514	0.5658
0	0	0	0.2	0.7	First	0.9548	0.9600	0.9550	0.9600
					Last	0.9762	0.9834	0.9786	0.9836
0	0.1	0.1	0.6	0.6	First	0.9720	0.9786	0.9730	0.9786
					Last	0.9864	0.9900	0.9876	0.9904
0	0.1	0.3	0.4	0.4	First	0.8040	0.8192	0.8000	0.8192
					Last	0.8536	0.8708	0.8506	0.8762
0	0.05	0.2	0.4	0.4	First	0.8250	0.8412	0.8118	0.8412
					Last	0.8794	0.8932	0.8744	0.8970

Table B.129. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0542	0.0502	0.0476	0.0502
					Last	0.0450	0.0474	0.0462	0.0488
0.05	0.15	0.25	0.35	0.45	First	0.3294	0.3494	0.3352	0.3494
					Last	0.3410	0.3704	0.3652	0.3776
0	0.025	0.075	0.175	0.375	First	0.2876	0.3040	0.2976	0.3040
					Last	0.3042	0.3292	0.3220	0.3358
0	0	0	0	0.5	First	0.3212	0.3300	0.3398	0.3300
					Last	0.3484	0.3748	0.3832	0.3770
0	0	0	0.125	0.25	First	0.1886	0.2014	0.1960	0.2014
					Last	0.1950	0.2110	0.2102	0.2144
0	0	0.125	0.25	0.25	First	0.2256	0.2434	0.2308	0.2434
					Last	0.2384	0.2620	0.2540	0.2674
0	0.05	0.05	0.3	0.3	First	0.2624	0.2748	0.2656	0.2748
					Last	0.2794	0.2970	0.2924	0.3050
0.05	0.2	0.3	0.4	0.5	First	0.3612	0.3702	0.3634	0.3702
					Last	0.3966	0.4202	0.4094	0.4220
0	0	0	0.25	0.5	First	0.4254	0.4566	0.4480	0.4566
					Last	0.4744	0.5042	0.5002	0.5100
0	0	0	0.35	0.35	First	0.3422	0.3594	0.3468	0.3594
					Last	0.3688	0.3992	0.3854	0.4066
0	0	0.25	0.25	0.5	First	0.4380	0.4580	0.4518	0.4580
					Last	0.4700	0.4960	0.4898	0.5048
0	0.125	0.25	0.25	0.25	First	0.1766	0.1826	0.1810	0.1826
					Last	0.1840	0.2038	0.2010	0.2126
0	0.125	0.125	0.125	0.25	First	0.1458	0.1488	0.1470	0.1488
					Last	0.1544	0.1646	0.1676	0.1768
0	0.125	0.125	0.125	0.125	First	0.0884	0.0906	0.0912	0.0906
					Last	0.0882	0.0942	0.0958	0.0968
0.125	0.125	0.125	0.25	0.25	First	0.1170	0.1190	0.1196	0.1190
					Last	0.1218	0.1296	0.1260	0.1302
0	0	0	0.1	0.3	First	0.2158	0.2256	0.2280	0.2256
					Last	0.2258	0.2444	0.2404	0.2484
0	0	0	0.2	0.7	First	0.5916	0.6166	0.6156	0.6166
					Last	0.6502	0.6854	0.6842	0.6862
0	0.1	0.1	0.6	0.6	First	0.6286	0.6614	0.6532	0.6614
					Last	0.6918	0.7256	0.7088	0.7308
0	0.1	0.3	0.4	0.4	First	0.3654	0.3826	0.3672	0.3826
					Last	0.3958	0.4316	0.4176	0.4320
0	0.05	0.2	0.4	0.4	First	0.3972	0.4142	0.3948	0.4142
					Last	0.4378	0.4676	0.4432	0.4716

Table B.130. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0498	0.05	0.0482	0.05
					Last	0.0512	0.0516	0.05	0.0502
0.05	0.15	0.25	0.35	0.45	First	0.4962	0.5166	0.5026	0.5166
					Last	0.5204	0.5412	0.5318	0.5466
0	0.025	0.075	0.175	0.375	First	0.4388	0.4626	0.449	0.4626
					Last	0.4678	0.4756	0.466	0.4828
0	0	0	0	0.5	First	0.493	0.5272	0.5316	0.5272
					Last	0.5266	0.544	0.5522	0.5496
0	0	0	0.125	0.25	First	0.2632	0.2782	0.2684	0.2782
					Last	0.2764	0.2874	0.276	0.2888
0	0	0.125	0.25	0.25	First	0.3438	0.353	0.333	0.353
					Last	0.367	0.3716	0.352	0.3738
0	0.05	0.05	0.3	0.3	First	0.384	0.4094	0.3982	0.4094
					Last	0.4114	0.4258	0.4038	0.4284
0.05	0.2	0.3	0.4	0.5	First	0.552	0.5786	0.5712	0.5786
					Last	0.594	0.6122	0.5988	0.6712
0	0	0	0.25	0.5	First	0.637	0.6654	0.6572	0.6654
					Last	0.6752	0.702	0.6878	0.7056
0	0	0	0.35	0.35	First	0.5276	0.5616	0.5388	0.5616
					Last	0.566	0.5856	0.5566	0.589
0	0	0.25	0.25	0.5	First	0.6486	0.6818	0.6684	0.6818
					Last	0.6936	0.7162	0.6966	0.7208
0	0.125	0.25	0.25	0.25	First	0.2662	0.2816	0.273	0.2816
					Last	0.292	0.2986	0.2870	0.3074
0	0.125	0.125	0.125	0.25	First	0.213	0.2192	0.2168	0.2192
					Last	0.2206	0.2262	0.2272	0.2274
0	0.125	0.125	0.125	0.125	First	0.1016	0.107	0.1074	0.107
					Last	0.1128	0.1162	0.116	0.1218
0.125	0.125	0.125	0.25	0.25	First	0.1454	0.1572	0.1476	0.1572
					Last	0.1516	0.1536	0.1462	0.1556
0	0	0	0.1	0.3	First	0.303	0.3214	0.3192	0.3214
					Last	0.3226	0.3362	0.3312	0.3382
0	0	0	0.2	0.7	First	0.8346	0.8566	0.8516	0.8566
					Last	0.8584	0.873	0.8702	0.8814
0	0.1	0.1	0.6	0.6	First	0.8594	0.8802	0.8634	0.8802
					Last	0.8912	0.906	0.8896	0.9182
0	0.1	0.3	0.4	0.4	First	0.5622	0.5856	0.562	0.5856
					Last	0.5938	0.6118	0.5868	0.6192
0	0.05	0.2	0.4	0.4	First	0.5814	0.6154	0.5928	0.6154
					Last	0.6314	0.6536	0.6204	0.6538

Table B.131. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0500	0.0506	0.0510	0.0506
					Last	0.0514	0.0524	0.0482	0.0522
0.05	0.15	0.25	0.35	0.45	First	0.8222	0.8428	0.8244	0.8428
					Last	0.8610	0.8678	0.8498	0.8724
0	0.025	0.075	0.175	0.375	First	0.7474	0.7666	0.7480	0.7666
					Last	0.7900	0.7954	0.7756	0.7966
0	0	0	0	0.5	First	0.7558	0.7922	0.8024	0.7922
					Last	0.7978	0.8144	0.8218	0.8302
0	0	0	0.125	0.25	First	0.5082	0.5350	0.5248	0.5350
					Last	0.5458	0.5578	0.5406	0.5636
0	0	0.125	0.25	0.25	First	0.6166	0.6470	0.6180	0.6470
					Last	0.6632	0.6828	0.6508	0.6856
0	0.05	0.05	0.3	0.3	First	0.7062	0.7296	0.7096	0.7296
					Last	0.7410	0.7560	0.7332	0.7616
0.05	0.2	0.3	0.4	0.5	First	0.8748	0.8846	0.8686	0.8846
					Last	0.8994	0.8998	0.8834	0.9044
0	0	0	0.25	0.5	First	0.9194	0.9312	0.9180	0.9312
					Last	0.9502	0.9526	0.9402	0.9534
0	0	0	0.35	0.35	First	0.8362	0.8588	0.8384	0.8588
					Last	0.8666	0.8840	0.8598	0.8878
0	0	0.25	0.25	0.5	First	0.9366	0.9462	0.9306	0.9462
					Last	0.9552	0.9572	0.9482	0.9598
0	0.125	0.25	0.25	0.25	First	0.5026	0.5180	0.5072	0.5180
					Last	0.5328	0.5484	0.5366	0.5558
0	0.125	0.125	0.125	0.25	First	0.3860	0.4020	0.3972	0.4020
					Last	0.4204	0.4282	0.4230	0.4334
0	0.125	0.125	0.125	0.125	First	0.1796	0.1854	0.1838	0.1854
					Last	0.1884	0.1920	0.1912	0.1988
0.125	0.125	0.125	0.25	0.25	First	0.2698	0.2824	0.2714	0.2824
					Last	0.2866	0.2948	0.2794	0.2956
0	0	0	0.1	0.3	First	0.5490	0.5810	0.5704	0.5810
					Last	0.5932	0.6068	0.5990	0.6150
0	0	0	0.2	0.7	First	0.9832	0.9842	0.9820	0.9842
					Last	0.9890	0.9896	0.9876	0.9897
0	0.1	0.1	0.6	0.6	First	0.9906	0.9918	0.9882	0.9918
					Last	0.9958	0.9964	0.9926	0.9972
0	0.1	0.3	0.4	0.4	First	0.8614	0.8754	0.8564	0.8754
					Last	0.8852	0.8924	0.8742	0.8968
0	0.05	0.2	0.4	0.4	First	0.8966	0.9110	0.8858	0.9110
					Last	0.9190	0.9268	0.9064	0.9312

Table B.132. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0500	0.0482	0.0478	0.0482
					Last	0.0476	0.0510	0.0472	0.0470
0.05	0.15	0.25	0.35	0.45	First	0.3650	0.3812	0.3728	0.3812
					Last	0.3898	0.4034	0.3910	0.4070
0	0.025	0.075	0.175	0.375	First	0.3166	0.3328	0.3328	0.3328
					Last	0.3488	0.3548	0.3486	0.3572
0	0	0	0	0.5	First	0.3652	0.3930	0.3914	0.3930
					Last	0.3980	0.4066	0.4074	0.4110
0	0	0	0.125	0.25	First	0.1996	0.2042	0.1976	0.2042
					Last	0.2160	0.2210	0.2150	0.2226
0	0	0.125	0.25	0.25	First	0.2528	0.2606	0.2530	0.2606
					Last	0.2674	0.2776	0.2650	0.2812
0	0.05	0.05	0.3	0.3	First	0.3000	0.3162	0.2992	0.3162
					Last	0.3198	0.3252	0.3094	0.3304
0.05	0.2	0.3	0.4	0.5	First	0.4292	0.4510	0.4424	0.4510
					Last	0.4586	0.4754	0.4636	0.4762
0	0	0	0.25	0.5	First	0.4960	0.5220	0.5070	0.5220
					Last	0.5266	0.5386	0.5262	0.5454
0	0	0	0.35	0.35	First	0.4064	0.4254	0.4042	0.4254
					Last	0.4256	0.4402	0.4182	0.4454
0	0	0.25	0.25	0.5	First	0.4988	0.5360	0.5230	0.5360
					Last	0.5396	0.5546	0.5404	0.5634
0	0.125	0.25	0.25	0.25	First	0.2098	0.2230	0.2190	0.2230
					Last	0.2310	0.2376	0.2322	0.2394
0	0.125	0.125	0.125	0.25	First	0.1650	0.1710	0.1722	0.1710
					Last	0.1750	0.1792	0.1788	0.1798
0	0.125	0.125	0.125	0.125	First	0.0970	0.1022	0.1050	0.1022
					Last	0.0996	0.1006	0.1002	0.1092
0.125	0.125	0.125	0.25	0.25	First	0.1284	0.1344	0.1318	0.1344
					Last	0.1384	0.1418	0.1332	0.1492
0	0	0	0.1	0.3	First	0.2420	0.2540	0.2518	0.2540
					Last	0.2634	0.2740	0.2710	0.2786
0	0	0	0.2	0.7	First	0.6636	0.7008	0.6932	0.7008
					Last	0.7006	0.7216	0.7228	0.7304
0	0.1	0.1	0.6	0.6	First	0.7222	0.7538	0.7342	0.7538
					Last	0.7506	0.7722	0.7512	0.7788
0	0.1	0.3	0.4	0.4	First	0.4112	0.4392	0.4228	0.4392
					Last	0.4456	0.4658	0.4442	0.4700
0	0.05	0.2	0.4	0.4	First	0.4436	0.4654	0.4462	0.4654
					Last	0.4774	0.4940	0.4716	0.4994

Table B.133. Normal, 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0532	0.0528	0.0532
					Last	0.0520	0.0508	0.0508	0.0522
0.05	0.15	0.25	0.35	0.45	First	0.5438	0.5748	0.5546	0.5748
					Last	0.5550	0.5732	0.5702	0.5822
0	0.025	0.075	0.175	0.375	First	0.4738	0.4962	0.4916	0.4962
					Last	0.4768	0.5068	0.5028	0.5168
0	0	0	0	0.5	First	0.5224	0.5488	0.5564	0.5488
					Last	0.5214	0.5452	0.5620	0.5650
0	0	0	0.125	0.25	First	0.3010	0.3210	0.3154	0.3210
					Last	0.3038	0.3226	0.3202	0.3312
0	0	0.125	0.25	0.25	First	0.3740	0.3946	0.3732	0.3946
					Last	0.3766	0.3946	0.3772	0.4070
0	0.05	0.05	0.3	0.3	First	0.4308	0.4592	0.4426	0.4592
					Last	0.4340	0.4590	0.4482	0.4700
0.05	0.2	0.3	0.4	0.5	First	0.5960	0.6322	0.6238	0.6322
					Last	0.6082	0.6360	0.6342	0.6498
0	0	0	0.25	0.5	First	0.7064	0.7398	0.7294	0.7398
					Last	0.7132	0.7370	0.7402	0.7558
0	0	0	0.35	0.35	First	0.5838	0.6068	0.5784	0.6068
					Last	0.5932	0.6120	0.5896	0.6210
0	0	0.25	0.25	0.5	First	0.6910	0.7250	0.7110	0.7250
					Last	0.7024	0.7278	0.7228	0.7408
0	0.125	0.25	0.25	0.25	First	0.2882	0.3092	0.2982	0.3092
					Last	0.2948	0.3042	0.3060	0.3124
0	0.125	0.125	0.125	0.25	First	0.2176	0.2300	0.2292	0.2300
					Last	0.2244	0.2320	0.2346	0.2348
0	0.125	0.125	0.125	0.125	First	0.1126	0.1168	0.1142	0.1168
					Last	0.1138	0.1170	0.1158	0.1202
0.125	0.125	0.125	0.25	0.25	First	0.1634	0.1690	0.1604	0.1690
					Last	0.1616	0.1670	0.1626	0.1700
0	0	0	0.1	0.3	First	0.3372	0.3624	0.3582	0.3624
					Last	0.3362	0.3562	0.3584	0.3672
0	0	0	0.2	0.7	First	0.8642	0.8900	0.8906	0.8900
					Last	0.8680	0.8890	0.8924	0.8972
0	0.1	0.1	0.6	0.6	First	0.9064	0.9270	0.9174	0.9270
					Last	0.9106	0.9252	0.9174	0.9340
0	0.1	0.3	0.4	0.4	First	0.6100	0.6414	0.6256	0.6414
					Last	0.6184	0.6468	0.6306	0.6564
0	0.05	0.2	0.4	0.4	First	0.6378	0.6696	0.6430	0.6696
					Last	0.6468	0.6744	0.6578	0.6842

Table B.134. Exponential, 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0492	0.0484	0.0476	0.0484
					Last	0.0476	0.0488	0.0518	0.0496
0.05	0.15	0.25	0.35	0.45	First	0.8742	0.8860	0.8682	0.8860
					Last	0.8822	0.8874	0.8772	0.8996
0	0.025	0.075	0.175	0.375	First	0.7978	0.8210	0.8102	0.8210
					Last	0.8080	0.8232	0.8130	0.8356
0	0	0	0	0.5	First	0.8158	0.8402	0.8484	0.8402
					Last	0.8244	0.8460	0.8572	0.8646
0	0	0	0.125	0.25	First	0.5644	0.5826	0.5688	0.5826
					Last	0.5656	0.5812	0.5690	0.5948
0	0	0.125	0.25	0.25	First	0.6896	0.7186	0.6886	0.7186
					Last	0.7028	0.7250	0.6992	0.7358
0	0.05	0.05	0.3	0.3	First	0.7630	0.7922	0.7650	0.7922
					Last	0.7722	0.7878	0.7692	0.8000
0.05	0.2	0.3	0.4	0.5	First	0.9228	0.9294	0.9174	0.9294
					Last	0.9240	0.9290	0.9194	0.9352
0	0	0	0.25	0.5	First	0.9532	0.9596	0.9516	0.9596
					Last	0.9610	0.9650	0.9588	0.9672
0	0	0	0.35	0.35	First	0.8704	0.8934	0.8716	0.8934
					Last	0.8808	0.9020	0.8870	0.9098
0	0	0.25	0.25	0.5	First	0.9564	0.9624	0.9498	0.9624
					Last	0.9592	0.9616	0.9540	0.9660
0	0.125	0.25	0.25	0.25	First	0.5508	0.5744	0.5550	0.5744
					Last	0.5506	0.5666	0.5588	0.5814
0	0.125	0.125	0.125	0.25	First	0.4310	0.4472	0.4480	0.4472
					Last	0.4328	0.4550	0.4632	0.4682
0	0.125	0.125	0.125	0.125	First	0.1926	0.1930	0.1926	0.1930
					Last	0.1878	0.1930	0.1952	0.1976
0.125	0.125	0.125	0.25	0.25	First	0.2824	0.2982	0.2832	0.2982
					Last	0.2824	0.2980	0.2920	0.3048
0	0	0	0.1	0.3	First	0.6320	0.6538	0.6446	0.6538
					Last	0.6346	0.6580	0.6552	0.6688
0	0	0	0.2	0.7	First	0.9916	0.9946	0.9928	0.9946
					Last	0.9936	0.9940	0.9936	0.9950
0	0.1	0.1	0.6	0.6	First	0.9970	0.9976	0.9960	0.9976
					Last	0.9972	0.9978	0.9970	0.9980
0	0.1	0.3	0.4	0.4	First	0.8996	0.9204	0.9006	0.9204
					Last	0.9074	0.9194	0.9052	0.9258
0	0.05	0.2	0.4	0.4	First	0.9250	0.9368	0.9192	0.9368
					Last	0.9300	0.9378	0.9254	0.9434

Table B.135. T with 3 d.f., 5 Treatments - 2 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0506	0.0460	0.0470	0.0460
					Last	0.0502	0.0476	0.0470	0.0478
0.05	0.15	0.25	0.35	0.45	First	0.4226	0.4478	0.4268	0.4478
					Last	0.4200	0.4440	0.4378	0.4606
0	0.025	0.075	0.175	0.375	First	0.3652	0.3814	0.3714	0.3814
					Last	0.3638	0.3754	0.3750	0.3870
0	0	0	0	0.5	First	0.4022	0.4208	0.4242	0.4208
					Last	0.4014	0.4170	0.4328	0.4366
0	0	0	0.125	0.25	First	0.2224	0.2412	0.2344	0.2412
					Last	0.2216	0.2344	0.2364	0.2432
0	0	0.125	0.25	0.25	First	0.2826	0.2968	0.2822	0.2968
					Last	0.2894	0.3036	0.2966	0.3122
0	0.05	0.05	0.3	0.3	First	0.3332	0.3518	0.3382	0.3518
					Last	0.3286	0.3432	0.3392	0.3578
0.05	0.2	0.3	0.4	0.5	First	0.4850	0.5030	0.4898	0.5030
					Last	0.4786	0.5056	0.5004	0.5214
0	0	0	0.25	0.5	First	0.5604	0.5818	0.5728	0.5818
					Last	0.5708	0.5942	0.5896	0.6054
0	0	0	0.35	0.35	First	0.4322	0.4590	0.4370	0.4590
					Last	0.4354	0.4588	0.4434	0.4696
0	0	0.25	0.25	0.5	First	0.5430	0.5656	0.5512	0.5656
					Last	0.5458	0.5706	0.5666	0.5808
0	0.125	0.25	0.25	0.25	First	0.2266	0.2390	0.2386	0.2390
					Last	0.2266	0.2410	0.2412	0.2480
0	0.125	0.125	0.125	0.25	First	0.1712	0.1814	0.1818	0.1814
					Last	0.1746	0.1840	0.1902	0.1964
0	0.125	0.125	0.125	0.125	First	0.1052	0.1084	0.1044	0.1084
					Last	0.0988	0.1014	0.1082	0.1166
0.125	0.125	0.125	0.25	0.25	First	0.1394	0.1476	0.1400	0.1476
					Last	0.1378	0.1422	0.1390	0.1568
0	0	0	0.1	0.3	First	0.2748	0.2810	0.2736	0.2810
					Last	0.2692	0.2804	0.2776	0.2852
0	0	0	0.2	0.7	First	0.7318	0.7576	0.7538	0.7576
					Last	0.7328	0.7592	0.7600	0.7744
0	0.1	0.1	0.6	0.6	First	0.7744	0.8010	0.7802	0.8010
					Last	0.7828	0.8012	0.7890	0.8166
0	0.1	0.3	0.4	0.4	First	0.4558	0.4824	0.4700	0.4824
					Last	0.4628	0.4838	0.4808	0.4986
0	0.05	0.2	0.4	0.4	First	0.4928	0.5144	0.4872	0.5144
					Last	0.4902	0.5132	0.5036	0.5234

Table B.136. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0550	0.0514	0.0452	0.0514
					Last	0.0530	0.0468	0.0454	0.0462
0.05	0.15	0.25	0.35	0.45	First	0.2200	0.2274	0.2174	0.2274
					Last	0.2554	0.2452	0.2364	0.2428
0	0.025	0.075	0.175	0.375	First	0.1932	0.1952	0.1966	0.1952
					Last	0.2274	0.2164	0.2132	0.2132
0	0	0	0	0.5	First	0.2186	0.2230	0.2274	0.2230
					Last	0.2524	0.2446	0.2458	0.2494
0	0	0	0.125	0.25	First	0.1350	0.1410	0.1400	0.1410
					Last	0.1594	0.1508	0.1446	0.1486
0	0	0.125	0.25	0.25	First	0.1634	0.1708	0.1658	0.1708
					Last	0.1894	0.1766	0.1736	0.1822
0	0.05	0.05	0.3	0.3	First	0.1928	0.1970	0.1904	0.1970
					Last	0.2166	0.2082	0.1964	0.2098
0.05	0.2	0.3	0.4	0.5	First	0.2450	0.2666	0.2614	0.2666
					Last	0.2900	0.2774	0.2696	0.2806
0	0	0	0.25	0.5	First	0.2940	0.3068	0.2980	0.3068
					Last	0.3387	0.3312	0.3234	0.3346
0	0	0	0.35	0.35	First	0.2438	0.2500	0.2404	0.2500
					Last	0.2788	0.2658	0.2552	0.2712
0	0	0.25	0.25	0.5	First	0.2972	0.3158	0.3120	0.3158
					Last	0.3440	0.3380	0.3340	0.3406
0	0.125	0.25	0.25	0.25	First	0.1468	0.1458	0.1408	0.1458
					Last	0.1558	0.1474	0.1424	0.1504
0	0.125	0.125	0.125	0.25	First	0.1160	0.1120	0.1150	0.1120
					Last	0.1292	0.1140	0.1144	0.1136
0	0.125	0.125	0.125	0.125	First	0.0838	0.0834	0.0818	0.0834
					Last	0.0922	0.0844	0.0840	0.0816
0.125	0.125	0.125	0.25	0.25	First	0.0990	0.0928	0.0920	0.0928
					Last	0.1072	0.1020	0.0996	0.0974
0	0	0	0.1	0.3	First	0.1648	0.1598	0.1544	0.1598
					Last	0.1758	0.1604	0.1568	0.1618
0	0	0	0.2	0.7	First	0.3802	0.3992	0.3956	0.3992
					Last	0.4420	0.4356	0.4332	0.4398
0	0.1	0.1	0.6	0.6	First	0.4316	0.4546	0.4326	0.4546
					Last	0.4982	0.4928	0.4752	0.4930
0	0.1	0.3	0.4	0.4	First	0.2392	0.2464	0.2400	0.2464
					Last	0.2776	0.2702	0.2576	0.2698
0	0.05	0.2	0.4	0.4	First	0.2528	0.2628	0.2534	0.2628
					Last	0.2970	0.2854	0.2702	0.2918

Table B.137. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0538	0.0538	0.0570	0.0538
					Last	0.0628	0.0566	0.0588	0.0560
0.05	0.15	0.25	0.35	0.45	First	0.4086	0.4218	0.4034	0.4218
					Last	0.4644	0.4482	0.4356	0.4514
0	0.025	0.075	0.175	0.375	First	0.3500	0.3590	0.3496	0.3590
					Last	0.3984	0.3880	0.3710	0.3906
0	0	0	0	0.5	First	0.3284	0.3562	0.3606	0.3562
					Last	0.3902	0.3796	0.3864	0.3876
0	0	0	0.125	0.25	First	0.2286	0.2324	0.2302	0.2324
					Last	0.2620	0.2476	0.2328	0.2526
0	0	0.125	0.25	0.25	First	0.2896	0.2952	0.2770	0.2952
					Last	0.3310	0.3180	0.3008	0.3200
0	0.05	0.05	0.3	0.3	First	0.3246	0.3418	0.3212	0.3418
					Last	0.3798	0.3594	0.3458	0.3656
0.05	0.2	0.3	0.4	0.5	First	0.4398	0.4610	0.4470	0.4610
					Last	0.5154	0.4930	0.4746	0.5000
0	0	0	0.25	0.5	First	0.4832	0.4988	0.4888	0.4988
					Last	0.5584	0.5428	0.5286	0.5522
0	0	0	0.35	0.35	First	0.3902	0.4198	0.4010	0.4198
					Last	0.4596	0.4516	0.4328	0.4572
0	0	0.25	0.25	0.5	First	0.5026	0.5242	0.4998	0.5242
					Last	0.5808	0.5640	0.5406	0.5740
0	0.125	0.25	0.25	0.25	First	0.2350	0.2390	0.2304	0.2390
					Last	0.2720	0.2556	0.2438	0.2578
0	0.125	0.125	0.125	0.25	First	0.1766	0.1832	0.1790	0.1832
					Last	0.2064	0.1938	0.1978	0.1952
0	0.125	0.125	0.125	0.125	First	0.1102	0.1110	0.1090	0.1110
					Last	0.1258	0.1130	0.1178	0.1134
0.125	0.125	0.125	0.25	0.25	First	0.1396	0.1402	0.1376	0.1402
					Last	0.1528	0.1460	0.1446	0.1462
0	0	0	0.1	0.3	First	0.2418	0.2544	0.2500	0.2544
					Last	0.2762	0.2656	0.2616	0.2682
0	0	0	0.2	0.7	First	0.6106	0.6360	0.6306	0.6360
					Last	0.6980	0.6844	0.6720	0.6968
0	0.1	0.1	0.6	0.6	First	0.6738	0.7110	0.6880	0.7110
					Last	0.7760	0.7616	0.7374	0.7702
0	0.1	0.3	0.4	0.4	First	0.4438	0.4594	0.4370	0.4594
					Last	0.5010	0.4878	0.4680	0.4950
0	0.05	0.2	0.4	0.4	First	0.4760	0.4988	0.4758	0.4988
					Last	0.5338	0.5192	0.4996	0.5312

Table B.138. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0516	0.0502	0.0480	0.0502
					Last	0.0578	0.0518	0.0502	0.0478
0.05	0.15	0.25	0.35	0.45	First	0.1804	0.1876	0.1842	0.1876
					Last	0.2078	0.2048	0.1976	0.2016
0	0.025	0.075	0.175	0.375	First	0.1580	0.1554	0.1520	0.1554
					Last	0.1804	0.1712	0.1656	0.1688
0	0	0	0	0.5	First	0.1752	0.1812	0.1840	0.1812
					Last	0.2002	0.1918	0.1898	0.1900
0	0	0	0.125	0.25	First	0.1198	0.1194	0.1170	0.1194
					Last	0.1310	0.1242	0.1238	0.1238
0	0	0.125	0.25	0.25	First	0.1442	0.1490	0.1446	0.1490
					Last	0.1526	0.1400	0.1378	0.1442
0	0.05	0.05	0.3	0.3	First	0.1562	0.1618	0.1520	0.1618
					Last	0.1780	0.1666	0.1618	0.1706
0.05	0.2	0.3	0.4	0.5	First	0.1958	0.1950	0.1894	0.1950
					Last	0.2264	0.2118	0.2042	0.2106
0	0	0	0.25	0.5	First	0.2298	0.2362	0.2360	0.2362
					Last	0.2704	0.2568	0.2538	0.2616
0	0	0	0.35	0.35	First	0.1838	0.1880	0.1824	0.1880
					Last	0.2084	0.1964	0.1890	0.1976
0	0	0.25	0.25	0.5	First	0.2352	0.2414	0.2342	0.2414
					Last	0.2586	0.2522	0.2480	0.2530
0	0.125	0.25	0.25	0.25	First	0.1156	0.1156	0.1150	0.1156
					Last	0.1352	0.1232	0.1184	0.1208
0	0.125	0.125	0.125	0.25	First	0.0972	0.1010	0.0994	0.1010
					Last	0.1066	0.1000	0.1004	0.1012
0	0.125	0.125	0.125	0.125	First	0.0748	0.0728	0.0736	0.0728
					Last	0.0794	0.0748	0.0750	0.0726
0.125	0.125	0.125	0.25	0.25	First	0.0880	0.0910	0.0880	0.0910
					Last	0.0996	0.0856	0.0818	0.0886
0	0	0	0.1	0.3	First	0.1300	0.1296	0.1256	0.1296
					Last	0.1516	0.1398	0.1362	0.1372
0	0	0	0.2	0.7	First	0.2924	0.3096	0.3066	0.3096
					Last	0.3444	0.3356	0.3362	0.3384
0	0.1	0.1	0.6	0.6	First	0.3312	0.3528	0.3492	0.3528
					Last	0.3900	0.3870	0.3692	0.3860
0	0.1	0.3	0.4	0.4	First	0.1952	0.2024	0.1968	0.2024
					Last	0.2252	0.2142	0.2088	0.2170
0	0.05	0.2	0.4	0.4	First	0.2020	0.2096	0.2002	0.2096
					Last	0.2286	0.2220	0.2168	0.2196

Table B.139. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0492	0.0504	0.0504	0.0504
					Last	0.0458	0.0476	0.0520	0.0536
0.05	0.15	0.25	0.35	0.45	First	0.2488	0.2786	0.2688	0.2786
					Last	0.2462	0.2734	0.2730	0.2890
0	0.025	0.075	0.175	0.375	First	0.2072	0.2254	0.2238	0.2254
					Last	0.2148	0.2264	0.2280	0.2380
0	0	0	0	0.5	First	0.2314	0.2530	0.2560	0.2530
					Last	0.2234	0.2374	0.2458	0.2608
0	0	0	0.125	0.25	First	0.1416	0.1532	0.1508	0.1532
					Last	0.1418	0.1514	0.1514	0.1620
0	0	0.125	0.25	0.25	First	0.1686	0.1858	0.1768	0.1858
					Last	0.1732	0.1866	0.1810	0.1982
0	0.05	0.05	0.3	0.3	First	0.1908	0.2166	0.2072	0.2166
					Last	0.1998	0.2120	0.2104	0.2276
0.05	0.2	0.3	0.4	0.5	First	0.2884	0.3172	0.3056	0.3172
					Last	0.2884	0.3130	0.3130	0.3368
0	0	0	0.25	0.5	First	0.3314	0.3694	0.3610	0.3694
					Last	0.3262	0.3512	0.3572	0.3872
0	0	0	0.35	0.35	First	0.2556	0.2818	0.2764	0.2818
					Last	0.2544	0.2816	0.2766	0.2972
0	0	0.25	0.25	0.5	First	0.3230	0.3552	0.3534	0.3552
					Last	0.3234	0.3492	0.3504	0.3726
0	0.125	0.25	0.25	0.25	First	0.1490	0.1562	0.1508	0.1562
					Last	0.1488	0.1520	0.1516	0.1636
0	0.125	0.125	0.125	0.25	First	0.1174	0.1272	0.1272	0.1272
					Last	0.1152	0.1242	0.1310	0.1338
0	0.125	0.125	0.125	0.125	First	0.0774	0.0854	0.0838	0.0854
					Last	0.0742	0.0782	0.0812	0.0940
0.125	0.125	0.125	0.25	0.25	First	0.0956	0.1020	0.0956	0.1020
					Last	0.0966	0.1004	0.1026	0.1050
0	0	0	0.1	0.3	First	0.1560	0.1726	0.1714	0.1726
					Last	0.1582	0.1666	0.1692	0.1786
0	0	0	0.2	0.7	First	0.4430	0.4858	0.4746	0.4858
					Last	0.4424	0.4762	0.4800	0.5102
0	0.1	0.1	0.6	0.6	First	0.4752	0.5288	0.5082	0.5288
					Last	0.4962	0.5260	0.5134	0.5542
0	0.1	0.3	0.4	0.4	First	0.2728	0.2976	0.2876	0.2976
					Last	0.2712	0.2948	0.2910	0.3166
0	0.05	0.2	0.4	0.4	First	0.2768	0.3084	0.2942	0.3084
					Last	0.2884	0.3062	0.3006	0.3268

Table B.140. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0530	0.0532	0.0526	0.0532
					Last	0.0466	0.0498	0.0554	0.0532
0.05	0.15	0.25	0.35	0.45	First	0.4440	0.4806	0.4632	0.4806
					Last	0.4560	0.4778	0.4732	0.5082
0	0.025	0.075	0.175	0.375	First	0.3896	0.4330	0.4172	0.4330
					Last	0.3954	0.4194	0.4136	0.4518
0	0	0	0	0.5	First	0.3760	0.4158	0.4238	0.4158
					Last	0.3740	0.4044	0.4268	0.4352
0	0	0	0.125	0.25	First	0.2378	0.2650	0.2596	0.2650
					Last	0.2352	0.2554	0.2552	0.2764
0	0	0.125	0.25	0.25	First	0.2982	0.3316	0.3106	0.3316
					Last	0.3028	0.3242	0.3142	0.3438
0	0.05	0.05	0.3	0.3	First	0.3464	0.3828	0.3654	0.3828
					Last	0.3446	0.3742	0.3612	0.4016
0.05	0.2	0.3	0.4	0.5	First	0.4964	0.5338	0.5122	0.5338
					Last	0.5100	0.5256	0.5126	0.5568
0	0	0	0.25	0.5	First	0.5554	0.5922	0.5728	0.5922
					Last	0.5702	0.5898	0.5822	0.6216
0	0	0	0.35	0.35	First	0.4546	0.5036	0.4762	0.5036
					Last	0.4644	0.4972	0.4816	0.5266
0	0	0.25	0.25	0.5	First	0.5582	0.6174	0.5890	0.6174
					Last	0.5772	0.5956	0.5826	0.6324
0	0.125	0.25	0.25	0.25	First	0.2508	0.2738	0.2648	0.2738
					Last	0.2582	0.2716	0.2710	0.2900
0	0.125	0.125	0.125	0.25	First	0.1946	0.2068	0.2066	0.2068
					Last	0.1924	0.2078	0.2150	0.2190
0	0.125	0.125	0.125	0.125	First	0.1078	0.1180	0.1114	0.1180
					Last	0.1110	0.1158	0.1132	0.1216
0.125	0.125	0.125	0.25	0.25	First	0.1338	0.1450	0.1414	0.1450
					Last	0.1304	0.1414	0.1412	0.1522
0	0	0	0.1	0.3	First	0.2740	0.3022	0.2954	0.3022
					Last	0.2672	0.2830	0.2884	0.3110
0	0	0	0.2	0.7	First	0.6854	0.7306	0.7164	0.7306
					Last	0.7034	0.7268	0.7262	0.7618
0	0.1	0.1	0.6	0.6	First	0.7626	0.8060	0.7746	0.8060
					Last	0.7746	0.7998	0.7788	0.8322
0	0.1	0.3	0.4	0.4	First	0.4962	0.5402	0.5076	0.5402
					Last	0.4952	0.5182	0.5068	0.5568
0	0.05	0.2	0.4	0.4	First	0.5198	0.5668	0.5334	0.5668
					Last	0.5276	0.5542	0.5372	0.5910

Table B.141. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0454	0.0532	0.0510	0.0532
					Last	0.0446	0.0442	0.0450	0.0518
0.05	0.15	0.25	0.35	0.45	First	0.1866	0.2074	0.2056	0.2074
					Last	0.1928	0.2086	0.2124	0.2212
0	0.025	0.075	0.175	0.375	First	0.1738	0.1912	0.1884	0.1912
					Last	0.1734	0.1862	0.1894	0.1978
0	0	0	0	0.5	First	0.1908	0.2060	0.2070	0.2060
					Last	0.1850	0.2006	0.2122	0.2188
0	0	0	0.125	0.25	First	0.1200	0.1252	0.1254	0.1252
					Last	0.1156	0.1196	0.1250	0.1296
0	0	0.125	0.25	0.25	First	0.1366	0.1496	0.1472	0.1496
					Last	0.1344	0.1446	0.1424	0.1568
0	0.05	0.05	0.3	0.3	First	0.1572	0.1650	0.1586	0.1650
					Last	0.1536	0.1672	0.1644	0.1758
0.05	0.2	0.3	0.4	0.5	First	0.2098	0.2274	0.2186	0.2274
					Last	0.2098	0.2216	0.2234	0.2420
0	0	0	0.25	0.5	First	0.2564	0.2746	0.2632	0.2746
					Last	0.2502	0.2638	0.2684	0.2886
0	0	0	0.35	0.35	First	0.1920	0.2180	0.2090	0.2180
					Last	0.1938	0.2068	0.2082	0.2296
0	0	0.25	0.25	0.5	First	0.2410	0.2708	0.2674	0.2708
					Last	0.2410	0.2636	0.2636	0.2794
0	0.125	0.25	0.25	0.25	First	0.1240	0.1328	0.1350	0.1328
					Last	0.1224	0.1308	0.1344	0.1440
0	0.125	0.125	0.125	0.25	First	0.0960	0.0982	0.0974	0.0982
					Last	0.0922	0.0994	0.1012	0.1034
0	0.125	0.125	0.125	0.125	First	0.0620	0.0634	0.0622	0.0634
					Last	0.0628	0.0656	0.0702	0.0706
0.125	0.125	0.125	0.25	0.25	First	0.0848	0.0888	0.0896	0.0888
					Last	0.0840	0.0924	0.0920	0.0948
0	0	0	0.1	0.3	First	0.1342	0.1456	0.1462	0.1456
					Last	0.1264	0.1384	0.1440	0.1494
0	0	0	0.2	0.7	First	0.3362	0.3726	0.3692	0.3726
					Last	0.3332	0.3578	0.3644	0.3892
0	0.1	0.1	0.6	0.6	First	0.3640	0.3994	0.3794	0.3994
					Last	0.3670	0.3960	0.3902	0.4204
0	0.1	0.3	0.4	0.4	First	0.2044	0.2312	0.2250	0.2312
					Last	0.2040	0.2156	0.2144	0.2364
0	0.05	0.2	0.4	0.4	First	0.2270	0.2536	0.2404	0.2536
					Last	0.2228	0.2428	0.2408	0.2666

Table B.142. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0500	0.0500	0.0522	0.0500
					Last	0.0524	0.0564	0.0534	0.0550
0.05	0.15	0.25	0.35	0.45	First	0.2770	0.3002	0.2876	0.3002
					Last	0.2768	0.2972	0.2814	0.3074
0	0.025	0.075	0.175	0.375	First	0.2324	0.2566	0.2492	0.2566
					Last	0.2342	0.2520	0.2418	0.2644
0	0	0	0	0.5	First	0.2624	0.2814	0.2842	0.2814
					Last	0.2672	0.2778	0.2762	0.2934
0	0	0	0.125	0.25	First	0.1614	0.1698	0.1616	0.1698
					Last	0.1562	0.1702	0.1580	0.1728
0	0	0.125	0.25	0.25	First	0.2004	0.2102	0.1970	0.2102
					Last	0.2004	0.2130	0.1948	0.2186
0	0.05	0.05	0.3	0.3	First	0.2234	0.2360	0.2288	0.2360
					Last	0.2278	0.2366	0.2214	0.2394
0.05	0.2	0.3	0.4	0.5	First	0.3028	0.3318	0.3220	0.3318
					Last	0.3086	0.3276	0.3168	0.3454
0	0	0	0.25	0.5	First	0.3660	0.3868	0.3760	0.3868
					Last	0.3638	0.3872	0.3704	0.4026
0	0	0	0.35	0.35	First	0.2972	0.3264	0.3092	0.3264
					Last	0.2888	0.3144	0.2946	0.3332
0	0	0.25	0.25	0.5	First	0.3660	0.3884	0.3792	0.3884
					Last	0.3564	0.3840	0.3668	0.4032
0	0.125	0.25	0.25	0.25	First	0.1692	0.1746	0.1704	0.1746
					Last	0.1642	0.1762	0.1692	0.1798
0	0.125	0.125	0.125	0.25	First	0.1364	0.1384	0.1412	0.1384
					Last	0.1354	0.1370	0.1344	0.1498
0	0.125	0.125	0.125	0.125	First	0.0808	0.0874	0.0872	0.0874
					Last	0.0836	0.0882	0.0878	0.0912
0.125	0.125	0.125	0.25	0.25	First	0.1050	0.1058	0.1038	0.1058
					Last	0.0972	0.1058	0.0996	0.1062
0	0	0	0.1	0.3	First	0.1788	0.1920	0.1880	0.1920
					Last	0.1766	0.1870	0.1802	0.2008
0	0	0	0.2	0.7	First	0.5020	0.5436	0.5322	0.5436
					Last	0.4998	0.5264	0.5176	0.5596
0	0.1	0.1	0.6	0.6	First	0.5414	0.5858	0.5596	0.5858
					Last	0.5406	0.5768	0.5488	0.6050
0	0.1	0.3	0.4	0.4	First	0.3184	0.3394	0.3256	0.3394
					Last	0.3130	0.3340	0.3202	0.3490
0	0.05	0.2	0.4	0.4	First	0.3292	0.3540	0.3384	0.3540
					Last	0.3264	0.3520	0.3356	0.3702

Table B.143. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0540	0.0538	0.0510	0.0538
					Last	0.0558	0.0554	0.0514	0.0544
0.05	0.15	0.25	0.35	0.45	First	0.5124	0.5354	0.5094	0.5354
					Last	0.5090	0.5286	0.5012	0.5494
0	0.025	0.075	0.175	0.375	First	0.4438	0.4674	0.4488	0.4674
					Last	0.4396	0.4594	0.4402	0.4818
0	0	0	0	0.5	First	0.4334	0.4770	0.4800	0.4770
					Last	0.4282	0.4656	0.4688	0.4938
0	0	0	0.125	0.25	First	0.2756	0.2900	0.2736	0.2900
					Last	0.2716	0.2814	0.2680	0.2998
0	0	0.125	0.25	0.25	First	0.3588	0.3776	0.3494	0.3776
					Last	0.3542	0.3772	0.3448	0.3862
0	0.05	0.05	0.3	0.3	First	0.4038	0.4370	0.4128	0.4370
					Last	0.4024	0.4300	0.4070	0.4544
0.05	0.2	0.3	0.4	0.5	First	0.5580	0.5916	0.5638	0.5916
					Last	0.5504	0.5734	0.5478	0.6042
0	0	0	0.25	0.5	First	0.6242	0.6614	0.6420	0.6614
					Last	0.6242	0.6522	0.6276	0.6770
0	0	0	0.35	0.35	First	0.5148	0.5504	0.5310	0.5504
					Last	0.5136	0.5438	0.5120	0.5706
0	0	0.25	0.25	0.5	First	0.6504	0.6836	0.6528	0.6836
					Last	0.6400	0.6636	0.6336	0.6948
0	0.125	0.25	0.25	0.25	First	0.2972	0.3158	0.3018	0.3158
					Last	0.2958	0.3148	0.2976	0.3296
0	0.125	0.125	0.125	0.25	First	0.2274	0.2384	0.2354	0.2384
					Last	0.2184	0.2336	0.2280	0.2468
0	0.125	0.125	0.125	0.125	First	0.1130	0.1162	0.1200	0.1162
					Last	0.1188	0.1210	0.1170	0.1200
0.125	0.125	0.125	0.25	0.25	First	0.1636	0.1758	0.1698	0.1758
					Last	0.1648	0.1744	0.1664	0.1850
0	0	0	0.1	0.3	First	0.3068	0.3336	0.3310	0.3336
					Last	0.3058	0.3316	0.3224	0.3490
0	0	0	0.2	0.7	First	0.7536	0.7884	0.7752	0.7884
					Last	0.7640	0.7892	0.7700	0.8088
0	0.1	0.1	0.6	0.6	First	0.8200	0.8556	0.8290	0.8556
					Last	0.8180	0.8438	0.8096	0.8652
0	0.1	0.3	0.4	0.4	First	0.5630	0.6016	0.5710	0.6016
					Last	0.5584	0.5864	0.5580	0.6186
0	0.05	0.2	0.4	0.4	First	0.5924	0.6248	0.5926	0.6248
					Last	0.5800	0.6044	0.5744	0.6384

Table B.144. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 10, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0508	0.0528	0.0538	0.0528
					Last	0.0542	0.0584	0.0570	0.0566
0.05	0.15	0.25	0.35	0.45	First	0.2278	0.2380	0.2290	0.2380
					Last	0.2200	0.2318	0.2224	0.2498
0	0.025	0.075	0.175	0.375	First	0.1974	0.2034	0.1994	0.2034
					Last	0.1936	0.2054	0.1946	0.2126
0	0	0	0	0.5	First	0.2142	0.2264	0.2268	0.2264
					Last	0.2072	0.2172	0.2192	0.2352
0	0	0	0.125	0.25	First	0.1354	0.1430	0.1384	0.1430
					Last	0.1318	0.1426	0.1364	0.1492
0	0	0.125	0.25	0.25	First	0.1572	0.1670	0.1604	0.1670
					Last	0.1562	0.1632	0.1540	0.1720
0	0.05	0.05	0.3	0.3	First	0.1800	0.1884	0.1840	0.1884
					Last	0.1830	0.1926	0.1824	0.1974
0.05	0.2	0.3	0.4	0.5	First	0.2460	0.2610	0.2476	0.2610
					Last	0.2368	0.2570	0.2432	0.2696
0	0	0	0.25	0.5	First	0.2854	0.3066	0.2952	0.3066
					Last	0.2804	0.2976	0.2836	0.3146
0	0	0	0.35	0.35	First	0.2282	0.2434	0.2316	0.2434
					Last	0.2294	0.2426	0.2296	0.2522
0	0	0.25	0.25	0.5	First	0.2732	0.3028	0.2894	0.3028
					Last	0.2714	0.2918	0.2856	0.3128
0	0.125	0.25	0.25	0.25	First	0.1342	0.1470	0.1408	0.1470
					Last	0.1416	0.1500	0.1414	0.1621
0	0.125	0.125	0.125	0.25	First	0.1212	0.1194	0.1204	0.1194
					Last	0.1236	0.1290	0.1264	0.1362
0	0.125	0.125	0.125	0.125	First	0.0786	0.0780	0.0762	0.0780
					Last	0.0792	0.0808	0.0796	0.0816
0.125	0.125	0.125	0.25	0.25	First	0.0868	0.0928	0.0908	0.0928
					Last	0.0876	0.0930	0.0892	0.0976
0	0	0	0.1	0.3	First	0.1426	0.1502	0.1500	0.1502
					Last	0.1420	0.1572	0.1476	0.1590
0	0	0	0.2	0.7	First	0.3696	0.4028	0.3942	0.4028
					Last	0.3600	0.3936	0.3842	0.4100
0	0.1	0.1	0.6	0.6	First	0.4150	0.4418	0.4222	0.4418
					Last	0.4102	0.4360	0.4126	0.4600
0	0.1	0.3	0.4	0.4	First	0.2336	0.2514	0.2388	0.2514
					Last	0.2308	0.2492	0.2358	0.2624
0	0.05	0.2	0.4	0.4	First	0.2416	0.2684	0.2496	0.2684
					Last	0.2460	0.2634	0.2490	0.2744

Table B.145. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0460	0.0448	0.0440	0.0448
					Last	0.0470	0.0468	0.0468	0.0476
0.05	0.15	0.25	0.35	0.45	First	0.3040	0.3170	0.3122	0.3170
					Last	0.3478	0.3668	0.3648	0.3756
0	0.025	0.075	0.175	0.375	First	0.2506	0.2670	0.2632	0.2670
					Last	0.2766	0.2948	0.3034	0.3126
0	0	0	0	0.5	First	0.2944	0.3140	0.3216	0.3140
					Last	0.3358	0.3562	0.3716	0.3686
0	0	0	0.125	0.25	First	0.1702	0.1766	0.1732	0.1766
					Last	0.1896	0.1996	0.2002	0.2032
0	0	0.125	0.25	0.25	First	0.2028	0.2208	0.2108	0.2208
					Last	0.2340	0.2480	0.2444	0.2570
0	0.05	0.05	0.3	0.3	First	0.2466	0.2524	0.2468	0.2524
					Last	0.2780	0.2952	0.2896	0.3020
0.05	0.2	0.3	0.4	0.5	First	0.3358	0.3490	0.3530	0.3490
					Last	0.3784	0.3932	0.3968	0.4022
0	0	0	0.25	0.5	First	0.3912	0.4148	0.4186	0.4148
					Last	0.4626	0.4842	0.4846	0.5022
0	0	0	0.35	0.35	First	0.3186	0.3310	0.3240	0.3310
					Last	0.3668	0.3872	0.3790	0.3966
0	0	0.25	0.25	0.5	First	0.4150	0.4322	0.4310	0.4322
					Last	0.4682	0.4938	0.4950	0.5090
0	0.125	0.25	0.25	0.25	First	0.1818	0.1888	0.1884	0.1888
					Last	0.1928	0.2060	0.2094	0.2132
0	0.125	0.125	0.125	0.25	First	0.1282	0.1388	0.1458	0.1388
					Last	0.1458	0.1564	0.1656	0.1648
0	0.125	0.125	0.125	0.125	First	0.0848	0.0892	0.0928	0.0892
					Last	0.0930	0.0938	0.0988	0.0950
0.125	0.125	0.125	0.25	0.25	First	0.1018	0.1052	0.1044	0.1052
					Last	0.1028	0.1126	0.1136	0.1156
0	0	0	0.1	0.3	First	0.1864	0.2010	0.2074	0.2010
					Last	0.2114	0.2246	0.2298	0.2330
0	0	0	0.2	0.7	First	0.5292	0.5736	0.5754	0.5736
					Last	0.6240	0.6560	0.6586	0.6722
0	0.1	0.1	0.6	0.6	First	0.6016	0.6308	0.6130	0.6308
					Last	0.6870	0.7122	0.6914	0.7264
0	0.1	0.3	0.4	0.4	First	0.3440	0.3612	0.3492	0.3612
					Last	0.3952	0.4164	0.4144	0.4306
0	0.05	0.2	0.4	0.4	First	0.3626	0.3846	0.3694	0.3846
					Last	0.4238	0.4506	0.4440	0.4606

Table B.146. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0510	0.0474	0.0476	0.0474
					Last	0.0434	0.0452	0.0474	0.0448
0.05	0.15	0.25	0.35	0.45	First	0.5490	0.5690	0.5466	0.5690
					Last	0.6368	0.6414	0.6312	0.6586
0	0.025	0.075	0.175	0.375	First	0.4692	0.4852	0.4748	0.4852
					Last	0.5434	0.5558	0.5494	0.5726
0	0	0	0	0.5	First	0.4770	0.5112	0.5206	0.5112
					Last	0.5486	0.5780	0.6016	0.5974
0	0	0	0.125	0.25	First	0.2900	0.3216	0.3186	0.3216
					Last	0.3408	0.3576	0.3602	0.3700
0	0	0.125	0.25	0.25	First	0.3814	0.3970	0.3820	0.3970
					Last	0.4472	0.4626	0.4540	0.4756
0	0.05	0.05	0.3	0.3	First	0.4426	0.4640	0.4468	0.4640
					Last	0.5230	0.5430	0.5338	0.5536
0.05	0.2	0.3	0.4	0.5	First	0.6086	0.6314	0.6138	0.6314
					Last	0.7054	0.7134	0.7020	0.7264
0	0	0	0.25	0.5	First	0.6822	0.7020	0.6830	0.7020
					Last	0.7670	0.7804	0.7726	0.7952
0	0	0	0.35	0.35	First	0.5474	0.5800	0.5540	0.5800
					Last	0.6378	0.6560	0.6464	0.6770
0	0	0.25	0.25	0.5	First	0.6840	0.7146	0.6948	0.7146
					Last	0.7746	0.7932	0.7856	0.8036
0	0.125	0.25	0.25	0.25	First	0.3030	0.3164	0.3132	0.3164
					Last	0.3530	0.3696	0.3708	0.3748
0	0.125	0.125	0.125	0.25	First	0.2344	0.2462	0.2446	0.2462
					Last	0.2572	0.2716	0.2786	0.2780
0	0.125	0.125	0.125	0.125	First	0.1310	0.1234	0.1268	0.1234
					Last	0.1368	0.1400	0.1416	0.1456
0.125	0.125	0.125	0.25	0.25	First	0.1748	0.1754	0.1722	0.1754
					Last	0.1850	0.1966	0.1936	0.1996
0	0	0	0.1	0.3	First	0.3392	0.3638	0.3600	0.3638
					Last	0.3912	0.4136	0.4192	0.4242
0	0	0	0.2	0.7	First	0.8084	0.8294	0.8198	0.8294
					Last	0.9016	0.9058	0.9012	0.9134
0	0.1	0.1	0.6	0.6	First	0.8596	0.8868	0.8604	0.8868
					Last	0.9316	0.9404	0.9324	0.9462
0	0.1	0.3	0.4	0.4	First	0.6044	0.6296	0.6054	0.6296
					Last	0.6914	0.7128	0.6988	0.7240
0	0.05	0.2	0.4	0.4	First	0.6370	0.6604	0.6364	0.6604
					Last	0.7208	0.7414	0.7240	0.7528

Table B.147. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0478	0.0478	0.0476	0.0478
					Last	0.0466	0.0482	0.0502	0.0506
0.05	0.15	0.25	0.35	0.45	First	0.2378	0.2506	0.2476	0.2506
					Last	0.2622	0.2784	0.2858	0.2884
0	0.025	0.075	0.175	0.375	First	0.2026	0.2162	0.2138	0.2162
					Last	0.2318	0.2440	0.2454	0.2502
0	0	0	0	0.5	First	0.2256	0.2376	0.2416	0.2376
					Last	0.2552	0.2648	0.2790	0.2770
0	0	0	0.125	0.25	First	0.1444	0.1464	0.1488	0.1464
					Last	0.1524	0.1582	0.1582	0.1654
0	0	0.125	0.25	0.25	First	0.1686	0.1742	0.1770	0.1742
					Last	0.1834	0.1904	0.1928	0.1994
0	0.05	0.05	0.3	0.3	First	0.1938	0.2004	0.1950	0.2004
					Last	0.2232	0.2332	0.2322	0.2352
0.05	0.2	0.3	0.4	0.5	First	0.2554	0.2658	0.2674	0.2658
					Last	0.2826	0.3004	0.3048	0.3112
0	0	0	0.25	0.5	First	0.3150	0.3354	0.3322	0.3354
					Last	0.3520	0.3710	0.3696	0.3836
0	0	0	0.35	0.35	First	0.2442	0.2588	0.2512	0.2588
					Last	0.2778	0.2928	0.2854	0.3048
0	0	0.25	0.25	0.5	First	0.3014	0.3178	0.3162	0.3178
					Last	0.3410	0.3592	0.3612	0.3656
0	0.125	0.25	0.25	0.25	First	0.1452	0.1464	0.1462	0.1464
					Last	0.1544	0.1618	0.1674	0.1690
0	0.125	0.125	0.125	0.25	First	0.1260	0.1292	0.1286	0.1292
					Last	0.1314	0.1422	0.1468	0.1538
0	0.125	0.125	0.125	0.125	First	0.0798	0.0772	0.0754	0.0772
					Last	0.0788	0.0776	0.0786	0.0810
0.125	0.125	0.125	0.25	0.25	First	0.0954	0.0958	0.0970	0.0958
					Last	0.0982	0.0998	0.1030	0.1046
0	0	0	0.1	0.3	First	0.1562	0.1670	0.1654	0.1670
					Last	0.1680	0.1724	0.1770	0.1830
0	0	0	0.2	0.7	First	0.4150	0.4310	0.4356	0.4310
					Last	0.4716	0.4952	0.5020	0.5082
0	0.1	0.1	0.6	0.6	First	0.4632	0.4876	0.4646	0.4876
					Last	0.5356	0.5516	0.5430	0.5670
0	0.1	0.3	0.4	0.4	First	0.2544	0.2686	0.2666	0.2686
					Last	0.2898	0.3046	0.3042	0.3148
0	0.05	0.2	0.4	0.4	First	0.2656	0.2854	0.2814	0.2854
					Last	0.3080	0.3220	0.3154	0.3340

Table B.148. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0498	0.0482	0.0440	0.0482
					Last	0.0482	0.0496	0.0498	0.0484
0.05	0.15	0.25	0.35	0.45	First	0.3386	0.3598	0.3540	0.3598
					Last	0.3700	0.3918	0.3828	0.3944
0	0.025	0.075	0.175	0.375	First	0.2946	0.3104	0.3106	0.3104
					Last	0.3204	0.3306	0.3248	0.3372
0	0	0	0	0.5	First	0.3080	0.3392	0.3462	0.3392
					Last	0.3484	0.3654	0.3634	0.3718
0	0	0	0.125	0.25	First	0.1926	0.1972	0.1892	0.1972
					Last	0.2040	0.2104	0.2064	0.2112
0	0	0.125	0.25	0.25	First	0.2334	0.2504	0.2428	0.2504
					Last	0.2550	0.2670	0.2548	0.2680
0	0.05	0.05	0.3	0.3	First	0.2730	0.2922	0.2832	0.2922
					Last	0.3046	0.3208	0.3030	0.3240
0.05	0.2	0.3	0.4	0.5	First	0.3824	0.4094	0.4038	0.4094
					Last	0.4072	0.4278	0.4230	0.4400
0	0	0	0.25	0.5	First	0.4498	0.4866	0.4716	0.4866
					Last	0.4960	0.5162	0.5074	0.5262
0	0	0	0.35	0.35	First	0.3696	0.3956	0.3774	0.3956
					Last	0.4052	0.4260	0.4050	0.4306
0	0	0.25	0.25	0.5	First	0.4456	0.4862	0.4720	0.4862
					Last	0.4928	0.5214	0.5108	0.5292
0	0.125	0.25	0.25	0.25	First	0.1930	0.2086	0.1972	0.2086
					Last	0.2048	0.2188	0.2122	0.2270
0	0.125	0.125	0.125	0.25	First	0.1484	0.1500	0.1512	0.1500
					Last	0.1522	0.1668	0.1660	0.1714
0	0.125	0.125	0.125	0.125	First	0.0932	0.0892	0.0906	0.0892
					Last	0.0916	0.0940	0.0922	0.1024
0.125	0.125	0.125	0.25	0.25	First	0.1208	0.1288	0.1224	0.1288
					Last	0.1206	0.1236	0.1186	0.1315
0	0	0	0.1	0.3	First	0.2058	0.2212	0.2202	0.2212
					Last	0.2218	0.2366	0.2356	0.2394
0	0	0	0.2	0.7	First	0.6164	0.6618	0.6480	0.6618
					Last	0.6768	0.6964	0.6916	0.7064
0	0.1	0.1	0.6	0.6	First	0.6580	0.7000	0.6678	0.7000
					Last	0.7204	0.7404	0.7228	0.7534
0	0.1	0.3	0.4	0.4	First	0.3798	0.4072	0.3902	0.4072
					Last	0.4196	0.4278	0.4080	0.4350
0	0.05	0.2	0.4	0.4	First	0.4084	0.4390	0.4198	0.4390
					Last	0.4506	0.4744	0.4566	0.4722

Table B.149. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0530	0.0504	0.0512	0.0504
					Last	0.0512	0.0530	0.0522	0.0518
0.05	0.15	0.25	0.35	0.45	First	0.6246	0.6512	0.6288	0.6512
					Last	0.6742	0.6810	0.6602	0.6926
0	0.025	0.075	0.175	0.375	First	0.5326	0.5618	0.5428	0.5618
					Last	0.5812	0.6020	0.5870	0.6096
0	0	0	0	0.5	First	0.5170	0.5610	0.5754	0.5610
					Last	0.5826	0.6106	0.6208	0.6184
0	0	0	0.125	0.25	First	0.3206	0.3498	0.3382	0.3498
					Last	0.3534	0.3682	0.3572	0.3744
0	0	0.125	0.25	0.25	First	0.4420	0.4716	0.4484	0.4716
					Last	0.4894	0.5026	0.4802	0.5140
0	0.05	0.05	0.3	0.3	First	0.4990	0.5320	0.5088	0.5320
					Last	0.5544	0.5716	0.5460	0.5752
0.05	0.2	0.3	0.4	0.5	First	0.6722	0.6990	0.6766	0.6990
					Last	0.7294	0.7330	0.7152	0.7422
0	0	0	0.25	0.5	First	0.7422	0.7730	0.7506	0.7730
					Last	0.7960	0.8088	0.7914	0.8182
0	0	0	0.35	0.35	First	0.6152	0.6590	0.6372	0.6590
					Last	0.6714	0.6972	0.6740	0.7070
0	0	0.25	0.25	0.5	First	0.7452	0.7790	0.7504	0.7790
					Last	0.8012	0.8108	0.7940	0.8254
0	0.125	0.25	0.25	0.25	First	0.3508	0.3720	0.3584	0.3720
					Last	0.3894	0.3996	0.3848	0.4106
0	0.125	0.125	0.125	0.25	First	0.2704	0.2786	0.2782	0.2786
					Last	0.2916	0.2958	0.2956	0.3004
0	0.125	0.125	0.125	0.125	First	0.1276	0.1288	0.1284	0.1288
					Last	0.1426	0.1460	0.1408	0.1466
0.125	0.125	0.125	0.25	0.25	First	0.1858	0.1966	0.1868	0.1966
					Last	0.1994	0.2110	0.1984	0.2178
0	0	0	0.1	0.3	First	0.3792	0.4020	0.4012	0.4020
					Last	0.4136	0.4358	0.4272	0.4414
0	0	0	0.2	0.7	First	0.8628	0.8932	0.8832	0.8932
					Last	0.9200	0.9246	0.9184	0.9294
0	0.1	0.1	0.6	0.6	First	0.9062	0.9264	0.9072	0.9264
					Last	0.9364	0.9478	0.9344	0.9510
0	0.1	0.3	0.4	0.4	First	0.6646	0.6990	0.6718	0.6990
					Last	0.7184	0.7314	0.7104	0.7412
0	0.05	0.2	0.4	0.4	First	0.6910	0.7260	0.6968	0.7260
					Last	0.7468	0.7596	0.7364	0.7778

Table B.150. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0528	0.0522	0.0508	0.0522
					Last	0.0526	0.0536	0.0534	0.0508
0.05	0.15	0.25	0.35	0.45	First	0.2410	0.2682	0.2652	0.2682
					Last	0.2728	0.2898	0.2884	0.29140
0	0.025	0.075	0.175	0.375	First	0.2210	0.2364	0.2346	0.2364
					Last	0.2458	0.2590	0.2556	0.2598
0	0	0	0	0.5	First	0.2488	0.2650	0.2722	0.2650
					Last	0.2734	0.2884	0.2920	0.2994
0	0	0	0.125	0.25	First	0.1442	0.1504	0.1462	0.1504
					Last	0.1578	0.1696	0.1630	0.1707
0	0	0.125	0.25	0.25	First	0.1844	0.1968	0.1908	0.1968
					Last	0.1964	0.2048	0.1976	0.2103
0	0.05	0.05	0.3	0.3	First	0.2080	0.2216	0.2140	0.2216
					Last	0.2264	0.2350	0.2296	0.2396
0.05	0.2	0.3	0.4	0.5	First	0.2852	0.3122	0.3034	0.3122
					Last	0.3110	0.3260	0.3180	0.3308
0	0	0	0.25	0.5	First	0.3406	0.3600	0.3506	0.3600
					Last	0.3768	0.4008	0.3926	0.4016
0	0	0	0.35	0.35	First	0.2694	0.2890	0.2794	0.2890
					Last	0.2976	0.3150	0.3016	0.3178
0	0	0.25	0.25	0.5	First	0.3446	0.3704	0.3590	0.3704
					Last	0.3748	0.4002	0.3880	0.4072
0	0.125	0.25	0.25	0.25	First	0.1494	0.1562	0.1564	0.1562
					Last	0.1616	0.1748	0.1650	0.1788
0	0.125	0.125	0.125	0.25	First	0.1274	0.1346	0.1388	0.1346
					Last	0.1324	0.1384	0.1396	0.1400
0	0.125	0.125	0.125	0.125	First	0.0780	0.0772	0.0806	0.0772
					Last	0.0806	0.0866	0.0868	0.0928
0.125	0.125	0.125	0.25	0.25	First	0.1074	0.1070	0.1080	0.1070
					Last	0.1102	0.1136	0.1108	0.1195
0	0	0	0.1	0.3	First	0.1742	0.1780	0.1756	0.1780
					Last	0.1898	0.1932	0.1866	0.1963
0	0	0	0.2	0.7	First	0.4618	0.5002	0.4942	0.5002
					Last	0.5140	0.5312	0.5282	0.5402
0	0.1	0.1	0.6	0.6	First	0.5040	0.5452	0.5270	0.5452
					Last	0.5688	0.5892	0.5670	0.5990
0	0.1	0.3	0.4	0.4	First	0.2766	0.2968	0.2870	0.2968
					Last	0.3068	0.3234	0.3098	0.3280
0	0.05	0.2	0.4	0.4	First	0.3124	0.3362	0.3170	0.3362
					Last	0.3382	0.3568	0.3420	0.3600

Table B.151. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0522	0.0512	0.0538	0.0512
					Last	0.0556	0.0518	0.0572	0.0538
0.05	0.15	0.25	0.35	0.45	First	0.3712	0.3998	0.3892	0.3998
					Last	0.4000	0.4088	0.4028	0.4296
0	0.025	0.075	0.175	0.375	First	0.3270	0.3450	0.3462	0.3450
					Last	0.3480	0.3510	0.3554	0.3746
0	0	0	0	0.5	First	0.3528	0.3794	0.3884	0.3794
					Last	0.3846	0.3836	0.4048	0.4168
0	0	0	0.125	0.25	First	0.1986	0.2118	0.2106	0.2118
					Last	0.2152	0.2122	0.2146	0.2286
0	0	0.125	0.25	0.25	First	0.2618	0.2734	0.2586	0.2734
					Last	0.2810	0.2756	0.2672	0.2956
0	0.05	0.05	0.3	0.3	First	0.2918	0.3090	0.3010	0.3090
					Last	0.3110	0.3094	0.3070	0.3370
0.05	0.2	0.3	0.4	0.5	First	0.4212	0.4500	0.4368	0.4500
					Last	0.4518	0.4574	0.4584	0.4880
0	0	0	0.25	0.5	First	0.4918	0.5276	0.5090	0.5276
					Last	0.5228	0.5332	0.5284	0.5656
0	0	0	0.35	0.35	First	0.3888	0.4160	0.3996	0.4160
					Last	0.4042	0.4098	0.4030	0.4438
0	0	0.25	0.25	0.5	First	0.4958	0.5330	0.5144	0.5330
					Last	0.5214	0.5322	0.5362	0.5628
0	0.125	0.25	0.25	0.25	First	0.2104	0.2228	0.2160	0.2228
					Last	0.2244	0.2188	0.2236	0.2356
0	0.125	0.125	0.125	0.25	First	0.1668	0.1730	0.1740	0.1730
					Last	0.1738	0.1734	0.1844	0.1868
0	0.125	0.125	0.125	0.125	First	0.0960	0.0990	0.0982	0.0990
					Last	0.1008	0.0944	0.0978	0.1084
0.125	0.125	0.125	0.25	0.25	First	0.1262	0.1272	0.1242	0.1272
					Last	0.1300	0.1226	0.1256	0.1390
0	0	0	0.1	0.3	First	0.2248	0.2410	0.2428	0.2410
					Last	0.2474	0.2452	0.2440	0.2620
0	0	0	0.2	0.7	First	0.6626	0.6958	0.6918	0.6958
					Last	0.6986	0.7068	0.7118	0.7352
0	0.1	0.1	0.6	0.6	First	0.7196	0.7650	0.7358	0.7650
					Last	0.7622	0.7706	0.7562	0.8010
0	0.1	0.3	0.4	0.4	First	0.4126	0.4462	0.4306	0.4462
					Last	0.4380	0.4436	0.4392	0.4766
0	0.05	0.2	0.4	0.4	First	0.4534	0.4828	0.4612	0.4828
					Last	0.4730	0.4796	0.4724	0.5106

Table B.152. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0490	0.0462	0.0456	0.0462
					Last	0.0500	0.0448	0.0502	0.0488
0.05	0.15	0.25	0.35	0.45	First	0.6710	0.6994	0.6750	0.6994
					Last	0.7022	0.7032	0.6900	0.7358
0	0.025	0.075	0.175	0.375	First	0.5900	0.6196	0.5982	0.6196
					Last	0.6264	0.6270	0.6168	0.6554
0	0	0	0	0.5	First	0.5814	0.6226	0.6282	0.6226
					Last	0.6264	0.6418	0.6638	0.6714
0	0	0	0.125	0.25	First	0.3752	0.3980	0.3882	0.3980
					Last	0.4022	0.4028	0.3972	0.4248
0	0	0.125	0.25	0.25	First	0.4812	0.4980	0.4758	0.4980
					Last	0.5052	0.5052	0.4884	0.5412
0	0.05	0.05	0.3	0.3	First	0.5548	0.5832	0.5538	0.5832
					Last	0.5882	0.5958	0.5808	0.6304
0.05	0.2	0.3	0.4	0.5	First	0.7270	0.7516	0.7300	0.7516
					Last	0.7502	0.7484	0.7414	0.7864
0	0	0	0.25	0.5	First	0.7918	0.8136	0.7916	0.8136
					Last	0.8298	0.8232	0.8134	0.8468
0	0	0	0.35	0.35	First	0.6692	0.7034	0.6766	0.7034
					Last	0.6992	0.7072	0.6902	0.7426
0	0	0.25	0.25	0.5	First	0.8050	0.8328	0.8114	0.8328
					Last	0.8320	0.8336	0.8252	0.8590
0	0.125	0.25	0.25	0.25	First	0.3790	0.4034	0.3856	0.4034
					Last	0.3956	0.3924	0.3958	0.4222
0	0.125	0.125	0.125	0.25	First	0.2792	0.2946	0.2924	0.2946
					Last	0.3002	0.2980	0.3124	0.3152
0	0.125	0.125	0.125	0.125	First	0.1398	0.1420	0.1446	0.1420
					Last	0.1468	0.1398	0.1492	0.1528
0.125	0.125	0.125	0.25	0.25	First	0.2090	0.2186	0.2084	0.2186
					Last	0.2212	0.2198	0.2164	0.2370
0	0	0	0.1	0.3	First	0.4304	0.4558	0.4472	0.4558
					Last	0.4558	0.4554	0.4554	0.4846
0	0	0	0.2	0.7	First	0.9092	0.9226	0.9100	0.9226
					Last	0.9356	0.9288	0.9232	0.9462
0	0.1	0.1	0.6	0.6	First	0.9438	0.9606	0.9488	0.9606
					Last	0.9620	0.9636	0.9534	0.9742
0	0.1	0.3	0.4	0.4	First	0.7170	0.7464	0.7222	0.7464
					Last	0.7506	0.7460	0.7358	0.7844
0	0.05	0.2	0.4	0.4	First	0.7578	0.7824	0.7500	0.7824
					Last	0.7938	0.7948	0.7724	0.8220

Table B.153. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 20, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0520	0.0516	0.0510	0.0516
					Last	0.0530	0.0468	0.0482	0.0504
0.05	0.15	0.25	0.35	0.45	First	0.2784	0.2970	0.2926	0.2970
					Last	0.3020	0.2984	0.3002	0.3212
0	0.025	0.075	0.175	0.375	First	0.2456	0.2632	0.2578	0.2632
					Last	0.2706	0.2600	0.2640	0.2852
0	0	0	0	0.5	First	0.2778	0.2898	0.2928	0.2898
					Last	0.2884	0.2888	0.3004	0.3076
0	0	0	0.125	0.25	First	0.1696	0.1814	0.1764	0.1814
					Last	0.1830	0.1800	0.1846	0.1942
0	0	0.125	0.25	0.25	First	0.2012	0.2156	0.2068	0.2156
					Last	0.2162	0.2136	0.2126	0.2290
0	0.05	0.05	0.3	0.3	First	0.2238	0.2416	0.2354	0.2416
					Last	0.2324	0.2374	0.2396	0.2576
0.05	0.2	0.3	0.4	0.5	First	0.3144	0.3316	0.3250	0.3316
					Last	0.3342	0.3312	0.3348	0.3592
0	0	0	0.25	0.5	First	0.3816	0.4052	0.3970	0.4052
					Last	0.4074	0.4040	0.4022	0.4336
0	0	0	0.35	0.35	First	0.3026	0.3186	0.3074	0.3186
					Last	0.3172	0.3218	0.3164	0.3426
0	0	0.25	0.25	0.5	First	0.3764	0.3976	0.3878	0.3976
					Last	0.3968	0.4000	0.3956	0.4246
0	0.125	0.25	0.25	0.25	First	0.1700	0.1698	0.1692	0.1698
					Last	0.1688	0.1644	0.1684	0.1788
0	0.125	0.125	0.125	0.25	First	0.1346	0.1418	0.1394	0.1418
					Last	0.1396	0.1382	0.1450	0.1498
0	0.125	0.125	0.125	0.125	First	0.0912	0.0904	0.0858	0.0904
					Last	0.0866	0.0846	0.0882	0.0920
0.125	0.125	0.125	0.25	0.25	First	0.1080	0.1094	0.1112	0.1094
					Last	0.1086	0.1044	0.1054	0.1180
0	0	0	0.1	0.3	First	0.1834	0.1896	0.1864	0.1896
					Last	0.1950	0.1924	0.1942	0.2036
0	0	0	0.2	0.7	First	0.5150	0.5552	0.5446	0.5552
					Last	0.5462	0.5578	0.5592	0.5886
0	0.1	0.1	0.6	0.6	First	0.5574	0.5946	0.5690	0.5946
					Last	0.5884	0.5974	0.5804	0.6264
0	0.1	0.3	0.4	0.4	First	0.3216	0.3374	0.3186	0.3374
					Last	0.3384	0.3394	0.3322	0.3612
0	0.05	0.2	0.4	0.4	First	0.3428	0.3530	0.3364	0.3530
					Last	0.3600	0.3592	0.3598	0.3846

Table B.154. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0500	0.0496	0.0462	0.0496
					Last	0.0538	0.0504	0.0492	0.0496
0.05	0.15	0.25	0.35	0.45	First	0.3782	0.3938	0.3848	0.3938
					Last	0.4506	0.4606	0.4586	0.4736
0	0.025	0.075	0.175	0.375	First	0.3296	0.3444	0.3370	0.3444
					Last	0.4048	0.4112	0.4100	0.4218
0	0	0	0	0.5	First	0.3672	0.3806	0.3902	0.3806
					Last	0.4524	0.4562	0.4644	0.4602
0	0	0	0.125	0.25	First	0.2036	0.2104	0.2036	0.2104
					Last	0.2352	0.2404	0.2384	0.2394
0	0	0.125	0.25	0.25	First	0.2562	0.2716	0.2640	0.2716
					Last	0.3142	0.3204	0.3070	0.3254
0	0.05	0.05	0.3	0.3	First	0.3004	0.3158	0.3018	0.3158
					Last	0.3728	0.3792	0.3738	0.3862
0.05	0.2	0.3	0.4	0.5	First	0.4302	0.4554	0.4524	0.4554
					Last	0.5224	0.5382	0.5260	0.5454
0	0	0	0.25	0.5	First	0.5056	0.5390	0.5358	0.5390
					Last	0.6180	0.6302	0.6226	0.6362
0	0	0	0.35	0.35	First	0.3894	0.4106	0.3896	0.4106
					Last	0.4856	0.4968	0.4726	0.5024
0	0	0.25	0.25	0.5	First	0.5074	0.5280	0.5140	0.5280
					Last	0.6170	0.6244	0.6166	0.6360
0	0.125	0.25	0.25	0.25	First	0.2052	0.2144	0.2110	0.2144
					Last	0.2412	0.2462	0.2430	0.2488
0	0.125	0.125	0.125	0.25	First	0.1632	0.1652	0.1656	0.1652
					Last	0.1938	0.1982	0.2028	0.1984
0	0.125	0.125	0.125	0.125	First	0.0950	0.0900	0.0872	0.0900
					Last	0.1058	0.1042	0.1048	0.1064
0.125	0.125	0.125	0.25	0.25	First	0.1290	0.1296	0.1312	0.1296
					Last	0.1508	0.1484	0.1414	0.1512
0	0	0	0.1	0.3	First	0.2376	0.2476	0.2514	0.2476
					Last	0.2844	0.2962	0.2942	0.2964
0	0	0	0.2	0.7	First	0.6616	0.6992	0.6920	0.6992
					Last	0.7770	0.7888	0.7918	0.7982
0	0.1	0.1	0.6	0.6	First	0.7180	0.7556	0.7336	0.7556
					Last	0.8344	0.8506	0.8330	0.8542
0	0.1	0.3	0.4	0.4	First	0.4306	0.4478	0.4368	0.4478
					Last	0.5342	0.5418	0.5248	0.5464
0	0.05	0.2	0.4	0.4	First	0.4402	0.4668	0.4468	0.4668
					Last	0.5502	0.5604	0.5408	0.5680

Table B.155. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0484	0.0452	0.0452	0.0452
					Last	0.0536	0.0542	0.0562	0.0538
0.05	0.15	0.25	0.35	0.45	First	0.6750	0.6948	0.6700	0.6948
					Last	0.8012	0.7982	0.7816	0.8054
0	0.025	0.075	0.175	0.375	First	0.5904	0.6110	0.5978	0.6110
					Last	0.7220	0.7206	0.7018	0.7276
0	0	0	0	0.5	First	0.5944	0.6256	0.6398	0.6256
					Last	0.7244	0.7416	0.7548	0.7482
0	0	0	0.125	0.25	First	0.3794	0.3998	0.3910	0.3998
					Last	0.4698	0.4812	0.4712	0.4858
0	0	0.125	0.25	0.25	First	0.4846	0.4966	0.4734	0.4966
					Last	0.5852	0.5898	0.5624	0.5982
0	0.05	0.05	0.3	0.3	First	0.5454	0.5698	0.5504	0.5698
					Last	0.6622	0.6808	0.6580	0.6838
0.05	0.2	0.3	0.4	0.5	First	0.7388	0.7596	0.7350	0.7596
					Last	0.8478	0.8498	0.8348	0.8554
0	0	0	0.25	0.5	First	0.7892	0.8116	0.7902	0.8116
					Last	0.9002	0.8986	0.8888	0.9038
0	0	0	0.35	0.35	First	0.6702	0.7018	0.6742	0.7018
					Last	0.7840	0.7996	0.7780	0.8090
0	0	0.25	0.25	0.5	First	0.8066	0.8300	0.8100	0.8300
					Last	0.9118	0.9152	0.9048	0.9188
0	0.125	0.25	0.25	0.25	First	0.3742	0.3972	0.3916	0.3972
					Last	0.4580	0.4626	0.4566	0.4726
0	0.125	0.125	0.125	0.25	First	0.2912	0.3132	0.3156	0.3132
					Last	0.3646	0.3694	0.3712	0.3774
0	0.125	0.125	0.125	0.125	First	0.1448	0.1524	0.1514	0.1524
					Last	0.1678	0.1684	0.1708	0.1716
0.125	0.125	0.125	0.25	0.25	First	0.2116	0.2180	0.2118	0.2180
					Last	0.2518	0.2590	0.2502	0.2604
0	0	0	0.1	0.3	First	0.4428	0.4702	0.4584	0.4702
					Last	0.5374	0.5496	0.5408	0.5584
0	0	0	0.2	0.7	First	0.9036	0.9158	0.9042	0.9158
					Last	0.9742	0.9720	0.9678	0.9744
0	0.1	0.1	0.6	0.6	First	0.9396	0.9532	0.9372	0.9532
					Last	0.9876	0.9902	0.9858	0.9904
0	0.1	0.3	0.4	0.4	First	0.7306	0.7532	0.7280	0.7532
					Last	0.8382	0.8422	0.8268	0.8502
0	0.05	0.2	0.4	0.4	First	0.7536	0.7836	0.7558	0.7836
					Last	0.8644	0.8698	0.8506	0.8758

Table B.156. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0510	0.0484	0.0472	0.0484
					Last	0.0500	0.0488	0.0468	0.0484
0.05	0.15	0.25	0.35	0.45	First	0.2874	0.3018	0.2932	0.3018
					Last	0.3408	0.3474	0.3460	0.3568
0	0.025	0.075	0.175	0.375	First	0.2464	0.2566	0.2562	0.2566
					Last	0.2996	0.3056	0.3034	0.3112
0	0	0	0	0.5	First	0.2846	0.3020	0.3048	0.3020
					Last	0.3434	0.3502	0.3602	0.3586
0	0	0	0.125	0.25	First	0.1784	0.1762	0.1772	0.1762
					Last	0.2096	0.2102	0.2022	0.2192
0	0	0.125	0.25	0.25	First	0.2118	0.2162	0.2096	0.2162
					Last	0.2482	0.2570	0.2456	0.2588
0	0.05	0.05	0.3	0.3	First	0.2340	0.2498	0.2404	0.2498
					Last	0.2860	0.2882	0.2766	0.2936
0.05	0.2	0.3	0.4	0.5	First	0.3172	0.3344	0.3220	0.3344
					Last	0.3888	0.3964	0.3914	0.4004
0	0	0	0.25	0.5	First	0.3738	0.4026	0.3888	0.4026
					Last	0.4616	0.4684	0.4614	0.4752
0	0	0	0.35	0.35	First	0.3020	0.3192	0.3080	0.3192
					Last	0.3654	0.3774	0.3638	0.3820
0	0	0.25	0.25	0.5	First	0.3712	0.3940	0.3932	0.3940
					Last	0.4544	0.4680	0.4622	0.4768
0	0.125	0.25	0.25	0.25	First	0.1718	0.1776	0.1736	0.1776
					Last	0.1994	0.1980	0.1956	0.2032
0	0.125	0.125	0.125	0.25	First	0.1436	0.1392	0.1404	0.1392
					Last	0.1590	0.1564	0.1588	0.1644
0	0.125	0.125	0.125	0.125	First	0.0780	0.0804	0.0826	0.0804
					Last	0.0898	0.0884	0.0900	0.0906
0.125	0.125	0.125	0.25	0.25	First	0.1130	0.1102	0.1092	0.1102
					Last	0.1266	0.1246	0.1218	0.1282
0	0	0	0.1	0.3	First	0.1932	0.1990	0.1996	0.1990
					Last	0.2224	0.2272	0.2300	0.2328
0	0	0	0.2	0.7	First	0.5212	0.5452	0.5458	0.5452
					Last	0.6364	0.6468	0.6494	0.6512
0	0.1	0.1	0.6	0.6	First	0.5528	0.5832	0.5656	0.5832
					Last	0.6736	0.6926	0.6744	0.6996
0	0.1	0.3	0.4	0.4	First	0.3286	0.3466	0.3350	0.3466
					Last	0.4064	0.4154	0.4036	0.4190
0	0.05	0.2	0.4	0.4	First	0.3384	0.3548	0.3462	0.3548
					Last	0.4118	0.4184	0.4016	0.4268

Table B.157. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0466	0.0526	0.0534	0.0526
					Last	0.0506	0.0510	0.0502	0.0534
0.05	0.15	0.25	0.35	0.45	First	0.3986	0.4262	0.4154	0.4262
					Last	0.4672	0.4790	0.4682	0.4874
0	0.025	0.075	0.175	0.375	First	0.3412	0.3694	0.3694	0.3694
					Last	0.4128	0.4268	0.4136	0.4424
0	0	0	0	0.5	First	0.3766	0.4272	0.4352	0.4272
					Last	0.4704	0.4834	0.4898	0.4916
0	0	0	0.125	0.25	First	0.2056	0.2290	0.2272	0.2290
					Last	0.2528	0.2506	0.2420	0.2586
0	0	0.125	0.25	0.25	First	0.2756	0.2972	0.2818	0.2972
					Last	0.3366	0.3366	0.3104	0.3424
0	0.05	0.05	0.3	0.3	First	0.3166	0.3558	0.3422	0.3558
					Last	0.3908	0.3924	0.3816	0.4064
0.05	0.2	0.3	0.4	0.5	First	0.4560	0.5004	0.4914	0.5004
					Last	0.5506	0.5684	0.5598	0.5764
0	0	0	0.25	0.5	First	0.5380	0.5798	0.5646	0.5798
					Last	0.6314	0.6470	0.6342	0.6628
0	0	0	0.35	0.35	First	0.4222	0.4626	0.4434	0.4626
					Last	0.5214	0.5364	0.5110	0.5418
0	0	0.25	0.25	0.5	First	0.5280	0.5732	0.5546	0.5732
					Last	0.6290	0.6438	0.6296	0.6532
0	0.125	0.25	0.25	0.25	First	0.2194	0.2380	0.2322	0.2380
					Last	0.2678	0.2726	0.2588	0.2782
0	0.125	0.125	0.125	0.25	First	0.1800	0.1940	0.1920	0.1940
					Last	0.2132	0.2176	0.2158	0.2222
0	0.125	0.125	0.125	0.125	First	0.0912	0.1038	0.1054	0.1038
					Last	0.1150	0.1142	0.1128	0.1184
0.125	0.125	0.125	0.25	0.25	First	0.1290	0.1472	0.1390	0.1472
					Last	0.1482	0.1452	0.1410	0.1532
0	0	0	0.1	0.3	First	0.2452	0.2704	0.2670	0.2704
					Last	0.2916	0.3026	0.3000	0.3116
0	0	0	0.2	0.7	First	0.7062	0.7602	0.7520	0.7602
					Last	0.8042	0.8248	0.8160	0.8328
0	0.1	0.1	0.6	0.6	First	0.7570	0.7984	0.7812	0.7984
					Last	0.8466	0.8648	0.8424	0.8698
0	0.1	0.3	0.4	0.4	First	0.4472	0.4882	0.4744	0.4882
					Last	0.5418	0.5522	0.5328	0.5652
0	0.05	0.2	0.4	0.4	First	0.4840	0.5294	0.4980	0.5294
					Last	0.5714	0.5810	0.5558	0.5984

Table B.158. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0438	0.0442	0.0464	0.0442
					Last	0.0490	0.0488	0.0466	0.0472
0.05	0.15	0.25	0.35	0.45	First	0.7252	0.7558	0.7320	0.7558
					Last	0.8188	0.8174	0.7960	0.8320
0	0.025	0.075	0.175	0.375	First	0.6408	0.6774	0.6580	0.6774
					Last	0.7368	0.7392	0.7194	0.7488
0	0	0	0	0.5	First	0.6500	0.6958	0.6962	0.6958
					Last	0.7464	0.7576	0.7632	0.7752
0	0	0	0.125	0.25	First	0.4016	0.4362	0.4312	0.4362
					Last	0.4910	0.4974	0.4832	0.5072
0	0	0.125	0.25	0.25	First	0.5170	0.5502	0.5242	0.5502
					Last	0.6130	0.6174	0.5890	0.6282
0	0.05	0.05	0.3	0.3	First	0.5736	0.6162	0.5896	0.6162
					Last	0.6788	0.6850	0.6602	0.7012
0.05	0.2	0.3	0.4	0.5	First	0.7768	0.8054	0.7870	0.8054
					Last	0.8590	0.8644	0.8484	0.8744
0	0	0	0.25	0.5	First	0.8450	0.8678	0.8434	0.8678
					Last	0.9176	0.9170	0.9012	0.9266
0	0	0	0.35	0.35	First	0.7238	0.7708	0.7428	0.7708
					Last	0.8176	0.8306	0.8026	0.8418
0	0	0.25	0.25	0.5	First	0.8564	0.8790	0.8580	0.8790
					Last	0.9268	0.9292	0.9178	0.9336
0	0.125	0.25	0.25	0.25	First	0.4042	0.4390	0.4276	0.4390
					Last	0.4824	0.4982	0.4806	0.5128
0	0.125	0.125	0.125	0.25	First	0.2956	0.3238	0.3378	0.3238
					Last	0.3630	0.3678	0.3728	0.3804
0	0.125	0.125	0.125	0.125	First	0.1414	0.1518	0.1480	0.1518
					Last	0.1732	0.1760	0.1736	0.1850
0.125	0.125	0.125	0.25	0.25	First	0.2206	0.2446	0.2342	0.2446
					Last	0.2562	0.2648	0.2484	0.2680
0	0	0	0.1	0.3	First	0.4578	0.4928	0.4876	0.4928
					Last	0.5582	0.5642	0.5498	0.5736
0	0	0	0.2	0.7	First	0.9374	0.9564	0.9498	0.9564
					Last	0.9794	0.9784	0.9760	0.9800
0	0.1	0.1	0.6	0.6	First	0.9640	0.9726	0.9648	0.9726
					Last	0.9884	0.9890	0.9834	0.9904
0	0.1	0.3	0.4	0.4	First	0.7758	0.8136	0.7844	0.8136
					Last	0.8636	0.8674	0.8454	0.8748
0	0.05	0.2	0.4	0.4	First	0.8090	0.8366	0.8116	0.8366
					Last	0.8932	0.8952	0.8750	0.9028

Table B.159. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0470	0.0512	0.0548	0.0512
					Last	0.0510	0.0516	0.0496	0.0510
0.05	0.15	0.25	0.35	0.45	First	0.3000	0.3382	0.3304	0.3382
					Last	0.3676	0.3796	0.3714	0.3894
0	0.025	0.075	0.175	0.375	First	0.2610	0.2842	0.2796	0.2842
					Last	0.3138	0.3174	0.3080	0.3312
0	0	0	0	0.5	First	0.2982	0.3284	0.3372	0.3284
					Last	0.3520	0.3626	0.3682	0.3716
0	0	0	0.125	0.25	First	0.1650	0.1850	0.1800	0.1850
					Last	0.2026	0.2050	0.1974	0.2108
0	0	0.125	0.25	0.25	First	0.2134	0.2404	0.2342	0.2404
					Last	0.2554	0.2652	0.2486	0.2714
0	0.05	0.05	0.3	0.3	First	0.2580	0.2812	0.2668	0.2812
					Last	0.3108	0.3086	0.2980	0.3166
0.05	0.2	0.3	0.4	0.5	First	0.3494	0.3798	0.3660	0.3798
					Last	0.4250	0.4352	0.4208	0.4396
0	0	0	0.25	0.5	First	0.4106	0.4472	0.4446	0.4472
					Last	0.4946	0.5006	0.4884	0.5094
0	0	0	0.35	0.35	First	0.3208	0.3594	0.3426	0.3594
					Last	0.3940	0.4092	0.3852	0.4148
0	0	0.25	0.25	0.5	First	0.4246	0.4560	0.4458	0.4560
					Last	0.5082	0.5142	0.5048	0.5324
0	0.125	0.25	0.25	0.25	First	0.1746	0.1956	0.1936	0.1956
					Last	0.2098	0.2104	0.2004	0.2164
0	0.125	0.125	0.125	0.25	First	0.1376	0.1510	0.1542	0.1510
					Last	0.1626	0.1642	0.1616	0.1696
0	0.125	0.125	0.125	0.125	First	0.0792	0.0856	0.0884	0.0856
					Last	0.0912	0.0942	0.0894	0.0956
0.125	0.125	0.125	0.25	0.25	First	0.1006	0.1102	0.1096	0.1102
					Last	0.1200	0.1196	0.1124	0.1240
0	0	0	0.1	0.3	First	0.1894	0.2052	0.2114	0.2052
					Last	0.2246	0.2320	0.2300	0.2370
0	0	0	0.2	0.7	First	0.5588	0.6068	0.6036	0.6068
					Last	0.6586	0.6726	0.6666	0.6822
0	0.1	0.1	0.6	0.6	First	0.6126	0.6612	0.6344	0.6612
					Last	0.7052	0.7190	0.6968	0.7318
0	0.1	0.3	0.4	0.4	First	0.3458	0.3794	0.3688	0.3794
					Last	0.4100	0.4198	0.4062	0.4304
0	0.05	0.2	0.4	0.4	First	0.3682	0.4026	0.3796	0.4026
					Last	0.4466	0.4536	0.4276	0.4626

Table B.160. Normal, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0476	0.0466	0.0460	0.0466
					Last	0.0466	0.0424	0.0440	0.0438
0.05	0.15	0.25	0.35	0.45	First	0.4404	0.4738	0.4584	0.4738
					Last	0.5102	0.5036	0.4958	0.5168
0	0.025	0.075	0.175	0.375	First	0.3884	0.4122	0.4050	0.4122
					Last	0.4336	0.4230	0.4270	0.4432
0	0	0	0	0.5	First	0.4438	0.4636	0.4694	0.4636
					Last	0.4914	0.4846	0.5026	0.5056
0	0	0	0.125	0.25	First	0.2410	0.2456	0.2374	0.2456
					Last	0.2710	0.2664	0.2634	0.2696
0	0	0.125	0.25	0.25	First	0.2940	0.3138	0.3014	0.3138
					Last	0.3386	0.3366	0.3298	0.3408
0	0.05	0.05	0.3	0.3	First	0.3574	0.3798	0.3608	0.3798
					Last	0.4028	0.3968	0.3862	0.4084
0.05	0.2	0.3	0.4	0.5	First	0.5058	0.5312	0.5182	0.5312
					Last	0.5698	0.5632	0.5628	0.5846
0	0	0	0.25	0.5	First	0.5812	0.6256	0.6090	0.6256
					Last	0.6542	0.6572	0.6534	0.6740
0	0	0	0.35	0.35	First	0.4624	0.4926	0.4676	0.4926
					Last	0.5278	0.5286	0.5122	0.5392
0	0	0.25	0.25	0.5	First	0.6004	0.6390	0.6216	0.6390
					Last	0.6568	0.6590	0.6520	0.6776
0	0.125	0.25	0.25	0.25	First	0.2272	0.2436	0.2432	0.2436
					Last	0.2676	0.2642	0.2660	0.2680
0	0.125	0.125	0.125	0.25	First	0.1880	0.1958	0.1944	0.1958
					Last	0.2202	0.2098	0.2164	0.2234
0	0.125	0.125	0.125	0.125	First	0.0970	0.1024	0.0998	0.1024
					Last	0.1146	0.1046	0.1090	0.1156
0.125	0.125	0.125	0.25	0.25	First	0.1470	0.1466	0.1442	0.1466
					Last	0.1568	0.1514	0.1510	0.1597
0	0	0	0.1	0.3	First	0.2916	0.3002	0.2920	0.3002
					Last	0.3292	0.3204	0.3208	0.3302
0	0	0	0.2	0.7	First	0.7606	0.8052	0.7930	0.8052
					Last	0.8284	0.8376	0.8394	0.8466
0	0.1	0.1	0.6	0.6	First	0.8046	0.8424	0.8170	0.8424
					Last	0.8614	0.8658	0.8530	0.8796
0	0.1	0.3	0.4	0.4	First	0.4968	0.5374	0.5156	0.5374
					Last	0.5612	0.5652	0.5564	0.5860
0	0.05	0.2	0.4	0.4	First	0.5426	0.5754	0.5528	0.5754
					Last	0.6098	0.6108	0.5912	0.6226

Table B.161. Exponential, 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0538	0.0558	0.0532	0.0558
					Last	0.0522	0.0482	0.0492	0.0512
0.05	0.15	0.25	0.35	0.45	First	0.7696	0.7980	0.7782	0.7980
					Last	0.8268	0.8180	0.8090	0.8386
0	0.025	0.075	0.175	0.375	First	0.7046	0.7250	0.7074	0.7250
					Last	0.7662	0.7522	0.7446	0.7742
0	0	0	0	0.5	First	0.6856	0.7196	0.7288	0.7196
					Last	0.7588	0.7576	0.7730	0.7738
0	0	0	0.125	0.25	First	0.4546	0.4732	0.4600	0.4732
					Last	0.5162	0.5118	0.5028	0.5238
0	0	0.125	0.25	0.25	First	0.5880	0.6118	0.5766	0.6118
					Last	0.6484	0.6380	0.6166	0.6586
0	0.05	0.05	0.3	0.3	First	0.6602	0.6888	0.6590	0.6888
					Last	0.7192	0.7162	0.7006	0.7384
0.05	0.2	0.3	0.4	0.5	First	0.8316	0.8518	0.8310	0.8518
					Last	0.8842	0.8790	0.8672	0.8898
0	0	0	0.25	0.5	First	0.8830	0.9020	0.8846	0.9020
					Last	0.9310	0.9304	0.9214	0.9358
0	0	0	0.35	0.35	First	0.7802	0.8162	0.7874	0.8162
					Last	0.8412	0.8428	0.8260	0.8608
0	0	0.25	0.25	0.5	First	0.8930	0.9118	0.8922	0.9118
					Last	0.9308	0.9276	0.9214	0.9380
0	0.125	0.25	0.25	0.25	First	0.4584	0.4820	0.4702	0.4820
					Last	0.5196	0.5096	0.5072	0.5256
0	0.125	0.125	0.125	0.25	First	0.3444	0.3588	0.3572	0.3588
					Last	0.3920	0.3768	0.3876	0.3930
0	0.125	0.125	0.125	0.125	First	0.1592	0.1660	0.1648	0.1660
					Last	0.1738	0.1634	0.1648	0.1766
0.125	0.125	0.125	0.25	0.25	First	0.2354	0.2508	0.2444	0.2508
					Last	0.2682	0.2638	0.2566	0.2710
0	0	0	0.1	0.3	First	0.5150	0.5428	0.5346	0.5428
					Last	0.5732	0.5700	0.5688	0.5894
0	0	0	0.2	0.7	First	0.9580	0.9660	0.9602	0.9660
					Last	0.9832	0.9792	0.9768	0.9834
0	0.1	0.1	0.6	0.6	First	0.9796	0.9860	0.9828	0.9860
					Last	0.9898	0.9902	0.9892	0.9926
0	0.1	0.3	0.4	0.4	First	0.8166	0.8410	0.8132	0.8410
					Last	0.8612	0.8656	0.8512	0.8772
0	0.05	0.2	0.4	0.4	First	0.8536	0.8722	0.8406	0.8722
					Last	0.9006	0.8988	0.8802	0.9106

Table B.162. T with 3 d.f., 5 Treatments - 3 Missing for BIBD, CBD = 30, BIBD = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo
0	0	0	0	0	First	0.0464	0.0496	0.0522	0.0496
					Last	0.0504	0.0440	0.0442	0.0482
0.05	0.15	0.25	0.35	0.45	First	0.3382	0.3588	0.3470	0.3588
					Last	0.3736	0.3666	0.3670	0.3814
0	0.025	0.075	0.175	0.375	First	0.3004	0.3170	0.3070	0.3170
					Last	0.3470	0.3326	0.3364	0.3480
0	0	0	0	0.5	First	0.3302	0.3476	0.3536	0.3476
					Last	0.3786	0.3626	0.3778	0.3782
0	0	0	0.125	0.25	First	0.1854	0.1920	0.1862	0.1920
					Last	0.2136	0.2036	0.2044	0.2173
0	0	0.125	0.25	0.25	First	0.2398	0.2472	0.2346	0.2472
					Last	0.2712	0.2648	0.2564	0.2769
0	0.05	0.05	0.3	0.3	First	0.2754	0.2948	0.2808	0.2948
					Last	0.3146	0.3090	0.3038	0.3168
0.05	0.2	0.3	0.4	0.5	First	0.3944	0.4182	0.4052	0.4182
					Last	0.4358	0.4340	0.4312	0.4494
0	0	0	0.25	0.5	First	0.4420	0.4632	0.4538	0.4632
					Last	0.4890	0.4890	0.4880	0.5094
0	0	0	0.35	0.35	First	0.3570	0.3826	0.3606	0.3826
					Last	0.3994	0.3934	0.3776	0.4072
0	0	0.25	0.25	0.5	First	0.4468	0.4808	0.4694	0.4808
					Last	0.4954	0.4976	0.4932	0.5186
0	0.125	0.25	0.25	0.25	First	0.1938	0.2066	0.2032	0.2066
					Last	0.2202	0.2132	0.2132	0.2230
0	0.125	0.125	0.125	0.25	First	0.1504	0.1572	0.1540	0.1572
					Last	0.1664	0.1598	0.1646	0.1673
0	0.125	0.125	0.125	0.125	First	0.0932	0.0914	0.0974	0.0914
					Last	0.1038	0.0970	0.1016	0.1072
0.125	0.125	0.125	0.25	0.25	First	0.1260	0.1340	0.1314	0.1340
					Last	0.1434	0.1334	0.1360	0.1484
0	0	0	0.1	0.3	First	0.2110	0.2186	0.2114	0.2186
					Last	0.2418	0.2330	0.2308	0.2496
0	0	0	0.2	0.7	First	0.6022	0.6390	0.6332	0.6390
					Last	0.6698	0.6702	0.6730	0.6884
0	0.1	0.1	0.6	0.6	First	0.6548	0.6912	0.6610	0.6912
					Last	0.7250	0.7250	0.7104	0.7446
0	0.1	0.3	0.4	0.4	First	0.4004	0.4164	0.3976	0.4164
					Last	0.4462	0.4432	0.4326	0.4534
0	0.05	0.2	0.4	0.4	First	0.4110	0.4360	0.4210	0.4360
					Last	0.4662	0.4630	0.4526	0.4764

APPENDIX C. ALVO TABLES

Table C.1. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0502	0.0420	0.0564	0.0420	0.0478
			Last	0.0400	0.0438	0.0494	0.0478	
0	0	0.5	First	0.2112	0.1888	0.2218	0.1888	0.2234
			Last	0.1916	0.2056	0.2200	0.2234	
0	0.5	0.5	First	0.2056	0.1818	0.2190	0.1818	0.2240
			Last	0.1868	0.2014	0.2182	0.2240	
0.05	0.25	0.5	First	0.1842	0.1636	0.1894	0.1636	0.1970
			Last	0.1652	0.1792	0.1906	0.1970	
0	0.3	0.5	First	0.2098	0.1806	0.2132	0.1806	0.2194
			Last	0.1912	0.1976	0.2142	0.2194	
0	0	1	First	0.4718	0.4618	0.5082	0.4618	0.5190
			Last	0.4618	0.4976	0.5164	0.5190	
0	1	1	First	0.4778	0.4552	0.5052	0.4552	0.5212
			Last	0.4586	0.4984	0.5146	0.5212	
0	0.5	1	First	0.4994	0.4736	0.5134	0.4736	0.5389
			Last	0.4884	0.5114	0.5342	0.5389	
0.5	0.5	1	First	0.2058	0.1870	0.2224	0.1870	0.2232
			Last	0.1872	0.2058	0.2192	0.2232	
0.5	1	1	First	0.2074	0.1808	0.2146	0.1808	0.2094
			Last	0.1838	0.1948	0.2078	0.2094	
0.1	0.5	1	First	0.4274	0.4026	0.4398	0.4026	0.4698
			Last	0.4126	0.4422	0.4608	0.4698	
0.1	0.3	0.7	First	0.2644	0.2372	0.2722	0.2372	0.2796
			Last	0.2396	0.2574	0.2748	0.2796	
0.2	0.5	0.8	First	0.2614	0.2284	0.2636	0.2284	0.2808
			Last	0.2422	0.2506	0.2688	0.2808	
0	0.25	0.5	First	0.2064	0.1828	0.2130	0.1828	0.2238
			Last	0.1934	0.2048	0.2198	0.2238	
0	0.1	0.8	First	0.3578	0.3336	0.3736	0.3336	0.3828
			Last	0.3396	0.3604	0.3790	0.3828	

Table C.2. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0532	0.0428	0.0556	0.0428	0.0538
			Last	0.0456	0.0492	0.0556	0.0538	
0	0	0.5	First	0.3156	0.2938	0.3356	0.2938	0.3504
			Last	0.2924	0.3206	0.3424	0.3504	
0	0.5	0.5	First	0.3088	0.2924	0.3338	0.2924	0.3390
			Last	0.2920	0.3154	0.3306	0.3390	
0.05	0.25	0.5	First	0.3062	0.2786	0.3130	0.2786	0.3206
			Last	0.2846	0.3008	0.3134	0.3206	
0	0.3	0.5	First	0.3554	0.3246	0.3560	0.3246	0.3764
			Last	0.3376	0.3548	0.3680	0.3764	
0	0	1	First	0.6276	0.6222	0.6700	0.6222	0.6786
			Last	0.6154	0.6572	0.6750	0.6786	
0	1	1	First	0.6294	0.6288	0.6718	0.6288	0.6914
			Last	0.6182	0.6614	0.6820	0.6914	
0	0.5	1	First	0.7078	0.6834	0.6948	0.6834	0.7366
			Last	0.7042	0.7192	0.7196	0.7366	
0.5	0.5	1	First	0.3156	0.2902	0.3400	0.2902	0.3438
			Last	0.2918	0.3126	0.3368	0.3438	
0.5	1	1	First	0.3238	0.2980	0.3418	0.2980	0.3480
			Last	0.3036	0.3286	0.3442	0.3480	
0.1	0.5	1	First	0.6508	0.6130	0.6316	0.6130	0.6682
			Last	0.6372	0.6480	0.6540	0.6682	
0.1	0.3	0.7	First	0.4254	0.3946	0.4330	0.3946	0.4422
			Last	0.4124	0.4228	0.4368	0.4422	
0.2	0.5	0.8	First	0.4316	0.4030	0.4284	0.4030	0.4518
			Last	0.4172	0.4328	0.4414	0.4518	
0	0.25	0.5	First	0.3528	0.3188	0.3544	0.3188	0.3674
			Last	0.3330	0.3472	0.3626	0.3674	
0	0.1	0.8	First	0.5586	0.5306	0.5578	0.5306	0.5870
			Last	0.5372	0.5616	0.5734	0.5870	

Table C.3. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0532	0.0388	0.0518	0.0388	0.0516
			Last	0.0444	0.0456	0.0536	0.0516	
0	0	0.5	First	0.1698	0.1486	0.1758	0.1486	0.1758
			Last	0.1552	0.1610	0.1732	0.1758	
0	0.5	0.5	First	0.1760	0.1524	0.1772	0.1524	0.1826
			Last	0.1530	0.1642	0.1796	0.1826	
0.05	0.25	0.5	First	0.1652	0.1462	0.1710	0.1462	0.1728
			Last	0.1500	0.1626	0.1704	0.1728	
0	0.3	0.5	First	0.1792	0.1520	0.1760	0.1520	0.1898
			Last	0.1540	0.1646	0.1800	0.1898	
0	0	1	First	0.3610	0.3416	0.3836	0.3416	0.3966
			Last	0.3396	0.3704	0.3922	0.3966	
0	1	1	First	0.3668	0.3472	0.3890	0.3472	0.3992
			Last	0.3490	0.3734	0.3940	0.3992	
0	0.5	1	First	0.3642	0.3352	0.3730	0.3352	0.3862
			Last	0.3456	0.3664	0.3820	0.3862	
0.5	0.5	1	First	0.1640	0.1428	0.1668	0.1428	0.1744
			Last	0.1462	0.1582	0.1692	0.1744	
0.5	1	1	First	0.1750	0.1534	0.1860	0.1534	0.1804
			Last	0.1482	0.1632	0.1726	0.1804	
0.1	0.5	1	First	0.3296	0.3026	0.3382	0.3026	0.3452
			Last	0.3090	0.3230	0.3442	0.3452	
0.1	0.3	0.7	First	0.2164	0.1896	0.2200	0.1896	0.2226
			Last	0.1928	0.2046	0.2204	0.2226	
0.2	0.5	0.8	First	0.2036	0.1772	0.2060	0.1772	0.2096
			Last	0.1822	0.1942	0.2062	0.2096	
0	0.25	0.5	First	0.1694	0.1436	0.1720	0.1436	0.1812
			Last	0.1506	0.1604	0.1736	0.1812	
0	0.1	0.8	First	0.2834	0.2568	0.2918	0.2568	0.2988
			Last	0.2586	0.2786	0.2930	0.2988	

Table C.4. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0514	0.0540	0.0504	0.0540	0.0526
			Last	0.0642	0.0662	0.0566	0.0526	
0	0	0.5	First	0.2344	0.2554	0.2486	0.2554	0.2560
			Last	0.2780	0.2970	0.2612	0.2560	
0	0.5	0.5	First	0.2388	0.2654	0.2592	0.2654	0.2624
			Last	0.2788	0.3026	0.2720	0.2624	
0.05	0.25	0.5	First	0.2088	0.2282	0.2218	0.2282	0.2260
			Last	0.2428	0.2632	0.2336	0.2260	
0	0.3	0.5	First	0.2334	0.2528	0.2444	0.2528	0.2514
			Last	0.2724	0.2876	0.2600	0.2514	
0	0	1	First	0.5660	0.6128	0.5922	0.6128	0.6078
			Last	0.6202	0.6514	0.6074	0.6078	
0	1	1	First	0.5726	0.6220	0.6046	0.6220	0.6200
			Last	0.6258	0.6576	0.6240	0.6200	
0	0.5	1	First	0.5842	0.6272	0.6000	0.6272	0.6270
			Last	0.6334	0.6614	0.6102	0.6270	
0.5	0.5	1	First	0.2412	0.2684	0.2518	0.2684	0.2646
			Last	0.2832	0.3012	0.2674	0.2646	
0.5	1	1	First	0.2416	0.2672	0.2554	0.2672	0.2652
			Last	0.2806	0.2972	0.2706	0.2652	
0.1	0.5	1	First	0.5134	0.5564	0.5390	0.5564	0.5532
			Last	0.5668	0.5984	0.5558	0.5532	
0.1	0.3	0.7	First	0.3062	0.3262	0.3090	0.3262	0.3240
			Last	0.3486	0.3680	0.3242	0.3240	
0.2	0.5	0.8	First	0.3024	0.3302	0.3198	0.3302	0.3258
			Last	0.3456	0.3696	0.3362	0.3258	
0	0.25	0.5	First	0.2310	0.2454	0.2358	0.2454	0.2402
			Last	0.2660	0.2792	0.2484	0.2402	
0	0.1	0.8	First	0.4206	0.4628	0.4514	0.4628	0.4600
			Last	0.4712	0.5028	0.4650	0.4600	

Table C.5. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0460	0.0506	0.0492	0.0506	0.0504
			Last	0.0626	0.0624	0.0540	0.0504	
0	0	0.5	First	0.3786	0.4146	0.4016	0.4146	0.4124
			Last	0.4236	0.4554	0.4134	0.4124	
0	0.5	0.5	First	0.3848	0.4168	0.4016	0.4168	0.4128
			Last	0.4322	0.4538	0.4160	0.4128	
0.05	0.25	0.5	First	0.3628	0.3866	0.3614	0.3866	0.3836
			Last	0.4092	0.4262	0.3776	0.3836	
0	0.3	0.5	First	0.4184	0.4482	0.4226	0.4482	0.4426
			Last	0.4734	0.4886	0.4392	0.4426	
0	0	1	First	0.7266	0.7744	0.7578	0.7744	0.7722
			Last	0.7744	0.8040	0.7702	0.7722	
0	1	1	First	0.7310	0.7770	0.7654	0.7770	0.7750
			Last	0.7762	0.8066	0.7778	0.7750	
0	0.5	1	First	0.8146	0.8272	0.7926	0.8272	0.8250
			Last	0.8486	0.8530	0.8038	0.8250	
0.5	0.5	1	First	0.3644	0.4040	0.3914	0.4040	0.4014
			Last	0.4136	0.4408	0.4082	0.4014	
0.5	1	1	First	0.3824	0.4118	0.3888	0.4118	0.4076
			Last	0.4310	0.4540	0.4070	0.4076	
0.1	0.5	1	First	0.7510	0.7750	0.7394	0.7750	0.7724
			Last	0.7930	0.8060	0.7528	0.7724	
0.1	0.3	0.7	First	0.5116	0.5416	0.5066	0.5416	0.5378
			Last	0.5594	0.5800	0.5260	0.5378	
0.2	0.5	0.8	First	0.5048	0.5366	0.5048	0.5366	0.5350
			Last	0.5590	0.5778	0.5184	0.5350	
0	0.25	0.5	First	0.4156	0.4422	0.4172	0.4422	0.4374
			Last	0.4670	0.4828	0.4344	0.4374	
0	0.1	0.8	First	0.6416	0.6814	0.6546	0.6814	0.6782
			Last	0.6954	0.7160	0.6716	0.6782	

Table C.6. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0490	0.0550	0.0536	0.0550	0.0548
			Last	0.0632	0.0652	0.0572	0.0548	
0	0	0.5	First	0.1912	0.2074	0.1970	0.2074	0.2068
			Last	0.2252	0.2412	0.2148	0.2068	
0	0.5	0.5	First	0.1800	0.2012	0.2000	0.2012	0.2000
			Last	0.2124	0.2314	0.2108	0.2000	
0.05	0.25	0.5	First	0.1680	0.1850	0.1808	0.1850	0.1826
			Last	0.2020	0.2170	0.1914	0.1826	
0	0.3	0.5	First	0.1734	0.1952	0.1912	0.1952	0.1922
			Last	0.2120	0.2236	0.1968	0.1922	
0	0	1	First	0.4272	0.4696	0.4632	0.4696	0.4652
			Last	0.4824	0.5134	0.4724	0.4652	
0	1	1	First	0.4212	0.4650	0.4514	0.4650	0.4622
			Last	0.4750	0.5054	0.4712	0.4622	
0	0.5	1	First	0.4418	0.4780	0.4524	0.4780	0.4748
			Last	0.4890	0.5148	0.4684	0.4748	
0.5	0.5	1	First	0.1842	0.1980	0.1906	0.1980	0.1974
			Last	0.2176	0.2270	0.2072	0.1974	
0.5	1	1	First	0.1894	0.2050	0.1986	0.2050	0.2038
			Last	0.2240	0.2340	0.2100	0.2038	
0.1	0.5	1	First	0.3924	0.4266	0.4112	0.4266	0.4240
			Last	0.4456	0.4670	0.4256	0.4240	
0.1	0.3	0.7	First	0.2320	0.2526	0.2378	0.2526	0.2490
			Last	0.2680	0.2846	0.2536	0.2490	
0.2	0.5	0.8	First	0.2396	0.2606	0.2500	0.2606	0.2548
			Last	0.2758	0.2926	0.2638	0.2548	
0	0.25	0.5	First	0.1830	0.2084	0.2000	0.2084	0.2050
			Last	0.2118	0.2340	0.2110	0.2050	
0	0.1	0.8	First	0.3146	0.3478	0.3460	0.3478	0.3474
			Last	0.3636	0.3950	0.3618	0.3474	

Table C.7. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0480	0.0566	0.0544	0.0566	0.0556
			Last	0.0448	0.0562	0.0582	0.0556	
0	0	0.5	First	0.2550	0.3054	0.2830	0.3054	0.2856
			Last	0.2460	0.2956	0.2996	0.2856	
0	0.5	0.5	First	0.2484	0.3024	0.2804	0.3024	0.2824
			Last	0.2404	0.2906	0.2956	0.2824	
0.05	0.25	0.5	First	0.2378	0.2792	0.2596	0.2792	0.2626
			Last	0.2280	0.2716	0.2728	0.2626	
0	0.3	0.5	First	0.2534	0.3018	0.2834	0.3018	0.2864
			Last	0.2424	0.2964	0.2986	0.2864	
0	0	1	First	0.6260	0.6992	0.6804	0.6992	0.6848
			Last	0.6156	0.6890	0.6954	0.6848	
0	1	1	First	0.6208	0.6918	0.6732	0.6918	0.6854
			Last	0.6104	0.6878	0.6846	0.6854	
0	0.5	1	First	0.6636	0.7186	0.6940	0.7186	0.7120
			Last	0.6540	0.7168	0.7090	0.7120	
0.5	0.5	1	First	0.2520	0.3084	0.2842	0.3084	0.2856
			Last	0.2428	0.2928	0.3008	0.2856	
0.5	1	1	First	0.2376	0.2952	0.2738	0.2952	0.2710
			Last	0.2290	0.2804	0.2924	0.2710	
0.1	0.5	1	First	0.5598	0.6168	0.5898	0.6168	0.6130
			Last	0.5484	0.6106	0.6040	0.6130	
0.1	0.3	0.7	First	0.3298	0.3872	0.3618	0.3872	0.3672
			Last	0.3196	0.3802	0.3814	0.3672	
0.2	0.5	0.8	First	0.3236	0.3792	0.3604	0.3792	0.3636
			Last	0.3132	0.3724	0.3752	0.3636	
0	0.25	0.5	First	0.2592	0.3112	0.2860	0.3112	0.2890
			Last	0.2508	0.3000	0.3030	0.2890	
0	0.1	0.8	First	0.4722	0.5344	0.5186	0.5344	0.5250
			Last	0.4592	0.5302	0.5322	0.5250	

Table C.8. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0446	0.0510	0.0516	0.0510	0.0498
			Last	0.0418	0.0506	0.0598	0.0498	
0	0	0.5	First	0.4064	0.4750	0.4506	0.4750	0.4552
			Last	0.3944	0.4600	0.4700	0.4552	
0	0.5	0.5	First	0.4148	0.4878	0.4634	0.4878	0.4652
			Last	0.4056	0.4760	0.4822	0.4652	
0.05	0.25	0.5	First	0.3956	0.4340	0.4134	0.4340	0.4262
			Last	0.3854	0.4300	0.4286	0.4262	
0	0.3	0.5	First	0.4518	0.4920	0.4638	0.4920	0.4802
			Last	0.4386	0.4884	0.4820	0.4802	
0	0	1	First	0.7986	0.8560	0.8418	0.8560	0.8490
			Last	0.7924	0.8534	0.8494	0.8490	
0	1	1	First	0.7822	0.8448	0.8318	0.8448	0.8378
			Last	0.7726	0.8402	0.8424	0.8378	
0	0.5	1	First	0.8742	0.8982	0.8748	0.8982	0.8958
			Last	0.8678	0.8974	0.8822	0.8958	
0.5	0.5	1	First	0.4052	0.4772	0.4554	0.4772	0.4588
			Last	0.3952	0.4706	0.4706	0.4588	
0.5	1	1	First	0.4192	0.4804	0.4632	0.4804	0.4604
			Last	0.4090	0.4704	0.4770	0.4604	
0.1	0.5	1	First	0.8182	0.8554	0.8168	0.8554	0.8470
			Last	0.8102	0.8504	0.8286	0.8470	
0.1	0.3	0.7	First	0.5630	0.6124	0.5812	0.6124	0.6036
			Last	0.5524	0.6120	0.5972	0.6036	
0.2	0.5	0.8	First	0.5650	0.6106	0.5734	0.6106	0.6054
			Last	0.5538	0.6082	0.5902	0.6054	
0	0.25	0.5	First	0.4596	0.5024	0.4794	0.5024	0.4912
			Last	0.4494	0.5002	0.4958	0.4912	
0	0.1	0.8	First	0.7098	0.7660	0.7402	0.7660	0.7612
			Last	0.7004	0.7614	0.7536	0.7612	

Table C.9. T-with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 6, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0466	0.0538	0.0514	0.0538	0.0492
			Last	0.0436	0.0530	0.0556	0.0492	
0	0	0.5	First	0.1952	0.2292	0.2142	0.2292	0.2212
			Last	0.1858	0.2252	0.2280	0.2212	
0	0.5	0.5	First	0.1950	0.2376	0.2236	0.2376	0.2206
			Last	0.1856	0.2278	0.2392	0.2206	
0.05	0.25	0.5	First	0.1756	0.2166	0.1972	0.2166	0.2006
			Last	0.1710	0.2070	0.2110	0.2006	
0	0.3	0.5	First	0.2036	0.2352	0.2230	0.2352	0.2248
			Last	0.1912	0.2332	0.2334	0.2248	
0	0	1	First	0.4634	0.5370	0.5196	0.5370	0.5226
			Last	0.4532	0.5336	0.5364	0.5226	
0	1	1	First	0.4686	0.5366	0.5230	0.5366	0.5262
			Last	0.4584	0.5336	0.5362	0.5262	
0	0.5	1	First	0.4822	0.5436	0.5224	0.5436	0.5296
			Last	0.4728	0.5402	0.5370	0.5296	
0.5	0.5	1	First	0.2040	0.2494	0.2284	0.2494	0.2240
			Last	0.1948	0.2304	0.2428	0.2240	
0.5	1	1	First	0.1882	0.2252	0.2160	0.2252	0.2128
			Last	0.1810	0.2242	0.2314	0.2128	
0.1	0.5	1	First	0.4248	0.4894	0.4654	0.4894	0.4686
			Last	0.4126	0.4754	0.4816	0.4686	
0.1	0.3	0.7	First	0.2428	0.2902	0.2716	0.2902	0.2716
			Last	0.2332	0.2824	0.2858	0.2716	
0.2	0.5	0.8	First	0.2462	0.2924	0.2672	0.2924	0.2726
			Last	0.2376	0.2834	0.2842	0.2726	
0	0.25	0.5	First	0.1894	0.2364	0.2180	0.2364	0.2146
			Last	0.1816	0.2246	0.2316	0.2146	
0	0.1	0.8	First	0.3500	0.4081	0.3860	0.4081	0.3906
			Last	0.3398	0.4010	0.4020	0.3906	

Table C.10. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0450	0.0512	0.0506	0.0512	0.0524
			Last	0.0570	0.0530	0.0504	0.0524	
0	0	0.5	First	0.2478	0.2876	0.2806	0.2876	0.3044
			Last	0.3198	0.3032	0.2954	0.3044	
0	0.5	0.5	First	0.2526	0.2918	0.2774	0.2918	0.3082
			Last	0.3282	0.3054	0.2964	0.3082	
0.05	0.25	0.5	First	0.2166	0.2438	0.2346	0.2438	0.2662
			Last	0.2820	0.2614	0.2532	0.2662	
0	0.3	0.5	First	0.2548	0.2900	0.2778	0.2900	0.3086
			Last	0.3236	0.3042	0.2924	0.3086	
0	0	1	First	0.6174	0.6752	0.6604	0.6752	0.7260
			Last	0.7288	0.7216	0.7036	0.7260	
0	1	1	First	0.6098	0.6640	0.6498	0.6640	0.7172
			Last	0.7186	0.7126	0.6974	0.7172	
0	0.5	1	First	0.6362	0.6868	0.6640	0.6868	0.7234
			Last	0.7406	0.7212	0.7026	0.7234	
0.5	0.5	1	First	0.2546	0.2890	0.2704	0.2890	0.3114
			Last	0.3278	0.3030	0.2914	0.3114	
0.5	1	1	First	0.2392	0.2822	0.2750	0.2822	0.2960
			Last	0.3122	0.2956	0.2886	0.2960	
0.1	0.5	1	First	0.5576	0.6074	0.5918	0.6074	0.6544
			Last	0.6628	0.6494	0.6310	0.6544	
0.1	0.3	0.7	First	0.3340	0.3738	0.3592	0.3738	0.4014
			Last	0.4168	0.3964	0.3826	0.4014	
0.2	0.5	0.8	First	0.3250	0.3646	0.3486	0.3646	0.3972
			Last	0.4170	0.3938	0.3794	0.3972	
0	0.25	0.5	First	0.2530	0.2918	0.2784	0.2918	0.3088
			Last	0.3178	0.3036	0.2948	0.3088	
0	0.1	0.8	First	0.4728	0.5240	0.5114	0.5240	0.5686
			Last	0.5788	0.5658	0.5550	0.5686	

Table C.11. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0434	0.0500	0.0464	0.0500	0.0500
			Last	0.0560	0.0470	0.0440	0.0500	
0	0	0.5	First	0.4070	0.4588	0.4448	0.4588	0.5006
			Last	0.5114	0.4922	0.4808	0.5006	
0	0.5	0.5	First	0.4216	0.4590	0.4448	0.4590	0.4994
			Last	0.5060	0.4930	0.4804	0.4994	
0.05	0.25	0.5	First	0.4084	0.4450	0.4194	0.4450	0.4782
			Last	0.4974	0.4718	0.4496	0.4782	
0	0.3	0.5	First	0.4472	0.4814	0.4546	0.4814	0.5204
			Last	0.5408	0.5172	0.4956	0.5204	
0	0	1	First	0.7918	0.8342	0.8262	0.8342	0.8740
			Last	0.8744	0.8690	0.8586	0.8740	
0	1	1	First	0.7772	0.8298	0.8202	0.8298	0.8694
			Last	0.8722	0.8682	0.8642	0.8694	
0	0.5	1	First	0.8668	0.8822	0.8580	0.8822	0.9180
			Last	0.9292	0.9160	0.8948	0.9180	
0.5	0.5	1	First	0.4190	0.4704	0.4506	0.4704	0.5032
			Last	0.5154	0.4966	0.4810	0.5032	
0.5	1	1	First	0.4172	0.4646	0.4460	0.4646	0.4974
			Last	0.5086	0.4962	0.4854	0.4974	
0.1	0.5	1	First	0.7964	0.8178	0.7934	0.8178	0.8554
			Last	0.8724	0.8526	0.8254	0.8554	
0.1	0.3	0.7	First	0.5522	0.5928	0.5680	0.5928	0.6366
			Last	0.6558	0.6300	0.6050	0.6366	
0.2	0.5	0.8	First	0.5562	0.5906	0.5574	0.5906	0.6370
			Last	0.6562	0.6322	0.6074	0.6370	
0	0.25	0.5	First	0.4568	0.4876	0.4664	0.4876	0.5342
			Last	0.5580	0.5282	0.5096	0.5342	
0	0.1	0.8	First	0.6954	0.7352	0.7120	0.7352	0.7836
			Last	0.7980	0.7784	0.7562	0.7836	

Table C.12. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0454	0.0522	0.0500	0.0522	0.0508
			Last	0.0572	0.0490	0.0464	0.0508	
0	0	0.5	First	0.1976	0.2354	0.2268	0.2354	0.2384
			Last	0.2518	0.2334	0.2246	0.2384	
0	0.5	0.5	First	0.1968	0.2318	0.2212	0.2318	0.2422
			Last	0.2540	0.2378	0.2274	0.2422	
0.05	0.25	0.5	First	0.1754	0.2038	0.1922	0.2038	0.2168
			Last	0.2344	0.2126	0.2054	0.2168	
0	0.3	0.5	First	0.1930	0.2236	0.2164	0.2236	0.2382
			Last	0.2532	0.2356	0.2288	0.2382	
0	0	1	First	0.4594	0.5196	0.4996	0.5196	0.5660
			Last	0.5678	0.5570	0.5412	0.5660	
0	1	1	First	0.4662	0.5118	0.4912	0.5118	0.5532
			Last	0.5636	0.5454	0.5344	0.5532	
0	0.5	1	First	0.4852	0.5354	0.5138	0.5354	0.5812
			Last	0.5934	0.5794	0.5560	0.5812	
0.5	0.5	1	First	0.1878	0.2296	0.2202	0.2296	0.2346
			Last	0.2468	0.2286	0.2230	0.2346	
0.5	1	1	First	0.1926	0.2270	0.2198	0.2270	0.2456
			Last	0.2530	0.2394	0.2314	0.2456	
0.1	0.5	1	First	0.4108	0.4604	0.4404	0.4604	0.4866
			Last	0.5034	0.4798	0.4634	0.4866	
0.1	0.3	0.7	First	0.2446	0.2870	0.2702	0.2870	0.3030
			Last	0.3128	0.2974	0.2846	0.3030	
0.2	0.5	0.8	First	0.2524	0.2864	0.2716	0.2864	0.3088
			Last	0.3212	0.3058	0.2914	0.3088	
0	0.25	0.5	First	0.1988	0.2290	0.2138	0.2290	0.2374
			Last	0.2564	0.2324	0.2232	0.2374	
0	0.1	0.8	First	0.3486	0.3914	0.3692	0.3914	0.4156
			Last	0.4314	0.4118	0.3956	0.4156	

Table C.13. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0612	0.0544	0.0556	0.0544	0.0522
			Last	0.0434	0.0462	0.0534	0.0522	
0	0	0.5	First	0.3464	0.3290	0.3244	0.3290	0.3568
			Last	0.2956	0.3082	0.3290	0.3568	
0	0.5	0.5	First	0.3268	0.3218	0.3160	0.3218	0.3340
			Last	0.2784	0.2948	0.3138	0.3340	
0.05	0.25	0.5	First	0.3016	0.2860	0.2804	0.2860	0.3130
			Last	0.2564	0.2624	0.2832	0.3130	
0	0.3	0.5	First	0.3368	0.3192	0.3154	0.3192	0.3300
			Last	0.2924	0.3026	0.3198	0.3300	
0	0	1	First	0.7540	0.7586	0.7508	0.7586	0.7736
			Last	0.7224	0.7460	0.7602	0.7736	
0	1	1	First	0.7618	0.7660	0.7492	0.7660	0.7718
			Last	0.7194	0.7438	0.7578	0.7718	
0	0.5	1	First	0.7662	0.7660	0.7468	0.7660	0.7768
			Last	0.7324	0.7504	0.7576	0.7768	
0.5	0.5	1	First	0.3340	0.3186	0.3126	0.3186	0.3256
			Last	0.2888	0.2980	0.3166	0.3256	
0.5	1	1	First	0.3496	0.3376	0.3326	0.3376	0.3588
			Last	0.2968	0.3096	0.3284	0.3588	
0.1	0.5	1	First	0.6958	0.6884	0.6720	0.6884	0.7026
			Last	0.6506	0.6710	0.6778	0.7026	
0.1	0.3	0.7	First	0.4260	0.4132	0.4044	0.4132	0.4306
			Last	0.3706	0.3888	0.4064	0.4306	
0.2	0.5	0.8	First	0.4124	0.4044	0.3896	0.4044	0.4220
			Last	0.3644	0.3830	0.3924	0.4220	
0	0.25	0.5	First	0.3386	0.3316	0.3230	0.3316	0.3444
			Last	0.2892	0.3058	0.3238	0.3444	
0	0.1	0.8	First	0.5940	0.5948	0.5822	0.5948	0.6088
			Last	0.5524	0.5724	0.5874	0.6088	

Table C.14. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0572	0.0512	0.0514	0.0512	0.0494
			Last	0.0392	0.0410	0.0470	0.0494	
0	0	0.5	First	0.5384	0.5346	0.5228	0.5346	0.5422
			Last	0.4858	0.5110	0.5312	0.5422	
0	0.5	0.5	First	0.5432	0.5344	0.5254	0.5344	0.5494
			Last	0.4970	0.5204	0.5396	0.5494	
0.05	0.25	0.5	First	0.5188	0.4948	0.4788	0.4948	0.5262
			Last	0.4662	0.4720	0.4792	0.5262	
0	0.3	0.5	First	0.5658	0.5584	0.5358	0.5584	0.5778
			Last	0.5210	0.5348	0.5406	0.5778	
0	0	1	First	0.8930	0.9056	0.8976	0.9056	0.9164
			Last	0.8790	0.9028	0.9064	0.9164	
0	1	1	First	0.8842	0.8988	0.8948	0.8988	0.9058
			Last	0.8624	0.8878	0.8992	0.9058	
0	0.5	1	First	0.9434	0.9400	0.9248	0.9400	0.9490
			Last	0.9322	0.9322	0.9258	0.9490	
0.5	0.5	1	First	0.5404	0.5334	0.5284	0.5334	0.5498
			Last	0.4826	0.5094	0.5320	0.5498	
0.5	1	1	First	0.5436	0.5294	0.5166	0.5294	0.5592
			Last	0.4884	0.5056	0.5128	0.5592	
0.1	0.5	1	First	0.8986	0.8936	0.8748	0.8936	0.9040
			Last	0.8852	0.8880	0.8838	0.9040	
0.1	0.3	0.7	First	0.6830	0.6624	0.6414	0.6624	0.6992
			Last	0.6390	0.6498	0.6544	0.6992	
0.2	0.5	0.8	First	0.6826	0.6686	0.6460	0.6686	0.6858
			Last	0.6490	0.6552	0.6544	0.6858	
0	0.25	0.5	First	0.5742	0.5576	0.5366	0.5576	0.5864
			Last	0.5236	0.5388	0.5408	0.5864	
0	0.1	0.8	First	0.8272	0.8192	0.8008	0.8192	0.8330
			Last	0.8006	0.8090	0.8098	0.8330	

Table C.15. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0594	0.0460	0.0482	0.0460	0.0466
			Last	0.0402	0.0406	0.0472	0.0466	
0	0	0.5	First	0.2544	0.2360	0.2314	0.2360	0.2674
			Last	0.2104	0.2162	0.2354	0.2674	
0	0.5	0.5	First	0.2636	0.2432	0.2414	0.2432	0.2662
			Last	0.2196	0.2254	0.2382	0.2662	
0.05	0.25	0.5	First	0.2340	0.2212	0.2178	0.2212	0.2412
			Last	0.1884	0.2002	0.2158	0.2412	
0	0.3	0.5	First	0.2706	0.2566	0.2574	0.2566	0.2890
			Last	0.2244	0.2340	0.2518	0.2890	
0	0	1	First	0.5824	0.5746	0.5656	0.5746	0.5854
			Last	0.5294	0.5592	0.5734	0.5854	
0	1	1	First	0.5902	0.5940	0.5834	0.5940	0.6054
			Last	0.5432	0.5676	0.5842	0.6054	
0	0.5	1	First	0.5978	0.5890	0.5758	0.5890	0.6094
			Last	0.5500	0.5704	0.5800	0.6094	
0.5	0.5	1	First	0.2628	0.2408	0.2382	0.2408	0.2726
			Last	0.2142	0.2202	0.2370	0.2726	
0.5	1	1	First	0.2644	0.2478	0.2446	0.2478	0.2836
			Last	0.2150	0.2298	0.2454	0.2836	
0.1	0.5	1	First	0.5394	0.5308	0.5210	0.5308	0.5452
			Last	0.4970	0.5174	0.5296	0.5452	
0.1	0.3	0.7	First	0.3184	0.3132	0.3092	0.3132	0.3226
			Last	0.2752	0.2878	0.2984	0.3226	
0.2	0.5	0.8	First	0.3398	0.3174	0.3128	0.3174	0.3484
			Last	0.2904	0.3040	0.3208	0.3484	
0	0.25	0.5	First	0.2630	0.2456	0.2396	0.2456	0.2650
			Last	0.2172	0.2200	0.2348	0.2650	
0	0.1	0.8	First	0.4594	0.4540	0.4440	0.4540	0.4684
			Last	0.4060	0.4260	0.4422	0.4684	

Table C.16. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0452	0.0530	0.0538	0.0530	0.0506
			Last	0.0508	0.0494	0.0436	0.0506	
0	0	0.5	First	0.3312	0.3616	0.3556	0.3616	0.3536
			Last	0.3414	0.3554	0.3390	0.3536	
0	0.5	0.5	First	0.3346	0.3620	0.3506	0.3620	0.3608
			Last	0.3452	0.3636	0.3360	0.3608	
0.05	0.25	0.5	First	0.2910	0.3170	0.3086	0.3170	0.3140
			Last	0.3004	0.3090	0.2914	0.3140	
0	0.3	0.5	First	0.3442	0.3672	0.3534	0.3672	0.3646
			Last	0.3496	0.3660	0.3398	0.3646	
0	0	1	First	0.7922	0.8272	0.8156	0.8272	0.8250
			Last	0.8040	0.8234	0.8018	0.8250	
0	1	1	First	0.7852	0.8290	0.8120	0.8290	0.8262
			Last	0.7988	0.8222	0.7960	0.8262	
0	0.5	1	First	0.8044	0.8448	0.8174	0.8448	0.8370
			Last	0.8122	0.8336	0.8018	0.8370	
0.5	0.5	1	First	0.3434	0.3778	0.3592	0.3778	0.3700
			Last	0.3532	0.3644	0.3396	0.3700	
0.5	1	1	First	0.3366	0.3704	0.3616	0.3704	0.3638
			Last	0.3506	0.3622	0.3404	0.3638	
0.1	0.5	1	First	0.7364	0.7692	0.7502	0.7692	0.7656
			Last	0.7414	0.7602	0.7366	0.7656	
0.1	0.3	0.7	First	0.4374	0.4694	0.4522	0.4694	0.4638
			Last	0.4454	0.4592	0.4268	0.4638	
0.2	0.5	0.8	First	0.4556	0.4912	0.4658	0.4912	0.4832
			Last	0.4642	0.4812	0.4502	0.4832	
0	0.25	0.5	First	0.3414	0.3862	0.3608	0.3862	0.3714
			Last	0.3568	0.3682	0.3412	0.3714	
0	0.1	0.8	First	0.6146	0.6598	0.6344	0.6598	0.6540
			Last	0.6294	0.6482	0.6168	0.6540	

Table C.17. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0466	0.0490	0.0482	0.0490	0.0442
			Last	0.0466	0.0444	0.0444	0.0442	
0	0	0.5	First	0.5572	0.6020	0.5856	0.6020	0.5956
			Last	0.5718	0.5966	0.5684	0.5956	
0	0.5	0.5	First	0.5618	0.5988	0.5796	0.5988	0.5954
			Last	0.5700	0.5928	0.5648	0.5954	
0.05	0.25	0.5	First	0.5464	0.5780	0.5398	0.5780	0.5700
			Last	0.5536	0.5638	0.5230	0.5700	
0	0.3	0.5	First	0.5970	0.6214	0.5948	0.6214	0.6194
			Last	0.6092	0.6152	0.5758	0.6194	
0	0	1	First	0.9222	0.9566	0.9378	0.9566	0.9468
			Last	0.9302	0.9442	0.9286	0.9468	
0	1	1	First	0.9124	0.9488	0.9372	0.488	0.9390
			Last	0.9134	0.9354	0.9294	0.9390	
0	0.5	1	First	0.9608	0.9752	0.9486	0.9752	0.9640
			Last	0.9648	0.9620	0.9432	0.9640	
0.5	0.5	1	First	0.5548	0.6148	0.5858	0.6148	0.6040
			Last	0.5736	0.6004	0.5648	0.6040	
0.5	1	1	First	0.5498	0.6024	0.5838	0.6024	0.5918
			Last	0.5672	0.5882	0.5620	0.5918	
0.1	0.5	1	First	0.9362	0.9576	0.9314	0.9576	0.9492
			Last	0.9418	0.9456	0.9244	0.9492	
0.1	0.3	0.7	First	0.7194	0.7408	0.7084	0.7408	0.7380
			Last	0.7298	0.7348	0.6930	0.7380	
0.2	0.5	0.8	First	0.7128	0.7454	0.7106	0.7454	0.7374
			Last	0.7246	0.7384	0.7012	0.7374	
0	0.25	0.5	First	0.5946	0.6272	0.5984	0.6272	0.6220
			Last	0.6044	0.6156	0.5772	0.6220	
0	0.1	0.8	First	0.8692	0.8904	0.8674	0.8904	0.8886
			Last	0.8790	0.8870	0.8614	0.8886	

Table C.18. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 12, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0472	0.0504	0.0524	0.0504	0.0508
			Last	0.0482	0.0522	0.0482	0.0508	
0	0	0.5	First	0.2512	0.2738	0.2656	0.2738	0.2690
			Last	0.2580	0.2674	0.2506	0.2690	
0	0.5	0.5	First	0.2600	0.2824	0.2736	0.2824	0.2770
			Last	0.2678	0.2778	0.2518	0.2770	
0.05	0.25	0.5	First	0.2232	0.2440	0.2332	0.2440	0.2412
			Last	0.2320	0.2420	0.2246	0.2412	
0	0.3	0.5	First	0.2608	0.2874	0.2764	0.2874	0.2810
			Last	0.2700	0.2832	0.2648	0.2810	
0	0	1	First	0.6184	0.6590	0.6338	0.6590	0.6558
			Last	0.6276	0.6496	0.6244	0.6558	
0	1	1	First	0.6190	0.6658	0.6376	0.6658	0.6572
			Last	0.6328	0.6498	0.6244	0.6572	
0	0.5	1	First	0.6508	0.6898	0.6628	0.6898	0.6820
			Last	0.6612	0.6766	0.6470	0.6820	
0.5	0.5	1	First	0.2532	0.2720	0.2672	0.2720	0.2688
			Last	0.2584	0.2684	0.2518	0.2688	
0.5	1	1	First	0.2530	0.2802	0.2648	0.2802	0.2752
			Last	0.2558	0.2680	0.2486	0.2752	
0.1	0.5	1	First	0.5572	0.6038	0.5792	0.6038	0.5954
			Last	0.5742	0.5914	0.5580	0.5954	
0.1	0.3	0.7	First	0.3338	0.3668	0.3524	0.3668	0.3572
			Last	0.3444	0.3556	0.3312	0.3572	
0.2	0.5	0.8	First	0.3304	0.3666	0.3388	0.3666	0.3564
			Last	0.3410	0.3508	0.3258	0.3564	
0	0.25	0.5	First	0.2676	0.2858	0.2754	0.2858	0.2822
			Last	0.2768	0.2822	0.2622	0.2822	
0	0.1	0.8	First	0.4758	0.5134	0.4958	0.5134	0.5072
			Last	0.4870	0.5040	0.4758	0.5072	

Table C.19. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0528	0.0494	0.0502	0.0494	0.0518
			Last	0.0630	0.0472	0.0510	0.0518	
0	0	0.5	First	0.3288	0.3470	0.3434	0.3470	0.3896
			Last	0.4112	0.3666	0.3698	0.3896	
0	0.5	0.5	First	0.3160	0.3322	0.3216	0.3322	0.3858
			Last	0.4118	0.3668	0.3680	0.3858	
0.05	0.25	0.5	First	0.2914	0.3010	0.2982	0.3010	0.3486
			Last	0.3780	0.3286	0.3284	0.3486	
0	0.3	0.5	First	0.3294	0.3484	0.3406	0.3484	0.3898
			Last	0.4280	0.3702	0.3660	0.3898	
0	0	1	First	0.7362	0.7680	0.7548	0.7680	0.8404
			Last	0.8488	0.8260	0.8258	0.8404	
0	1	1	First	0.7380	0.7702	0.7580	0.7702	0.8368
			Last	0.8498	0.8232	0.8258	0.8368	
0	0.5	1	First	0.7618	0.7898	0.7718	0.7898	0.8514
			Last	0.8564	0.8378	0.8344	0.8514	
0.5	0.5	1	First	0.3206	0.3384	0.3330	0.3384	0.3854
			Last	0.4126	0.3580	0.3608	0.3854	
0.5	1	1	First	0.3138	0.3378	0.3316	0.3378	0.3884
			Last	0.4166	0.3674	0.3670	0.3884	
0.1	0.5	1	First	0.6862	0.7150	0.6994	0.7150	0.7830
			Last	0.7984	0.7648	0.7614	0.7830	
0.1	0.3	0.7	First	0.4074	0.4306	0.4184	0.4306	0.4976
			Last	0.5250	0.4740	0.4732	0.4976	
0.2	0.5	0.8	First	0.4238	0.4418	0.4338	0.4418	0.5050
			Last	0.5354	0.4852	0.4796	0.5050	
0	0.25	0.5	First	0.3096	0.3328	0.3358	0.3328	0.3872
			Last	0.4142	0.3694	0.3714	0.3872	
0	0.1	0.8	First	0.5894	0.6230	0.6088	0.6230	0.6954
			Last	0.7162	0.6734	0.6716	0.6954	

Table C.20. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0552	0.0500	0.0520	0.0500	0.0534
			Last	0.0660	0.0482	0.0516	0.0534	
0	0	0.5	First	0.5164	0.5522	0.5330	0.5522	0.6184
			Last	0.6432	0.5964	0.5942	0.6184	
0	0.5	0.5	First	0.5140	0.5464	0.5358	0.5464	0.6190
			Last	0.6400	0.5952	0.5950	0.6190	
0.05	0.25	0.5	First	0.5002	0.5174	0.4974	0.5174	0.5832
			Last	0.6210	0.5564	0.5472	0.5832	
0	0.3	0.5	First	0.5546	0.5750	0.5612	0.5750	0.6526
			Last	0.6842	0.6306	0.6212	0.6526	
0	0	1	First	0.8968	0.9166	0.9072	0.9166	0.9598
			Last	0.9648	0.9542	0.9514	0.9598	
0	1	1	First	0.8812	0.9076	0.9008	0.9076	0.9470
			Last	0.9512	0.9384	0.9422	0.9470	
0	0.5	1	First	0.9424	0.9448	0.9230	0.9448	0.9730
			Last	0.9796	0.9716	0.9638	0.9730	
0.5	0.5	1	First	0.5088	0.5466	0.5352	0.5466	0.6210
			Last	0.6386	0.5940	0.5962	0.6210	
0.5	1	1	First	0.5150	0.5484	0.5452	0.5484	0.6158
			Last	0.6320	0.5950	0.5984	0.6158	
0.1	0.5	1	First	0.9014	0.9050	0.8782	0.9050	0.9488
			Last	0.9592	0.9434	0.9342	0.9488	
0.1	0.3	0.7	First	0.6648	0.6860	0.6598	0.6860	0.7612
			Last	0.7806	0.7424	0.7322	0.7612	
0.2	0.5	0.8	First	0.6562	0.6780	0.6520	0.6780	0.7528
			Last	0.7780	0.7326	0.7200	0.7528	
0	0.25	0.5	First	0.5674	0.5926	0.5700	0.5926	0.6648
			Last	0.6910	0.6426	0.6302	0.6648	
0	0.1	0.8	First	0.8160	0.8352	0.8186	0.8352	0.8954
			Last	0.9080	0.8840	0.8748	0.8954	

Table C.21. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 6

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0514	0.0498	0.0490	0.0498	0.0498
			Last	0.0638	0.0454	0.0482	0.0498	
0	0	0.5	First	0.2554	0.2606	0.2572	0.2606	0.2998
			Last	0.3298	0.2840	0.2834	0.2998	
0	0.5	0.5	First	0.2436	0.2560	0.2516	0.2560	0.2948
			Last	0.3248	0.2766	0.2738	0.2948	
0.05	0.25	0.5	First	0.2100	0.2178	0.2194	0.2178	0.2540
			Last	0.2768	0.2336	0.2412	0.2540	
0	0.3	0.5	First	0.2492	0.2616	0.2580	0.2616	0.2998
			Last	0.3292	0.2814	0.2848	0.2998	
0	0	1	First	0.5834	0.6136	0.5996	0.6136	0.6888
			Last	0.7094	0.6690	0.6654	0.6888	
0	1	1	First	0.5772	0.6080	0.6002	0.6080	0.6872
			Last	0.7092	0.6680	0.6640	0.6872	
0	0.5	1	First	0.5868	0.6110	0.5956	0.6110	0.6848
			Last	0.7104	0.6656	0.6636	0.6848	
0.5	0.5	1	First	0.2408	0.2514	0.2520	0.2514	0.2948
			Last	0.3134	0.2754	0.2790	0.2948	
0.5	1	1	First	0.2462	0.2614	0.2564	0.2614	0.2998
			Last	0.3306	0.2830	0.2840	0.2998	
0.1	0.5	1	First	0.5246	0.5500	0.5380	0.5500	0.6232
			Last	0.6514	0.5986	0.5958	0.6232	
0.1	0.3	0.7	First	0.3090	0.3212	0.3158	0.3212	0.3758
			Last	0.4002	0.3572	0.3576	0.3758	
0.2	0.5	0.8	First	0.3148	0.3294	0.3196	0.3294	0.3848
			Last	0.4136	0.3672	0.3622	0.3848	
0	0.25	0.5	First	0.2484	0.2562	0.2548	0.2562	0.2978
			Last	0.3240	0.2758	0.2772	0.2978	
0	0.1	0.8	First	0.4572	0.4766	0.4622	0.4766	0.5426
			Last	0.5648	0.5194	0.5144	0.5426	

Table C.22. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0494	0.0514	0.0516	0.0514	0.0526
			Last	0.0452	0.0548	0.0454	0.0526	
0	0	0.5	First	0.3700	0.3884	0.3814	0.3884	0.4196
			Last	0.3686	0.4204	0.3854	0.4196	
0	0.5	0.5	First	0.3568	0.3814	0.3750	0.3814	0.4100
			Last	0.3650	0.4108	0.3806	0.4100	
0.05	0.25	0.5	First	0.3238	0.3348	0.3256	0.3348	0.3638
			Last	0.3274	0.3688	0.3344	0.3638	
0	0.3	0.5	First	0.3656	0.3832	0.3760	0.3832	0.4154
			Last	0.3748	0.4188	0.3838	0.4154	
0	0	1	First	0.8306	0.8590	0.8484	0.8590	0.8864
			Last	0.8512	0.8866	0.8632	0.8864	
0	1	1	First	0.8236	0.8552	0.8562	0.8552	0.8834
			Last	0.8432	0.8894	0.8636	0.8834	
0	0.5	1	First	0.8360	0.8604	0.8516	0.8604	0.8860
			Last	0.8554	0.8966	0.8628	0.8860	
0.5	0.5	1	First	0.3634	0.3818	0.3744	0.3818	0.4088
			Last	0.3652	0.4090	0.3760	0.4088	
0.5	1	1	First	0.3692	0.3848	0.3778	0.3848	0.4188
			Last	0.3756	0.4218	0.3822	0.4188	
0.1	0.5	1	First	0.7524	0.7850	0.7722	0.7850	0.8198
			Last	0.7848	0.8206	0.7942	0.8198	
0.1	0.3	0.7	First	0.4580	0.4824	0.4732	0.4824	0.5244
			Last	0.4790	0.5268	0.4878	0.5244	
0.2	0.5	0.8	First	0.4818	0.5072	0.4912	0.5072	0.5386
			Last	0.4908	0.5420	0.4956	0.5386	
0	0.25	0.5	First	0.3776	0.3920	0.3848	0.3920	0.4234
			Last	0.3830	0.4298	0.3900	0.4234	
0	0.1	0.8	First	0.6728	0.6984	0.6940	0.6984	0.7412
			Last	0.6906	0.7506	0.7080	0.7412	

Table C.23. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0500	0.0516	0.0516	0.0516	0.0526
			Last	0.0460	0.0538	0.0458	0.0526	
0	0	0.5	First	0.5994	0.6242	0.6160	0.6242	0.6702
			Last	0.6116	0.6794	0.6304	0.6702	
0	0.5	0.5	First	0.5952	0.6200	0.6232	0.6200	0.6610
			Last	0.6096	0.6720	0.6278	0.6610	
0.05	0.25	0.5	First	0.5608	0.5808	0.5606	0.5808	0.6166
			Last	0.5812	0.6216	0.5742	0.6166	
0	0.3	0.5	First	0.6412	0.6620	0.6420	0.6620	0.6932
			Last	0.6604	0.6996	0.6476	0.6932	
0	0	1	First	0.9490	0.9630	0.9568	0.9630	0.9778
			Last	0.9670	0.9817	0.9680	0.9778	
0	1	1	First	0.9404	0.9590	0.9506	0.9590	0.9674
			Last	0.9468	0.9762	0.9614	0.9674	
0	0.5	1	First	0.9726	0.9760	0.9692	0.9760	0.9848
			Last	0.9800	0.9890	0.9740	0.9848	
0.5	0.5	1	First	0.5878	0.6200	0.6134	0.6200	0.6542
			Last	0.6050	0.6594	0.6210	0.6542	
0.5	1	1	First	0.6000	0.6306	0.6262	0.6306	0.6658
			Last	0.6114	0.6722	0.6346	0.6658	
0.1	0.5	1	First	0.9492	0.9552	0.9406	0.9552	0.9696
			Last	0.9642	0.9704	0.9532	0.9696	
0.1	0.3	0.7	First	0.7496	0.7728	0.7488	0.7728	0.8022
			Last	0.7696	0.8140	0.7604	0.8022	
0.2	0.5	0.8	First	0.7616	0.7746	0.7522	0.7746	0.8104
			Last	0.7854	0.8090	0.7660	0.8104	
0	0.25	0.5	First	0.6398	0.6588	0.6388	0.6588	0.6972
			Last	0.6654	0.7008	0.6520	0.6972	
0	0.1	0.8	First	0.8944	0.9068	0.8936	0.9068	0.9274
			Last	0.9078	0.9290	0.9060	0.9274	

Table C.24. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 12

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0470	0.0506	0.0516	0.0506	0.0518
			Last	0.0426	0.0522	0.0448	0.0518	
0	0	0.5	First	0.2666	0.2798	0.2812	0.2798	0.3130
			Last	0.2772	0.3284	0.2858	0.3130	
0	0.5	0.5	First	0.2746	0.2886	0.2848	0.2886	0.3104
			Last	0.2800	0.3228	0.2808	0.3104	
0.05	0.25	0.5	First	0.2450	0.2604	0.2582	0.2604	0.2846
			Last	0.2522	0.2910	0.2564	0.2846	
0	0.3	0.5	First	0.2900	0.3002	0.3008	0.3002	0.3324
			Last	0.2996	0.3392	0.2950	0.3324	
0	0	1	First	0.6590	0.6912	0.6768	0.6912	0.7318
			Last	0.6866	0.7408	0.6974	0.7318	
0	1	1	First	0.6728	0.7032	0.6970	0.7032	0.7422
			Last	0.6858	0.7494	0.7090	0.7422	
0	0.5	1	First	0.6816	0.7068	0.6912	0.7068	0.7410
			Last	0.7054	0.7492	0.6992	0.7410	
0.5	0.5	1	First	0.2786	0.2958	0.2938	0.2958	0.3126
			Last	0.2796	0.3278	0.2884	0.3126	
0.5	1	1	First	0.2806	0.2888	0.2920	0.2888	0.3166
			Last	0.2746	0.3220	0.2888	0.3166	
0.1	0.5	1	First	0.6080	0.6296	0.6146	0.6296	0.6644
			Last	0.6248	0.6746	0.6236	0.6644	
0.1	0.3	0.7	First	0.3666	0.3866	0.3830	0.3866	0.4198
			Last	0.3726	0.4294	0.3854	0.4198	
0.2	0.5	0.8	First	0.3568	0.3730	0.3594	0.3730	0.3990
			Last	0.3622	0.4006	0.3644	0.3990	
0	0.25	0.5	First	0.2838	0.2946	0.2842	0.2946	0.3088
			Last	0.2722	0.3122	0.2844	0.3088	
0	0.1	0.8	First	0.5156	0.5384	0.5314	0.5384	0.5732
			Last	0.5256	0.5789	0.5388	0.5732	

Table C.25. Normal, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0558	0.0572	0.0522	0.0572	0.0528
			Last	0.0572	0.0476	0.0524	0.0528	
0	0	0.5	First	0.4158	0.4558	0.4342	0.4558	0.4494
			Last	0.4234	0.4152	0.4472	0.4494	
0	0.5	0.5	First	0.4130	0.4532	0.4188	0.4532	0.4416
			Last	0.4174	0.4026	0.4346	0.4416	
0.05	0.25	0.5	First	0.3846	0.4074	0.3726	0.4074	0.3960
			Last	0.3834	0.3594	0.3802	0.3960	
0	0.3	0.5	First	0.4272	0.4568	0.4230	0.4568	0.4508
			Last	0.4290	0.4142	0.4426	0.4508	
0	0	1	First	0.8738	0.9014	0.8840	0.9014	0.9056
			Last	0.8838	0.8838	0.8920	0.9056	
0	1	1	First	0.8722	0.9174	0.8900	0.9174	0.9062
			Last	0.8886	0.8888	0.9000	0.9062	
0	0.5	1	First	0.8870	0.9234	0.8944	0.9234	0.9156
			Last	0.8966	0.8968	0.9054	0.9156	
0.5	0.5	1	First	0.4180	0.4608	0.4296	0.4608	0.4508
			Last	0.4240	0.4152	0.4408	0.4508	
0.5	1	1	First	0.4196	0.4550	0.4152	0.4550	0.4392
			Last	0.4250	0.4080	0.4274	0.4392	
0.1	0.5	1	First	0.8172	0.8616	0.8250	0.8616	0.8526
			Last	0.8318	0.8320	0.8450	0.8526	
0.1	0.3	0.7	First	0.5368	0.5758	0.5464	0.5758	0.5738
			Last	0.5478	0.5348	0.5614	0.5738	
0.2	0.5	0.8	First	0.5352	0.5726	0.5436	0.5726	0.5680
			Last	0.5486	0.5372	0.5652	0.5680	
0	0.25	0.5	First	0.4236	0.4516	0.4238	0.4516	0.4456
			Last	0.4292	0.4162	0.4414	0.4456	
0	0.1	0.8	First	0.7384	0.7822	0.7524	0.7822	0.7740
			Last	0.7492	0.7426	0.7590	0.7740	

Table C.26. Exponential, 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0526	0.0540	0.0482	0.0540	0.0510
			Last	0.0520	0.0454	0.0516	0.0510	
0	0	0.5	First	0.6730	0.7231	0.6812	0.7231	0.7110
			Last	0.6904	0.6784	0.6964	0.7110	
0	0.5	0.5	First	0.6598	0.7116	0.6706	0.7116	0.7010
			Last	0.6746	0.6672	0.6908	0.7010	
0.05	0.25	0.5	First	0.6536	0.6758	0.6300	0.6758	0.6680
			Last	0.6618	0.6314	0.6372	0.6680	
0	0.3	0.5	First	0.7076	0.7404	0.6974	0.7404	0.7310
			Last	0.7170	0.6992	0.7104	0.7310	
0	0	1	First	0.9698	0.9890	0.9760	0.9890	0.9828
			Last	0.9780	0.9782	0.9812	0.9828	
0	1	1	First	0.9668	0.9878	0.9772	0.9878	0.9816
			Last	0.9692	0.9754	0.9804	0.9816	
0	0.5	1	First	0.9868	0.9982	0.9838	0.9982	0.9912
			Last	0.9894	0.9876	0.9856	0.9912	
0.5	0.5	1	First	0.6668	0.7126	0.6776	0.7126	0.7088
			Last	0.6826	0.6742	0.6974	0.7088	
0.5	1	1	First	0.6588	0.7072	0.6634	0.7072	0.6978
			Last	0.6676	0.6634	0.6784	0.6978	
0.1	0.5	1	First	0.9730	0.9898	0.9664	0.9898	0.9802
			Last	0.9756	0.9750	0.9718	0.9802	
0.1	0.3	0.7	First	0.8112	0.8432	0.8052	0.8432	0.8356
			Last	0.8234	0.8100	0.8146	0.8356	
0.2	0.5	0.8	First	0.8084	0.8412	0.7936	0.8412	0.8314
			Last	0.8270	0.8100	0.8102	0.8314	
0	0.25	0.5	First	0.7114	0.7392	0.6888	0.7392	0.7300
			Last	0.7196	0.6978	0.7058	0.7300	
0	0.1	0.8	First	0.9298	0.9546	0.9236	0.9546	0.9466
			Last	0.9410	0.9358	0.9344	0.9466	

Table C.27. T with 3 d.f., 3 Treatments - 1 Missing for BIBD, RCBD = 18, BIBD = 18

μ_1	μ_2	μ_3	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	First	0.0520	0.0574	0.0526	0.0574	0.0506
			Last	0.0510	0.0434	0.0510	0.0506	
0	0	0.5	First	0.3262	0.3512	0.3256	0.3512	0.3428
			Last	0.3306	0.3092	0.3350	0.3428	
0	0.5	0.5	First	0.3244	0.3544	0.3332	0.3544	0.3446
			Last	0.3242	0.3088	0.3372	0.3446	
0.05	0.25	0.5	First	0.2810	0.3042	0.2802	0.3042	0.2940
			Last	0.2798	0.2644	0.2854	0.2940	
0	0.3	0.5	First	0.3294	0.3484	0.3146	0.3484	0.3416
			Last	0.3266	0.3140	0.3324	0.3416	
0	0	1	First	0.7314	0.7844	0.7442	0.7844	0.7736
			Last	0.7496	0.7454	0.7654	0.7736	
0	1	1	First	0.7254	0.7693	0.7338	0.7693	0.7606
			Last	0.7374	0.7318	0.7562	0.7606	
0	0.5	1	First	0.7370	0.7758	0.7404	0.7758	0.7712
			Last	0.7468	0.7410	0.7566	0.7712	
0.5	0.5	1	First	0.3208	0.3512	0.3262	0.3512	0.3360
			Last	0.3242	0.3014	0.3296	0.3360	
0.5	1	1	First	0.3164	0.3400	0.3192	0.3400	0.3312
			Last	0.3246	0.3048	0.3338	0.3312	
0.1	0.5	1	First	0.6700	0.7170	0.6794	0.7170	0.7074
			Last	0.6872	0.6744	0.6902	0.7074	
0.1	0.3	0.7	First	0.4056	0.4414	0.4042	0.4414	0.4304
			Last	0.4158	0.3934	0.4150	0.4304	
0.2	0.5	0.8	First	0.3958	0.4336	0.4002	0.4336	0.4246
			Last	0.4074	0.3906	0.4174	0.4246	
0	0.25	0.5	First	0.3338	0.3532	0.3236	0.3532	0.3448
			Last	0.3350	0.3120	0.3342	0.3448	
0	0.1	0.8	First	0.5834	0.6274	0.5868	0.6274	0.6176
			Last	0.5942	0.5850	0.6022	0.6176	

Table C.28. Normal, 4 Treatments, RCBD = 6, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0498	0.0486	0.0474	0.0486	0.0512
				Last	0.0456	0.0440	0.0452	0.0512	
0	0.1	0.2	0.3	First	0.1460	0.1530	0.1490	0.1530	0.1632
				Last	0.1388	0.1448	0.1458	0.1632	
0	0	0.25	0.25	First	0.1504	0.1596	0.1572	0.1596	0.1622
				Last	0.1458	0.1552	0.1526	0.1622	
0	0.125	0.25	0.25	First	0.1292	0.1346	0.1324	0.1346	0.1446
				Last	0.1232	0.1264	0.1306	0.1446	
0	0	0	0.5	First	0.2294	0.2404	0.2376	0.2404	0.2486
				Last	0.2252	0.2360	0.2398	0.2486	
0.05	0.1	0.3	0.5	First	0.2334	0.2522	0.2448	0.2522	0.2644
				Last	0.2380	0.2530	0.2480	0.2644	
0	0	0.5	0.5	First	0.3400	0.3656	0.3476	0.3656	0.3788
				Last	0.3398	0.3598	0.3506	0.3788	
0	0.25	0.5	0.5	First	0.2732	0.2964	0.2900	0.2964	0.3020
				Last	0.2758	0.2882	0.2954	0.3020	
0	0.25	0.5	0.5	First	0.5026	0.5260	0.5162	0.5260	0.5708
				Last	0.5360	0.5566	0.5642	0.5708	
0	0.25	0.25	0.5	First	0.2338	0.2484	0.2520	0.2484	0.2586
				Last	0.2230	0.2362	0.2388	0.2586	
0	0.25	0.25	0.25	First	0.1052	0.1102	0.1138	0.1102	0.1250
				Last	0.1010	0.1058	0.1146	0.1250	
0.1	0.2	0.6	1	First	0.5940	0.6252	0.5986	0.6252	0.6416
				Last	0.6004	0.6210	0.6076	0.6416	
0.25	0.25	0.5	0.5	First	0.1504	0.1560	0.1498	0.1560	0.1698
				Last	0.1460	0.1500	0.1442	0.1698	
0	0.1	0.3	0.7	First	0.4044	0.4328	0.4212	0.4328	0.4478
				Last	0.4018	0.4236	0.4220	0.4478	
0	0.05	0.15	0.35	First	0.1778	0.1804	0.1736	0.1804	0.1960
				Last	0.1732	0.1764	0.1746	0.1860	
0	0.15	0.2	0.5	First	0.2466	0.2562	0.2510	0.2562	0.2608
				Last	0.2422	0.2470	0.2538	0.2608	
0	0	0.1	0.6	First	0.3178	0.3396	0.3274	0.3396	0.3490
				Last	0.3140	0.3270	0.3284	0.3490	
0	0	0.05	0.3	First	0.1474	0.1546	0.1534	0.1546	0.1600
				Last	0.1448	0.1484	0.1514	0.1600	

Table C.29. Exponential, 4 Treatments, RCBD = 6, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0520	0.0526	0.0522	0.0526	0.0548
				Last	0.0492	0.0470	0.0500	0.0548	
0	0.1	0.2	0.3	First	0.2594	0.2752	0.2668	0.2752	0.2894
				Last	0.2554	0.2710	0.2736	0.2894	
0	0	0.25	0.25	First	0.2460	0.2592	0.2488	0.2592	0.2708
				Last	0.2450	0.2580	0.2490	0.2708	
0	0.125	0.25	0.25	First	0.2096	0.2254	0.2190	0.2254	0.2336
				Last	0.2028	0.2206	0.2202	0.2336	
0	0	0	0.5	First	0.3688	0.3894	0.3798	0.3894	0.3990
				Last	0.3636	0.3814	0.3894	0.3990	
0.05	0.1	0.3	0.5	First	0.4304	0.4438	0.4202	0.4438	0.4546
				Last	0.4302	0.4388	0.4204	0.4546	
0	0	0.5	0.5	First	0.5302	0.5714	0.5478	0.5714	0.5958
				Last	0.5468	0.5684	0.5508	0.5958	
0	0.25	0.5	0.5	First	0.4698	0.4930	0.4804	0.4930	0.5202
				Last	0.4764	0.4978	0.4834	0.5202	
0	0.25	0.5	0.5	First	0.7384	0.7608	0.7356	0.7608	0.8018
				Last	0.7828	0.7916	0.7842	0.8018	
0	0.25	0.25	0.5	First	0.3944	0.4128	0.4076	0.4128	0.4324
				Last	0.3966	0.4090	0.4104	0.4324	
0	0.25	0.25	0.25	First	0.1760	0.1838	0.1850	0.1838	0.1920
				Last	0.1696	0.1758	0.1838	0.1920	
0.1	0.2	0.6	1	First	0.8436	0.8540	0.8246	0.8540	0.8716
				Last	0.8550	0.8584	0.8342	0.8716	
0.25	0.25	0.5	0.5	First	0.2382	0.2582	0.2500	0.2582	0.2692
				Last	0.2328	0.2500	0.2494	0.2692	
0	0.1	0.3	0.7	First	0.6508	0.6684	0.6398	0.6684	0.6952
				Last	0.6706	0.6712	0.6532	0.6952	
0	0.05	0.15	0.35	First	0.3072	0.3196	0.3002	0.3196	0.3320
				Last	0.3062	0.3138	0.3112	0.3320	
0	0.15	0.2	0.5	First	0.4282	0.4480	0.4280	0.4480	0.4596
				Last	0.4298	0.4392	0.4332	0.4596	
0	0	0.1	0.6	First	0.5186	0.5372	0.5100	0.5374	0.5532
				Last	0.5262	0.5352	0.5276	0.5532	
0	0	0.05	0.3	First	0.2270	0.2390	0.2344	0.2390	0.2470
				Last	0.2226	0.2342	0.2320	0.2470	

Table C.30. T with 3 d.f., 4 Treatments, RCBD = 6, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0504	0.0517	0.0538	0.0517	0.0532
				Last	0.0464	0.0482	0.0494	0.0532	
0	0.1	0.2	0.3	First	0.1246	0.1274	0.1258	0.1274	0.1356
				Last	0.1142	0.1194	0.1250	0.1356	
0	0	0.25	0.25	First	0.1218	0.1264	0.1224	0.1264	0.1380
				Last	0.1126	0.1178	0.1194	0.1380	
0	0.125	0.25	0.25	First	0.1122	0.1176	0.1162	0.1176	0.1250
				Last	0.1024	0.1060	0.1084	0.1250	
0	0	0	0.5	First	0.1780	0.1886	0.1838	0.1886	0.1956
				Last	0.1776	0.1806	0.1830	0.1956	
0.05	0.1	0.3	0.5	First	0.1916	0.1976	0.1880	0.1976	0.2022
				Last	0.1882	0.1918	0.1862	0.2022	
0	0	0.5	0.5	First	0.2546	0.2788	0.2648	0.2788	0.2894
				Last	0.2548	0.2718	0.2714	0.2894	
0	0.25	0.5	0.5	First	0.2234	0.2354	0.2286	0.2354	0.2444
				Last	0.2190	0.2310	0.2282	0.2444	
0	0.25	0.5	0.5	First	0.3740	0.3996	0.3904	0.3996	0.4356
				Last	0.4064	0.4260	0.4270	0.4356	
0	0.25	0.25	0.5	First	0.1846	0.1924	0.1894	0.1924	0.2058
				Last	0.1766	0.1858	0.1894	0.2058	
0	0.25	0.25	0.25	First	0.1000	0.1054	0.1100	0.1054	0.1150
				Last	0.0970	0.0980	0.1032	0.1150	
0.1	0.2	0.6	1	First	0.4396	0.4668	0.4452	0.4668	0.4894
				Last	0.4472	0.4672	0.4610	0.4894	
0.25	0.25	0.5	0.5	First	0.1310	0.1328	0.1306	0.1328	0.1370
				Last	0.1230	0.1266	0.1274	0.1370	
0	0.1	0.3	0.7	First	0.3004	0.3226	0.3166	0.3226	0.3390
				Last	0.3014	0.3208	0.3284	0.3390	
0	0.05	0.15	0.35	First	0.1400	0.1448	0.1488	0.1448	0.1526
				Last	0.1366	0.1422	0.1502	0.1526	
0	0.15	0.2	0.5	First	0.2010	0.2010	0.2006	0.2010	0.2156
				Last	0.2036	0.2052	0.2060	0.2156	
0	0	0.1	0.6	First	0.2406	0.2532	0.2408	0.2532	0.2606
				Last	0.2416	0.2430	0.2412	0.2606	
0	0	0.05	0.3	First	0.1256	0.1244	0.1226	0.1244	0.1268
				Last	0.1140	0.1200	0.1220	0.1268	

Table C.31. Normal, 4 Treatments, RCBD = 6, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0518	0.0524	0.0524	0.0524	0.0502
				Last	0.0564	0.0548	0.0510	0.0502	
0	0.1	0.2	0.3	First	0.1622	0.1788	0.1738	0.1788	0.1822
				Last	0.1768	0.1931	0.1672	0.1822	
0	0	0.25	0.25	First	0.1560	0.1700	0.1598	0.1700	0.1726
				Last	0.1678	0.1812	0.1560	0.1726	
0	0.125	0.25	0.25	First	0.1516	0.1548	0.1490	0.1548	0.1516
				Last	0.1562	0.1610	0.1490	0.1516	
0	0	0	0.5	First	0.2466	0.2712	0.2668	0.2712	0.2700
				Last	0.2604	0.2788	0.2572	0.2700	
0.05	0.1	0.3	0.5	First	0.2694	0.2962	0.2846	0.2962	0.2952
				Last	0.2852	0.3086	0.2820	0.2952	
0	0	0.5	0.5	First	0.3694	0.3984	0.3782	0.3984	0.3988
				Last	0.3852	0.4096	0.3712	0.3988	
0	0.25	0.5	0.5	First	0.3052	0.3332	0.3190	0.3332	0.3364
				Last	0.3230	0.3442	0.3196	0.3364	
0	0.25	0.5	0.5	First	0.5388	0.5702	0.5584	0.5702	0.5874
				Last	0.5860	0.6074	0.5928	0.5874	
0	0.25	0.25	0.5	First	0.2586	0.2796	0.2728	0.2796	0.2814
				Last	0.2702	0.2878	0.2686	0.2814	
0	0.25	0.25	0.25	First	0.1190	0.1294	0.1288	0.1294	0.1272
				Last	0.1264	0.1332	0.1234	0.1272	
0.1	0.2	0.6	1	First	0.6468	0.6852	0.6618	0.6852	0.6920
				Last	0.6696	0.7026	0.6630	0.6920	
0.25	0.25	0.5	0.5	First	0.1480	0.1568	0.1544	0.1568	0.1576
				Last	0.1592	0.1644	0.1540	0.1576	
0	0.1	0.3	0.7	First	0.4460	0.4822	0.4640	0.4822	0.4844
				Last	0.4622	0.4990	0.4598	0.4844	
0	0.05	0.15	0.35	First	0.1828	0.1944	0.1872	0.1944	0.1950
				Last	0.1948	0.2040	0.1946	0.1950	
0	0.15	0.2	0.5	First	0.2686	0.2910	0.2882	0.2910	0.2924
				Last	0.2842	0.2966	0.2816	0.2924	
0	0	0.1	0.6	First	0.3368	0.3648	0.3532	0.3648	0.3672
				Last	0.3546	0.3704	0.3514	0.3672	
0	0	0.05	0.3	First	0.1532	0.1612	0.1574	0.1612	0.1652
				Last	0.1704	0.1702	0.1602	0.1652	

Table C.32. Exponential, 4 Treatments, RCBD = 6, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0516	0.0502	0.0504	0.0502	0.0504
				Last	0.0546	0.0554	0.0494	0.0504	
0	0.1	0.2	0.3	First	0.2822	0.3006	0.2894	0.3006	0.2990
				Last	0.2932	0.3012	0.2868	0.2990	
0	0	0.25	0.25	First	0.2796	0.3048	0.2844	0.3048	0.3040
				Last	0.2896	0.3097	0.2844	0.3040	
0	0.125	0.25	0.25	First	0.2442	0.2572	0.2472	0.2572	0.2538
				Last	0.2506	0.2612	0.2366	0.2538	
0	0	0	0.5	First	0.4190	0.4510	0.4444	0.4510	0.4570
				Last	0.4432	0.4613	0.4402	0.4570	
0.05	0.1	0.3	0.5	First	0.4932	0.5192	0.4886	0.5192	0.5250
				Last	0.5100	0.5326	0.4836	0.5250	
0	0	0.5	0.5	First	0.5828	0.6358	0.5998	0.6358	0.6444
				Last	0.6136	0.6556	0.6030	0.6444	
0	0.25	0.5	0.5	First	0.5212	0.5664	0.5412	0.5664	0.5694
				Last	0.5466	0.5726	0.5412	0.5694	
0	0.25	0.5	0.5	First	0.7802	0.8018	0.7816	0.8018	0.8150
				Last	0.8232	0.8322	0.8126	0.8150	
0	0.25	0.25	0.5	First	0.4468	0.4710	0.4524	0.4710	0.4722
				Last	0.4606	0.4852	0.4494	0.4722	
0	0.25	0.25	0.25	First	0.1836	0.1988	0.1972	0.1988	0.1992
				Last	0.1950	0.2068	0.2014	0.1992	
0.1	0.2	0.6	1	First	0.8908	0.9042	0.8728	0.9042	0.9088
				Last	0.8986	0.9144	0.8702	0.9088	
0.25	0.25	0.5	0.5	First	0.2682	0.2938	0.2792	0.2938	0.2950
				Last	0.2852	0.3090	0.2786	0.2950	
0	0.1	0.3	0.7	First	0.7154	0.7362	0.6940	0.7362	0.7418
				Last	0.7344	0.7494	0.6922	0.7418	
0	0.05	0.15	0.35	First	0.3246	0.3434	0.3242	0.3434	0.3424
				Last	0.3468	0.3517	0.3196	0.3424	
0	0.15	0.2	0.5	First	0.4578	0.4832	0.4692	0.4832	0.4872
				Last	0.4840	0.4928	0.4702	0.4872	
0	0	0.1	0.6	First	0.5600	0.5930	0.5764	0.5930	0.6002
				Last	0.5776	0.6062	0.5690	0.6002	
0	0	0.05	0.3	First	0.2484	0.2722	0.2636	0.2722	0.2760
				Last	0.2642	0.2848	0.2608	0.2760	

Table C.33. T with 3 d.f., 4 Treatments, RCBD = 6, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0516	0.0556	0.0560	0.0556	0.0560
				Last	0.0542	0.0554	0.0574	0.0560	
0	0.1	0.2	0.3	First	0.1194	0.1302	0.1268	0.1302	0.1310
				Last	0.1308	0.1428	0.1280	0.1310	
0	0	0.25	0.25	First	0.1336	0.1410	0.1336	0.1410	0.1432
				Last	0.1406	0.1560	0.1368	0.1432	
0	0.125	0.25	0.25	First	0.1144	0.1168	0.1158	0.1168	0.1202
				Last	0.1250	0.1264	0.1214	0.1202	
0	0	0	0.5	First	0.1992	0.2172	0.2142	0.2172	0.2220
				Last	0.2122	0.2338	0.2134	0.2220	
0.05	0.1	0.3	0.5	First	0.2010	0.2172	0.2102	0.2172	0.2232
				Last	0.2156	0.2326	0.2080	0.2232	
0	0	0.5	0.5	First	0.2760	0.2982	0.2810	0.2982	0.2954
				Last	0.2904	0.3048	0.2756	0.2954	
0	0.25	0.5	0.5	First	0.2398	0.2596	0.2506	0.2596	0.2592
				Last	0.2444	0.2676	0.2442	0.2592	
0	0.25	0.5	0.5	First	0.3970	0.4204	0.4122	0.4204	0.4362
				Last	0.4368	0.4616	0.4416	0.4362	
0	0.25	0.25	0.5	First	0.1926	0.2162	0.2194	0.2162	0.2208
				Last	0.2146	0.2330	0.2132	0.2208	
0	0.25	0.25	0.25	First	0.0996	0.1108	0.1124	0.1108	0.1124
				Last	0.1094	0.1252	0.1102	0.1124	
0.1	0.2	0.6	1	First	0.4966	0.5346	0.5184	0.5346	0.5368
				Last	0.5170	0.5462	0.5122	0.5368	
0.25	0.25	0.5	0.5	First	0.1352	0.1440	0.1348	0.1440	0.1436
				Last	0.1418	0.1538	0.1358	0.1436	
0	0.1	0.3	0.7	First	0.3498	0.3692	0.3498	0.3692	0.3692
				Last	0.3610	0.3774	0.3514	0.3692	
0	0.05	0.15	0.35	First	0.1530	0.1628	0.1600	0.1628	0.1646
				Last	0.1590	0.1776	0.1620	0.1646	
0	0.15	0.2	0.5	First	0.2046	0.2180	0.2124	0.2180	0.2184
				Last	0.2102	0.2252	0.2034	0.2184	
0	0	0.1	0.6	First	0.2684	0.2808	0.2732	0.2808	0.2834
				Last	0.2808	0.2968	0.2706	0.2834	
0	0	0.05	0.3	First	0.1298	0.1364	0.1380	0.1364	0.1376
				Last	0.1406	0.1440	0.1366	0.1376	

Table C.34. Normal, 4 Treatments, RCBD = 6, BIBD 1 = 18 and BIBD 2 = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0514	0.0498	0.0500	0.0498	0.0498
				Last	0.0510	0.0484	0.0492	0.0498	
0	0.1	0.2	0.3	First	0.2168	0.2354	0.2282	0.2354	0.2428
				Last	0.2272	0.2350	0.2248	0.2428	
0	0	0.25	0.25	First	0.2222	0.2420	0.2272	0.2420	0.2484
				Last	0.2304	0.2408	0.2288	0.2484	
0	0.125	0.25	0.25	First	0.1836	0.1968	0.1924	0.1968	0.2016
				Last	0.1880	0.1944	0.1922	0.2016	
0	0	0	0.5	First	0.3640	0.3882	0.3808	0.3882	0.3972
				Last	0.3808	0.3832	0.3766	0.3972	
0.05	0.1	0.3	0.5	First	0.3914	0.4188	0.4004	0.4188	0.4258
				Last	0.3924	0.4088	0.3962	0.4258	
0	0	0.5	0.5	First	0.5374	0.5694	0.5392	0.5694	0.5816
				Last	0.5494	0.5632	0.5326	0.5816	
0	0.25	0.5	0.5	First	0.4298	0.4638	0.4432	0.4638	0.4692
				Last	0.4418	0.4568	0.4462	0.4692	
0	0.25	0.5	0.5	First	0.7238	0.7538	0.7464	0.7538	0.8108
				Last	0.7654	0.7894	0.7820	0.8108	
0	0.25	0.25	0.5	First	0.3710	0.3912	0.3800	0.3912	0.4030
				Last	0.3770	0.3926	0.3774	0.4030	
0	0.25	0.25	0.25	First	0.1512	0.1576	0.1544	0.1576	0.1618
				Last	0.1570	0.1568	0.1550	0.1618	
0.1	0.2	0.6	1	First	0.8510	0.8766	0.8538	0.8766	0.8870
				Last	0.8608	0.8756	0.8538	0.8870	
0.25	0.25	0.5	0.5	First	0.2098	0.2246	0.2156	0.2246	0.2286
				Last	0.2146	0.2176	0.2112	0.2286	
0	0.1	0.3	0.7	First	0.6220	0.6590	0.6414	0.6590	0.6704
				Last	0.6454	0.6604	0.6468	0.6704	
0	0.05	0.15	0.35	First	0.2572	0.2708	0.2632	0.2708	0.2844
				Last	0.2630	0.2656	0.2564	0.2844	
0	0.15	0.2	0.5	First	0.3654	0.3970	0.3880	0.3970	0.4044
				Last	0.3710	0.3896	0.3864	0.4044	
0	0	0.1	0.6	First	0.4832	0.5176	0.5142	0.5176	0.5292
				Last	0.5022	0.5176	0.5078	0.5292	
0	0	0.05	0.3	First	0.1946	0.2056	0.2082	0.2056	0.2142
				Last	0.2008	0.2076	0.2018	0.2142	

Table C.35. Exponential, 4 Treatments, RCBD = 6, BIBD 1 = 18 and BIBD 2 = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0514	0.0516	0.0524	0.0516	0.0524
				Last	0.0538	0.0512	0.0530	0.0524	
0	0.1	0.2	0.3	First	0.3974	0.4152	0.4014	0.4152	0.4272
				Last	0.4030	0.4106	0.4006	0.4272	
0	0	0.25	0.25	First	0.3994	0.4226	0.3888	0.4226	0.4290
				Last	0.4074	0.4194	0.3886	0.4290	
0	0.125	0.25	0.25	First	0.3390	0.3562	0.3416	0.3562	0.3686
				Last	0.3440	0.3550	0.3406	0.3686	
0	0	0	0.5	First	0.5806	0.6226	0.6086	0.6226	0.6342
				Last	0.5954	0.6192	0.6078	0.6342	
0.05	0.1	0.3	0.5	First	0.6484	0.6822	0.6554	0.6822	0.6916
				Last	0.6592	0.6772	0.6548	0.6916	
0	0	0.5	0.5	First	0.7970	0.8348	0.7948	0.8348	0.8556
				Last	0.8096	0.8342	0.8000	0.8556	
0	0.25	0.5	0.5	First	0.7124	0.7436	0.7178	0.7436	0.7638
				Last	0.7322	0.7504	0.7262	0.7638	
0	0.25	0.5	0.5	First	0.9396	0.9480	0.9394	0.9480	0.9722
				Last	0.9592	0.9620	0.9574	0.9722	
0	0.25	0.25	0.5	First	0.6338	0.6662	0.6486	0.6662	0.6906
				Last	0.6426	0.6640	0.6538	0.6906	
0	0.25	0.25	0.25	First	0.2664	0.2848	0.2868	0.2848	0.2928
				Last	0.2724	0.2868	0.2864	0.2928	
0.1	0.2	0.6	1	First	0.9840	0.9870	0.9782	0.9870	0.9896
				Last	0.9832	0.9872	0.9794	0.9896	
0.25	0.25	0.5	0.5	First	0.3930	0.4196	0.3892	0.4196	0.4296
				Last	0.4052	0.4148	0.3884	0.4296	
0	0.1	0.3	0.7	First	0.8968	0.9130	0.8856	0.9130	0.9296
				Last	0.9042	0.9080	0.8866	0.9296	
0	0.05	0.15	0.35	First	0.4662	0.5052	0.4768	0.5052	0.5120
				Last	0.4842	0.4978	0.4820	0.5120	
0	0.15	0.2	0.5	First	0.6510	0.6776	0.6610	0.6776	0.6902
				Last	0.6630	0.6764	0.6588	0.6902	
0	0	0.1	0.6	First	0.7646	0.7876	0.7704	0.7876	0.8024
				Last	0.7864	0.7940	0.7732	0.8024	
0	0	0.05	0.3	First	0.3482	0.3736	0.3640	0.3736	0.3840
				Last	0.3670	0.3774	0.3658	0.3840	

Table C.36. T with 3 d.f., 4 Treatments, RCBD = 6, BIBD 1 = 18 and BIBD 2 = 18

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0478	0.0474	0.0460	0.0474	0.0470
				Last	0.0504	0.0466	0.0450	0.0470	
0	0.1	0.2	0.3	First	0.1694	0.1764	0.1686	0.1764	0.1860
				Last	0.1722	0.1708	0.1668	0.1860	
0	0	0.25	0.25	First	0.1712	0.1824	0.1736	0.1824	0.1890
				Last	0.1762	0.1766	0.1712	0.1890	
0	0.125	0.25	0.25	First	0.1510	0.1586	0.1536	0.1586	0.1610
				Last	0.1532	0.1562	0.1534	0.1610	
0	0	0	0.5	First	0.2720	0.2908	0.2880	0.2908	0.3010
				Last	0.2844	0.2940	0.2904	0.3010	
0.05	0.1	0.3	0.5	First	0.2864	0.3062	0.2928	0.3062	0.3100
				Last	0.2952	0.3020	0.2900	0.3100	
0	0	0.5	0.5	First	0.3972	0.4284	0.3998	0.4284	0.4348
				Last	0.4074	0.4198	0.3938	0.4348	
0	0.25	0.5	0.5	First	0.3376	0.3624	0.3502	0.3624	0.3792
				Last	0.3428	0.3556	0.3440	0.3792	
0	0.25	0.5	0.5	First	0.5706	0.6112	0.6016	0.6112	0.6514
				Last	0.6240	0.6476	0.6390	0.6514	
0	0.25	0.25	0.5	First	0.2680	0.2972	0.2944	0.2972	0.3014
				Last	0.2808	0.2874	0.2884	0.3014	
0	0.25	0.25	0.25	First	0.1324	0.1380	0.1346	0.1380	0.1498
				Last	0.1370	0.1332	0.1316	0.1498	
0.1	0.2	0.6	1	First	0.7008	0.7350	0.7088	0.7350	0.7470
				Last	0.7176	0.7350	0.7122	0.7470	
0.25	0.25	0.5	0.5	First	0.1718	0.1828	0.1754	0.1828	0.1966
				Last	0.1718	0.1770	0.1722	0.1966	
0	0.1	0.3	0.7	First	0.4758	0.5052	0.4944	0.5052	0.5182
				Last	0.4896	0.5058	0.4942	0.5182	
0	0.05	0.15	0.35	First	0.2038	0.2184	0.2100	0.2184	0.2368
				Last	0.2106	0.2186	0.2102	0.2368	
0	0.15	0.2	0.5	First	0.2878	0.3046	0.2956	0.3046	0.3118
				Last	0.2964	0.3064	0.2998	0.3118	
0	0	0.1	0.6	First	0.3740	0.3994	0.3908	0.3994	0.4110
				Last	0.3892	0.3980	0.3910	0.4110	
0	0	0.05	0.3	First	0.1702	0.1698	0.1620	0.1698	0.1838
				Last	0.1752	0.1718	0.1644	0.1838	

Table C.37. Normal, 4 Treatments, RCBD = 12, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0498	0.0510	0.0508	0.0510	0.0522
				Last	0.0486	0.0474	0.0524	0.0522	
0	0.1	0.2	0.3	First	0.1724	0.1844	0.1786	0.1844	0.2004
				Last	0.1944	0.1936	0.1944	0.2004	
0	0	0.25	0.25	First	0.1734	0.1874	0.1758	0.1874	0.1986
				Last	0.1850	0.1886	0.1904	0.1986	
0	0.125	0.25	0.25	First	0.1538	0.1594	0.1634	0.1594	0.1784
				Last	0.1646	0.1732	0.1780	0.1784	
0	0	0	0.5	First	0.2910	0.3054	0.3078	0.3054	0.3450
				Last	0.3246	0.3312	0.3370	0.3450	
0.05	0.1	0.3	0.5	First	0.3034	0.3200	0.3080	0.3200	0.3522
				Last	0.3382	0.3442	0.3418	0.3522	
0	0	0.5	0.5	First	0.4064	0.4432	0.4198	0.4436	0.4898
				Last	0.4596	0.4752	0.4592	0.4898	
0	0.25	0.5	0.5	First	0.3238	0.3490	0.3436	0.3490	0.3996
				Last	0.3660	0.3876	0.3830	0.3996	
0	0.25	0.5	0.5	First	0.6148	0.6422	0.6342	0.6422	0.7396
				Last	0.7214	0.7340	0.7432	0.7396	
0	0.25	0.25	0.5	First	0.2804	0.3070	0.3054	0.3070	0.3338
				Last	0.3120	0.3244	0.3348	0.3338	
0	0.25	0.25	0.25	First	0.1256	0.1430	0.1400	0.1430	0.1574
				Last	0.1374	0.1404	0.1484	0.1574	
0.1	0.2	0.6	1	First	0.7188	0.7540	0.7330	0.7540	0.8160
				Last	0.7808	0.8050	0.7978	0.8160	
0.25	0.25	0.5	0.5	First	0.1740	0.1828	0.1746	0.1828	0.2092
				Last	0.1860	0.1952	0.1960	0.2092	
0	0.1	0.3	0.7	First	0.5134	0.5408	0.5210	0.5408	0.5956
				Last	0.5648	0.5802	0.5800	0.5956	
0	0.05	0.15	0.35	First	0.2072	0.2112	0.2062	0.2112	0.2426
				Last	0.2202	0.2254	0.2310	0.2426	
0	0.15	0.2	0.5	First	0.3006	0.3168	0.3098	0.3168	0.3470
				Last	0.3256	0.3362	0.3376	0.3470	
0	0	0.1	0.6	First	0.3876	0.4128	0.4084	0.4128	0.4572
				Last	0.4332	0.4456	0.4498	0.4572	
0	0	0.05	0.3	First	0.1710	0.1796	0.1720	0.1796	0.2048
				Last	0.1872	0.1902	0.1944	0.2048	

Table C.38. Exponential, 4 Treatments, RCBD = 12, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0438	0.0444	0.0454	0.0444	0.0476
				Last	0.0468	0.0458	0.0490	0.0476	
0	0.1	0.2	0.3	First	0.3084	0.3268	0.3170	0.3268	0.3544
				Last	0.3390	0.3418	0.3442	0.3544	
0	0	0.25	0.25	First	0.3088	0.3328	0.3236	0.3328	0.3718
				Last	0.3450	0.3580	0.3556	0.3718	
0	0.125	0.25	0.25	First	0.2626	0.2732	0.2654	0.2734	0.3036
				Last	0.2870	0.2910	0.2898	0.3036	
0	0	0	0.5	First	0.4596	0.4818	0.4822	0.4818	0.5410
				Last	0.5100	0.5234	0.5254	0.5410	
0.05	0.1	0.3	0.5	First	0.5324	0.5552	0.5316	0.5552	0.6144
				Last	0.5930	0.6000	0.5754	0.6144	
0	0	0.5	0.5	First	0.6496	0.6884	0.6636	0.6884	0.7542
				Last	0.7176	0.7490	0.7334	0.7542	
0	0.25	0.5	0.5	First	0.5758	0.6084	0.5880	0.6084	0.6696
				Last	0.6428	0.6578	0.6456	0.6696	
0	0.25	0.5	0.5	First	0.8506	0.8582	0.8390	0.8586	0.9210
				Last	0.9174	0.9188	0.9148	0.9210	
0	0.25	0.25	0.5	First	0.4946	0.5232	0.5118	0.5232	0.5800
				Last	0.5562	0.5702	0.5728	0.5800	
0	0.25	0.25	0.25	First	0.2038	0.2306	0.2370	0.2306	0.2590
				Last	0.2348	0.2392	0.2508	0.2590	
0.1	0.2	0.6	1	First	0.9310	0.9404	0.9222	0.9408	0.9702
				Last	0.9614	0.9626	0.9512	0.9702	
0.25	0.25	0.5	0.5	First	0.3042	0.3304	0.3122	0.3304	0.3666
				Last	0.3450	0.3570	0.3498	0.3666	
0	0.1	0.3	0.7	First	0.7720	0.7826	0.7566	0.7830	0.8410
				Last	0.8356	0.8314	0.8138	0.8410	
0	0.05	0.15	0.35	First	0.3626	0.3752	0.3664	0.3752	0.4232
				Last	0.4088	0.4170	0.4108	0.4232	
0	0.15	0.2	0.5	First	0.5258	0.5452	0.5310	0.5452	0.6088
				Last	0.5868	0.5928	0.5910	0.6088	
0	0	0.1	0.6	First	0.6266	0.6452	0.6296	0.6454	0.7068
				Last	0.6924	0.6956	0.6882	0.7068	
0	0	0.05	0.3	First	0.2770	0.2996	0.2950	0.2996	0.3236
				Last	0.3020	0.3122	0.3190	0.3236	

Table C.39. T with 3 d.f., 4 Treatments, RCBD = 12, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0448	0.0438	0.0468	0.0438	0.0448
				Last	0.0412	0.0404	0.0458	0.0448	
0	0.1	0.2	0.3	First	0.1478	0.1576	0.1560	0.1576	0.1756
				Last	0.1588	0.1698	0.1712	0.1756	
0	0	0.25	0.25	First	0.1354	0.1380	0.1316	0.1380	0.1522
				Last	0.1460	0.1474	0.1482	0.1522	
0	0.125	0.25	0.25	First	0.1262	0.1314	0.1292	0.1314	0.1412
				Last	0.1290	0.1316	0.1360	0.1412	
0	0	0	0.5	First	0.2228	0.2342	0.2334	0.2342	0.2678
				Last	0.2460	0.2532	0.2600	0.2678	
0.05	0.1	0.3	0.5	First	0.2346	0.2512	0.2432	0.2512	0.2722
				Last	0.2558	0.2628	0.2648	0.2722	
0	0	0.5	0.5	First	0.3200	0.3388	0.3174	0.3388	0.3748
				Last	0.3526	0.3622	0.3512	0.3748	
0	0.25	0.5	0.5	First	0.2568	0.2820	0.2772	0.2820	0.3098
				Last	0.2882	0.3024	0.3032	0.3098	
0	0.25	0.5	0.5	First	0.4572	0.4832	0.4882	0.4834	0.6054
				Last	0.5676	0.5834	0.5942	0.6054	
0	0.25	0.25	0.5	First	0.2182	0.2296	0.2350	0.2296	0.2660
				Last	0.2450	0.2526	0.2548	0.2660	
0	0.25	0.25	0.25	First	0.1088	0.1176	0.1184	0.1176	0.1344
				Last	0.1184	0.1202	0.1278	0.1344	
0.1	0.2	0.6	1	First	0.5388	0.5716	0.5526	0.5716	0.6336
				Last	0.6028	0.6196	0.6204	0.6336	
0.25	0.25	0.5	0.5	First	0.1452	0.1554	0.1534	0.1554	0.1792
				Last	0.1614	0.1636	0.1640	0.1792	
0	0.1	0.3	0.7	First	0.3712	0.4008	0.3846	0.4008	0.4488
				Last	0.4224	0.4342	0.4376	0.4488	
0	0.05	0.15	0.35	First	0.1674	0.1770	0.1762	0.1770	0.2072
				Last	0.1856	0.1908	0.1956	0.2072	
0	0.15	0.2	0.5	First	0.2362	0.2470	0.2428	0.2470	0.2892
				Last	0.2630	0.2730	0.2776	0.2892	
0	0	0.1	0.6	First	0.2926	0.3030	0.2962	0.3030	0.3386
				Last	0.3230	0.3262	0.3318	0.3386	
0	0	0.05	0.3	First	0.1386	0.1440	0.1454	0.1440	0.1666
				Last	0.1510	0.1484	0.1556	0.1666	

Table C.40. Normal, 4 Treatments, RCBD = 24, BIBD 1 = 12 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0534	0.0536	0.0516	0.0536	0.0522
				Last	0.0530	0.0508	0.0520	0.0522	
0	0.1	0.2	0.3	First	0.2748	0.2870	0.2754	0.2870	0.3084
				Last	0.2912	0.2970	0.3050	0.3084	
0	0	0.25	0.25	First	0.2576	0.2766	0.2634	0.2766	0.3024
				Last	0.2856	0.2872	0.2904	0.3024	
0	0.125	0.25	0.25	First	0.2418	0.2506	0.2414	0.2506	0.2700
				Last	0.2504	0.2540	0.2596	0.2700	
0	0	0	0.5	First	0.4368	0.4704	0.4714	0.4704	0.5282
				Last	0.4878	0.5012	0.5222	0.5282	
0.05	0.1	0.3	0.5	First	0.4686	0.4996	0.4810	0.4996	0.5522
				Last	0.5252	0.5364	0.5358	0.5522	
0	0	0.5	0.5	First	0.6466	0.6836	0.6538	0.6836	0.7458
				Last	0.7052	0.7252	0.7096	0.7458	
0	0.25	0.5	0.5	First	0.5534	0.5868	0.5714	0.5868	0.6470
				Last	0.6034	0.6192	0.6180	0.6470	
0	0.25	0.5	0.5	First	0.8780	0.8984	0.8922	0.8984	0.9576
				Last	0.9366	0.9450	0.9502	0.9576	
0	0.25	0.25	0.5	First	0.4574	0.4798	0.4696	0.4798	0.5300
				Last	0.5042	0.5138	0.5194	0.5300	
0	0.25	0.25	0.25	First	0.1852	0.1988	0.1966	0.1988	0.2244
				Last	0.1988	0.1990	0.2118	0.2244	
0.1	0.2	0.6	1	First	0.9340	0.9492	0.9410	0.9492	0.9794
				Last	0.9624	0.9654	0.9616	0.9794	
0.25	0.25	0.5	0.5	First	0.2652	0.2824	0.2698	0.2824	0.3152
				Last	0.2910	0.2980	0.3002	0.3152	
0	0.1	0.3	0.7	First	0.7670	0.7962	0.7762	0.7962	0.8472
				Last	0.8170	0.8322	0.8314	0.8472	
0	0.05	0.15	0.35	First	0.3090	0.3328	0.3292	0.3328	0.3684
				Last	0.3414	0.3520	0.3634	0.3684	
0	0.15	0.2	0.5	First	0.4712	0.4960	0.4928	0.4960	0.5538
				Last	0.5182	0.5316	0.5436	0.5538	
0	0	0.1	0.6	First	0.6110	0.6520	0.6440	0.6520	0.7008
				Last	0.6714	0.6822	0.6884	0.7008	
0	0	0.05	0.3	First	0.2542	0.2678	0.2634	0.2678	0.2928
				Last	0.2718	0.2756	0.2866	0.2928	

Table C.41. Exponential, 4 Treatments, RCBD = 24, BIBD 1 = 12 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0502	0.0528	0.0488	0.0528	0.0538
				Last	0.0512	0.0492	0.0516	0.0538	
0	0.1	0.2	0.3	First	0.4972	0.5196	0.4980	0.5196	0.5710
				Last	0.5422	0.5482	0.5474	0.5710	
0	0	0.25	0.25	First	0.4872	0.5188	0.4884	0.5188	0.5690
				Last	0.5314	0.5488	0.5364	0.5690	
0	0.125	0.25	0.25	First	0.4216	0.4464	0.4232	0.4464	0.4916
				Last	0.4674	0.4796	0.4736	0.4916	
0	0	0	0.5	First	0.6988	0.7414	0.7384	0.7414	0.8058
				Last	0.7692	0.7906	0.8036	0.8058	
0.05	0.1	0.3	0.5	First	0.7796	0.8066	0.7732	0.8066	0.8586
				Last	0.8484	0.8496	0.8384	0.8586	
0	0	0.5	0.5	First	0.9042	0.9280	0.9054	0.9280	0.9612
				Last	0.9436	0.9546	0.9460	0.9612	
0	0.25	0.5	0.5	First	0.8446	0.8666	0.8476	0.8666	0.9082
				Last	0.8878	0.8988	0.8960	0.9082	
0	0.25	0.5	0.5	First	0.9858	0.9890	0.9842	0.9890	0.9966
				Last	0.9962	0.9966	0.9966	0.9966	
0	0.25	0.25	0.5	First	0.7592	0.7832	0.7740	0.7832	0.8320
				Last	0.8100	0.8138	0.8150	0.8320	
0	0.25	0.25	0.25	First	0.3406	0.3608	0.3590	0.3608	0.3976
				Last	0.3712	0.3776	0.3910	0.3976	
0.1	0.2	0.6	1	First	0.9972	0.9982	0.9956	0.9982	0.9992
				Last	0.9986	0.9990	0.9986	0.9992	
0.25	0.25	0.5	0.5	First	0.4830	0.5152	0.4906	0.5152	0.5752
				Last	0.5362	0.5536	0.5464	0.5752	
0	0.1	0.3	0.7	First	0.9582	0.9636	0.9530	0.9636	0.9926
				Last	0.9802	0.9800	0.9772	0.9926	
0	0.05	0.15	0.35	First	0.5814	0.6128	0.6018	0.6128	0.6740
				Last	0.6496	0.6548	0.6614	0.6740	
0	0.15	0.2	0.5	First	0.7764	0.8072	0.7922	0.8072	0.8602
				Last	0.8366	0.8482	0.8466	0.8602	
0	0	0.1	0.6	First	0.8654	0.8912	0.8764	0.8912	0.9274
				Last	0.9152	0.9208	0.9202	0.9274	
0	0	0.05	0.3	First	0.4368	0.4672	0.4620	0.4672	0.5170
				Last	0.4840	0.4948	0.5052	0.5170	

Table C.42. T with 3 d.f., 4 Treatments, RCBD = 24, BIBD 1 = 12 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0508	0.0472	0.0444	0.0472	0.0502
				Last	0.0488	0.0452	0.0504	0.0502	
0	0.1	0.2	0.3	First	0.2090	0.2216	0.2236	0.2216	0.2434
				Last	0.2284	0.2302	0.2390	0.2434	
0	0	0.25	0.25	First	0.2104	0.2228	0.2118	0.2228	0.2392
				Last	0.2198	0.2224	0.2298	0.2392	
0	0.125	0.25	0.25	First	0.1768	0.1872	0.1824	0.1872	0.2086
				Last	0.1902	0.1890	0.1966	0.2086	
0	0	0	0.5	First	0.3274	0.3532	0.3550	0.3532	0.4074
				Last	0.3672	0.3808	0.3966	0.4074	
0.05	0.1	0.3	0.5	First	0.3540	0.3822	0.3728	0.3822	0.4226
				Last	0.3934	0.4048	0.4166	0.4226	
0	0	0.5	0.5	First	0.4920	0.5324	0.5032	0.5324	0.5862
				Last	0.5410	0.5680	0.5592	0.5862	
0	0.25	0.5	0.5	First	0.4190	0.4386	0.4250	0.4386	0.4776
				Last	0.4516	0.4562	0.4608	0.4776	
0	0.25	0.5	0.5	First	0.7372	0.7612	0.7514	0.7612	0.8440
				Last	0.8236	0.8350	0.8398	0.8440	
0	0.25	0.25	0.5	First	0.3416	0.3600	0.3524	0.3600	0.4084
				Last	0.3736	0.3816	0.3910	0.4084	
0	0.25	0.25	0.25	First	0.1482	0.1546	0.1530	0.1546	0.1738
				Last	0.1498	0.1520	0.1604	0.1738	
0.1	0.2	0.6	1	First	0.8066	0.8368	0.8200	0.8368	0.8844
				Last	0.8636	0.8772	0.8690	0.8844	
0.25	0.25	0.5	0.5	First	0.2248	0.2342	0.2262	0.2342	0.2598
				Last	0.2398	0.2460	0.2452	0.2598	
0	0.1	0.3	0.7	First	0.5974	0.6286	0.6118	0.6286	0.6874
				Last	0.6518	0.6668	0.6682	0.6874	
0	0.05	0.15	0.35	First	0.2484	0.2614	0.2534	0.2614	0.2836
				Last	0.2626	0.2700	0.2770	0.2836	
0	0.15	0.2	0.5	First	0.3570	0.3806	0.3710	0.3806	0.4170
				Last	0.3906	0.3936	0.3984	0.4170	
0	0	0.1	0.6	First	0.4698	0.4966	0.4856	0.4966	0.5484
				Last	0.5104	0.5234	0.5332	0.5484	
0	0	0.05	0.3	First	0.1980	0.2098	0.2038	0.2098	0.2330
				Last	0.2156	0.2174	0.2256	0.2330	

Table C.43. Normal, 4 Treatments, RCBD = 18, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0478	0.0466	0.0458	0.0466	0.0512
				Last	0.0480	0.0480	0.0526	0.0512	
0	0.1	0.2	0.3	First	0.2218	0.2308	0.2254	0.2308	0.2590
				Last	0.2386	0.2454	0.2436	0.2590	
0	0	0.25	0.25	First	0.2082	0.2206	0.2082	0.2206	0.2372
				Last	0.2188	0.2268	0.2282	0.2372	
0	0.125	0.25	0.25	First	0.1906	0.1948	0.1874	0.1948	0.2158
				Last	0.1982	0.2054	0.2094	0.2158	
0	0	0	0.5	First	0.3638	0.3850	0.3806	0.3850	0.4220
				Last	0.3890	0.3998	0.4124	0.4220	
0.05	0.1	0.3	0.5	First	0.3818	0.3990	0.3854	0.3990	0.4444
				Last	0.4130	0.4222	0.4256	0.4444	
0	0	0.5	0.5	First	0.5374	0.5686	0.5388	0.5686	0.6172
				Last	0.5810	0.6004	0.5862	0.6172	
0	0.25	0.5	0.5	First	0.4316	0.4596	0.4466	0.4596	0.5200
				Last	0.4842	0.5024	0.4980	0.5200	
0	0.25	0.5	0.5	First	0.7492	0.7792	0.7746	0.7792	0.8748
				Last	0.8422	0.8574	0.8700	0.8748	
0	0.25	0.25	0.5	First	0.3542	0.3762	0.3748	0.3762	0.4286
				Last	0.3898	0.4012	0.4136	0.4286	
0	0.25	0.25	0.25	First	0.1568	0.1656	0.1682	0.1656	0.1884
				Last	0.1554	0.1676	0.1742	0.1884	
0.1	0.2	0.6	1	First	0.8500	0.8712	0.8554	0.8712	0.9102
				Last	0.8842	0.8986	0.8920	0.9102	
0.25	0.25	0.5	0.5	First	0.2220	0.2320	0.2132	0.2320	0.2470
				Last	0.2252	0.2278	0.2256	0.2470	
0	0.1	0.3	0.7	First	0.6374	0.6682	0.6524	0.6682	0.7296
				Last	0.6874	0.7148	0.7150	0.7296	
0	0.05	0.15	0.35	First	0.2624	0.2722	0.2678	0.2722	0.3044
				Last	0.2800	0.2870	0.2934	0.3044	
0	0.15	0.2	0.5	First	0.3760	0.3938	0.3818	0.3938	0.4426
				Last	0.4142	0.4232	0.4276	0.4426	
0	0	0.1	0.6	First	0.4992	0.5260	0.5132	0.5260	0.5814
				Last	0.5478	0.5612	0.5698	0.5814	
0	0	0.05	0.3	First	0.2164	0.2232	0.2124	0.2232	0.2388
				Last	0.2246	0.2250	0.2312	0.2388	

Table C.44. Exponential, 4 Treatments, RCBD = 18, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0432	0.0412	0.0436	0.0412	0.0484
				Last	0.0432	0.0464	0.0504	0.0484	
0	0.1	0.2	0.3	First	0.4120	0.4228	0.4050	0.4228	0.4714
				Last	0.4480	0.4520	0.4480	0.4714	
0	0	0.25	0.25	First	0.3794	0.4078	0.3812	0.4078	0.4488
				Last	0.4256	0.4356	0.4276	0.4488	
0	0.125	0.25	0.25	First	0.3382	0.3522	0.3382	0.3522	0.3902
				Last	0.3628	0.3742	0.3712	0.3902	
0	0	0	0.5	First	0.5940	0.6194	0.6076	0.6194	0.6778
				Last	0.6444	0.6552	0.6590	0.6778	
0.05	0.1	0.3	0.5	First	0.6544	0.6694	0.6436	0.6694	0.7360
				Last	0.7160	0.7186	0.7074	0.7360	
0	0	0.5	0.5	First	0.8016	0.8352	0.8076	0.8352	0.8862
				Last	0.8540	0.8688	0.8590	0.8862	
0	0.25	0.5	0.5	First	0.7098	0.7394	0.7126	0.7394	0.8010
				Last	0.7716	0.7842	0.7768	0.8010	
0	0.25	0.5	0.5	First	0.9420	0.9482	0.9364	0.9482	0.9814
				Last	0.9802	0.9808	0.9804	0.9814	
0	0.25	0.25	0.5	First	0.6410	0.6578	0.6442	0.6578	0.7224
				Last	0.6984	0.7066	0.7038	0.7224	
0	0.25	0.25	0.25	First	0.2606	0.2784	0.2816	0.2784	0.3190
				Last	0.2930	0.3054	0.3088	0.3190	
0.1	0.2	0.6	1	First	0.9816	0.9828	0.9720	0.9828	0.9934
				Last	0.9918	0.9922	0.9888	0.9934	
0.25	0.25	0.5	0.5	First	0.3964	0.4246	0.4000	0.4246	0.4714
				Last	0.4376	0.4522	0.4380	0.4714	
0	0.1	0.3	0.7	First	0.8950	0.9078	0.8874	0.9078	0.9434
				Last	0.9328	0.9372	0.9268	0.9434	
0	0.05	0.15	0.35	First	0.4804	0.5008	0.4812	0.5008	0.5538
				Last	0.5292	0.5356	0.5324	0.5538	
0	0.15	0.2	0.5	First	0.6636	0.6832	0.6684	0.6832	0.7426
				Last	0.7064	0.7140	0.7108	0.7426	
0	0	0.1	0.6	First	0.7696	0.7888	0.7748	0.7888	0.8454
				Last	0.8276	0.8328	0.8236	0.8454	
0	0	0.05	0.3	First	0.3690	0.3852	0.3756	0.3852	0.4310
				Last	0.3940	0.4062	0.4126	0.4310	

Table C.45. T with 3 d.f., 4 Treatments, RCBD = 18, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0546	0.0538	0.0486	0.0538	0.0482
				Last	0.0492	0.0482	0.0492	0.0482	
0	0.1	0.2	0.3	First	0.1714	0.1766	0.1724	0.1766	0.1866
				Last	0.1774	0.1780	0.1822	0.1866	
0	0	0.25	0.25	First	0.1830	0.1832	0.1726	0.1832	0.2040
				Last	0.1878	0.1934	0.1942	0.2040	
0	0.125	0.25	0.25	First	0.1490	0.1550	0.1510	0.1550	0.1604
				Last	0.1514	0.1524	0.1544	0.1604	
0	0	0	0.5	First	0.2886	0.2918	0.2830	0.2918	0.3216
				Last	0.3010	0.3016	0.3098	0.3216	
0.05	0.1	0.3	0.5	First	0.2822	0.2986	0.2922	0.2986	0.3350
				Last	0.3106	0.3178	0.3258	0.3350	
0	0	0.5	0.5	First	0.4038	0.4184	0.3966	0.4184	0.4690
				Last	0.4358	0.4514	0.4402	0.4690	
0	0.25	0.5	0.5	First	0.3398	0.3596	0.3548	0.3596	0.4002
				Last	0.3720	0.3802	0.3858	0.4002	
0	0.25	0.5	0.5	First	0.5902	0.6168	0.6054	0.6168	0.7208
				Last	0.6952	0.7070	0.7120	0.7208	
0	0.25	0.25	0.5	First	0.2770	0.2928	0.2886	0.2928	0.3274
				Last	0.2976	0.3070	0.3164	0.3274	
0	0.25	0.25	0.25	First	0.1278	0.1314	0.1372	0.1314	0.1668
				Last	0.1318	0.1392	0.1520	0.1668	
0.1	0.2	0.6	1	First	0.6858	0.7198	0.6964	0.7198	0.7836
				Last	0.7516	0.7684	0.7640	0.7836	
0.25	0.25	0.5	0.5	First	0.1676	0.1752	0.1714	0.1752	0.1984
				Last	0.1708	0.1760	0.1842	0.1984	
0	0.1	0.3	0.7	First	0.4790	0.5112	0.4974	0.5112	0.5600
				Last	0.5248	0.5350	0.5418	0.5600	
0	0.05	0.15	0.35	First	0.2104	0.2166	0.2126	0.2166	0.2434
				Last	0.2296	0.2336	0.2390	0.2434	
0	0.15	0.2	0.5	First	0.2906	0.3038	0.2992	0.3038	0.3348
				Last	0.3090	0.3162	0.3266	0.3348	
0	0	0.1	0.6	First	0.3648	0.3914	0.3842	0.3914	0.4362
				Last	0.4006	0.4162	0.4278	0.4362	
0	0	0.05	0.3	First	0.1734	0.1820	0.1730	0.1820	0.1940
				Last	0.1752	0.1766	0.1788	0.1940	

Table C.46. Normal, 4 Treatments, RCBD = 24, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0506	0.0498	0.0494	0.0498	0.0504
				Last	0.0526	0.0496	0.0478	0.0504	
0	0.1	0.2	0.3	First	0.2236	0.2366	0.2354	0.2366	0.2874
				Last	0.2776	0.2954	0.2786	0.2874	
0	0	0.25	0.25	First	0.2266	0.2366	0.2286	0.2368	0.2884
				Last	0.2788	0.2956	0.2716	0.2884	
0	0.125	0.25	0.25	First	0.2000	0.2096	0.2042	0.2096	0.2418
				Last	0.2362	0.2516	0.2292	0.2418	
0	0	0	0.5	First	0.3828	0.3936	0.3864	0.3936	0.4696
				Last	0.4564	0.4702	0.4672	0.4696	
0.05	0.1	0.3	0.5	First	0.3820	0.4066	0.3796	0.4066	0.4860
				Last	0.4758	0.4952	0.4692	0.4860	
0	0	0.5	0.5	First	0.5320	0.5672	0.5358	0.5674	0.6782
				Last	0.6536	0.6836	0.6436	0.6782	
0	0.25	0.5	0.5	First	0.4540	0.4846	0.4682	0.4846	0.5782
				Last	0.5586	0.5802	0.5510	0.5782	
0	0.25	0.5	0.5	First	0.7854	0.8090	0.7984	0.8100	0.9188
				Last	0.9116	0.9238	0.9190	0.9188	
0	0.25	0.25	0.5	First	0.3568	0.3842	0.3870	0.3842	0.4656
				Last	0.4526	0.4782	0.4608	0.4656	
0	0.25	0.25	0.25	First	0.1590	0.1622	0.1674	0.1622	0.1988
				Last	0.2020	0.2042	0.2036	0.1988	
0.1	0.2	0.6	1	First	0.8564	0.8784	0.8586	0.8786	0.9448
				Last	0.9358	0.9546	0.9358	0.9448	
0.25	0.25	0.5	0.5	First	0.2192	0.2338	0.2254	0.2338	0.2786
				Last	0.2734	0.2926	0.2652	0.2786	
0	0.1	0.3	0.7	First	0.6494	0.6786	0.6612	0.6786	0.7720
				Last	0.7606	0.7840	0.7560	0.7720	
0	0.05	0.15	0.35	First	0.2560	0.2746	0.2762	0.2746	0.3272
				Last	0.3180	0.3354	0.3154	0.3272	
0	0.15	0.2	0.5	First	0.3918	0.4236	0.4138	0.4238	0.4980
				Last	0.4866	0.5094	0.4892	0.4980	
0	0	0.1	0.6	First	0.5054	0.5300	0.5244	0.5302	0.6302
				Last	0.6150	0.6360	0.6142	0.6302	
0	0	0.05	0.3	First	0.2096	0.2142	0.2098	0.2142	0.2596
				Last	0.2560	0.2662	0.2558	0.2596	

Table C.47. Exponential, 4 Treatments, RCBD = 24, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0582	0.0582	0.0554	0.0582	0.0530
				Last	0.0508	0.0512	0.0496	0.0530	
0	0.1	0.2	0.3	First	0.4186	0.4278	0.4120	0.4282	0.5190
				Last	0.5084	0.5286	0.4938	0.5190	
0	0	0.25	0.25	First	0.4086	0.4388	0.4166	0.4388	0.5072
				Last	0.4930	0.5182	0.4802	0.5072	
0	0.125	0.25	0.25	First	0.3408	0.3616	0.3518	0.3616	0.4382
				Last	0.4318	0.4464	0.4194	0.4382	
0	0	0	0.5	First	0.6076	0.6354	0.6274	0.6354	0.7488
				Last	0.7320	0.7564	0.7410	0.7488	
0.05	0.1	0.3	0.5	First	0.6776	0.6958	0.6704	0.6958	0.7992
				Last	0.7936	0.8082	0.7700	0.7992	
0	0	0.5	0.5	First	0.8100	0.8448	0.8166	0.8450	0.9218
				Last	0.9056	0.9296	0.9014	0.9218	
0	0.25	0.5	0.5	First	0.7338	0.7658	0.7416	0.7660	0.8598
				Last	0.8408	0.8660	0.8400	0.8598	
0	0.25	0.5	0.5	First	0.9538	0.9590	0.9490	0.9604	0.9930
				Last	0.9912	0.9978	0.9888	0.9930	
0	0.25	0.25	0.5	First	0.6556	0.6706	0.6502	0.6706	0.7782
				Last	0.7684	0.7814	0.7606	0.7782	
0	0.25	0.25	0.25	First	0.2626	0.2794	0.2844	0.2794	0.3522
				Last	0.3426	0.3640	0.3486	0.3522	
0.1	0.2	0.6	1	First	0.9844	0.9860	0.9776	0.9864	0.9982
				Last	0.9972	0.99912	0.9948	0.9982	
0.25	0.25	0.5	0.5	First	0.3978	0.4248	0.4062	0.4248	0.5004
				Last	0.4904	0.5070	0.4754	0.5004	
0	0.1	0.3	0.7	First	0.9084	0.9138	0.8932	0.9140	0.9690
				Last	0.9682	0.9770	0.9556	0.9690	
0	0.05	0.15	0.35	First	0.4942	0.5082	0.4952	0.5082	0.6104
				Last	0.5986	0.6166	0.5868	0.6104	
0	0.15	0.2	0.5	First	0.6718	0.6850	0.6708	0.6854	0.8022
				Last	0.7948	0.8088	0.7828	0.8022	
0	0	0.1	0.6	First	0.7854	0.8042	0.7780	0.8048	0.8936
				Last	0.8870	0.8970	0.8722	0.8936	
0	0	0.05	0.3	First	0.3846	0.3976	0.3848	0.3976	0.4830
				Last	0.4746	0.4936	0.4678	0.4830	

Table C.48. T with 3 d.f., 4 Treatments, RCBD = 24, BIBD 1 = 6 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0448	0.0452	0.0496	0.0452	0.0456
				Last	0.0464	0.0462	0.0450	0.0456	
0	0.1	0.2	0.3	First	0.1766	0.1802	0.1782	0.1802	0.2152
				Last	0.2088	0.2254	0.2046	0.2152	
0	0	0.25	0.25	First	0.1848	0.1908	0.1802	0.1908	0.2250
				Last	0.2202	0.2302	0.2114	0.2250	
0	0.125	0.25	0.25	First	0.1504	0.1578	0.1536	0.1578	0.1810
				Last	0.1780	0.1875	0.1794	0.1810	
0	0	0	0.5	First	0.3010	0.3106	0.3034	0.3106	0.3636
				Last	0.3602	0.3804	0.3588	0.3636	
0.05	0.1	0.3	0.5	First	0.2968	0.3090	0.3062	0.3090	0.3752
				Last	0.3656	0.3814	0.3592	0.3752	
0	0	0.5	0.5	First	0.4082	0.4336	0.4176	0.4336	0.5270
				Last	0.5126	0.5316	0.5054	0.5270	
0	0.25	0.5	0.5	First	0.3410	0.3688	0.3582	0.3688	0.4396
				Last	0.4218	0.4409	0.4226	0.4396	
0	0.25	0.5	0.5	First	0.6298	0.6456	0.6378	0.6458	0.7956
				Last	0.7846	0.7956	0.7928	0.7956	
0	0.25	0.25	0.5	First	0.2932	0.3110	0.3038	0.3110	0.3688
				Last	0.3544	0.3730	0.3592	0.3688	
0	0.25	0.25	0.25	First	0.1238	0.1326	0.1356	0.1326	0.1648
				Last	0.1622	0.1782	0.1672	0.1648	
0.1	0.2	0.6	1	First	0.7112	0.7324	0.7072	0.7324	0.8292
				Last	0.8140	0.8304	0.8090	0.8292	
0.25	0.25	0.5	0.5	First	0.1806	0.1874	0.1782	0.1874	0.2158
				Last	0.2130	0.2218	0.2072	0.2158	
0	0.1	0.3	0.7	First	0.4984	0.5186	0.5056	0.5190	0.6276
				Last	0.6072	0.6342	0.6066	0.6276	
0	0.05	0.15	0.35	First	0.2074	0.2192	0.2120	0.2192	0.2504
				Last	0.2470	0.2587	0.2448	0.2504	
0	0.15	0.2	0.5	First	0.3044	0.3112	0.3030	0.3112	0.3816
				Last	0.3758	0.3890	0.3750	0.3816	
0	0	0.1	0.6	First	0.3916	0.4154	0.4090	0.4154	0.4862
				Last	0.4712	0.4918	0.4706	0.4862	
0	0	0.05	0.3	First	0.1640	0.1794	0.1808	0.1794	0.2094
				Last	0.2024	0.2190	0.2048	0.2094	

Table C.49. Normal, 4 Treatments, RCBD = 24, BIBD 1 = 12 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0522	0.0516	0.0504	0.0516	0.0538
				Last	0.0476	0.0534	0.0500	0.0538	
0	0.1	0.2	0.3	First	0.2510	0.2598	0.2524	0.2598	0.3018
				Last	0.2708	0.31210	0.2834	0.3018	
0	0	0.25	0.25	First	0.2522	0.2586	0.2474	0.2588	0.2978
				Last	0.2714	0.3080	0.2784	0.2978	
0	0.125	0.25	0.25	First	0.2170	0.2306	0.2242	0.2308	0.2640
				Last	0.2384	0.2712	0.2466	0.2640	
0	0	0	0.5	First	0.4100	0.4318	0.4286	0.4320	0.4996
				Last	0.4678	0.5038	0.4884	0.4996	
0.05	0.1	0.3	0.5	First	0.4400	0.4680	0.4492	0.4682	0.5330
				Last	0.4978	0.5394	0.5090	0.5330	
0	0	0.5	0.5	First	0.5952	0.6330	0.6054	0.6334	0.7172
				Last	0.6754	0.7217	0.6766	0.7172	
0	0.25	0.5	0.5	First	0.5136	0.5452	0.5330	0.5454	0.6246
				Last	0.5790	0.6308	0.5950	0.6246	
0	0.25	0.5	0.5	First	0.8508	0.8680	0.8604	0.8698	0.9454
				Last	0.9254	0.9494	0.9382	0.9454	
0	0.25	0.25	0.5	First	0.4174	0.4442	0.4418	0.4442	0.5092
				Last	0.4686	0.5133	0.4948	0.5092	
0	0.25	0.25	0.25	First	0.1736	0.1792	0.1804	0.1792	0.2046
				Last	0.1878	0.2154	0.2014	0.2046	
0.1	0.2	0.6	1	First	0.9040	0.9238	0.9128	0.9246	0.9634
				Last	0.9494	0.9687	0.9548	0.9634	
0.25	0.25	0.5	0.5	First	0.2532	0.2684	0.2548	0.2684	0.3014
				Last	0.2700	0.3104	0.2720	0.3014	
0	0.1	0.3	0.7	First	0.7032	0.7362	0.7288	0.7366	0.8186
				Last	0.7864	0.8262	0.8052	0.8186	
0	0.05	0.15	0.35	First	0.2892	0.3026	0.3012	0.3026	0.3524
				Last	0.3180	0.3636	0.3382	0.3524	
0	0.15	0.2	0.5	First	0.4414	0.4666	0.4548	0.4666	0.5338
				Last	0.4940	0.5394	0.5204	0.5338	
0	0	0.1	0.6	First	0.5740	0.6058	0.5930	0.6060	0.6876
				Last	0.6512	0.6943	0.6684	0.6876	
0	0	0.05	0.3	First	0.2308	0.2322	0.2282	0.2322	0.2674
				Last	0.2474	0.2712	0.2540	0.2674	

Table C.50. Exponential, 4 Treatments, RCBD = 24, BIBD 1 = 12 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0500	0.0526	0.0504	0.0526	0.0512
				Last	0.0472	0.0536	0.0502	0.0512	
0	0.1	0.2	0.3	First	0.4622	0.4792	0.4662	0.4794	0.5598
				Last	0.5214	0.5616	0.5362	0.5598	
0	0	0.25	0.25	First	0.4496	0.4784	0.4564	0.4784	0.5508
				Last	0.5140	0.5682	0.5140	0.5508	
0	0.125	0.25	0.25	First	0.3820	0.3950	0.3824	0.3950	0.4664
				Last	0.4402	0.4768	0.4368	0.4664	
0	0	0	0.5	First	0.6586	0.6950	0.6970	0.6954	0.7826
				Last	0.7430	0.7928	0.7728	0.7826	
0.05	0.1	0.3	0.5	First	0.7464	0.7650	0.7350	0.7652	0.8376
				Last	0.8192	0.8452	0.8130	0.8376	
0	0	0.5	0.5	First	0.8600	0.8900	0.8668	0.8906	0.9424
				Last	0.9176	0.9584	0.9198	0.9424	
0	0.25	0.5	0.5	First	0.8070	0.8238	0.8106	0.8240	0.8926
				Last	0.8722	0.9011	0.8704	0.8926	
0	0.25	0.5	0.5	First	0.9788	0.9796	0.9730	0.9822	0.9972
				Last	0.9926	0.9987	0.9928	0.9972	
0	0.25	0.25	0.5	First	0.7122	0.7270	0.7144	0.7274	0.8096
				Last	0.7854	0.8123	0.7902	0.8096	
0	0.25	0.25	0.25	First	0.3022	0.3166	0.3194	0.3166	0.3720
				Last	0.3456	0.3794	0.3666	0.3720	
0.1	0.2	0.6	1	First	0.9930	0.9930	0.9892	0.9932	0.9992
				Last	0.9988	0.9995	0.9976	0.9992	
0.25	0.25	0.5	0.5	First	0.4588	0.4874	0.4640	0.4874	0.5618
				Last	0.5206	0.5664	0.5240	0.5618	
0	0.1	0.3	0.7	First	0.9414	0.9526	0.9390	0.9538	0.9828
				Last	0.9758	0.9898	0.9718	0.9828	
0	0.05	0.15	0.35	First	0.5348	0.5606	0.5454	0.5606	0.6398
				Last	0.6070	0.6480	0.6086	0.6398	
0	0.15	0.2	0.5	First	0.7424	0.7652	0.7474	0.7656	0.8374
				Last	0.8128	0.8440	0.8154	0.8374	
0	0	0.1	0.6	First	0.8336	0.8536	0.8380	0.8540	0.9196
				Last	0.9034	0.9284	0.9048	0.9196	
0	0	0.05	0.3	First	0.4180	0.4358	0.4230	0.4362	0.5010
				Last	0.4688	0.5138	0.4832	0.5010	

Table C.51. T with 3 d.f., 4 Treatments, RCBD = 24, BIBD 1 = 12 and BIBD 2 = 6

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0544	0.0556	0.0518	0.0556	0.0512
				Last	0.0476	0.0528	0.0488	0.0512	
0	0.1	0.2	0.3	First	0.1906	0.2060	0.2068	0.2060	0.2316
				Last	0.2086	0.2470	0.2238	0.2316	
0	0	0.25	0.25	First	0.1986	0.2116	0.1992	0.2116	0.2350
				Last	0.2152	0.2484	0.2198	0.2350	
0	0.125	0.25	0.25	First	0.1706	0.1750	0.1660	0.1750	0.1964
				Last	0.1844	0.2086	0.1880	0.1964	
0	0	0	0.5	First	0.3028	0.3250	0.3250	0.3252	0.3690
				Last	0.3432	0.3728	0.3634	0.3690	
0.05	0.1	0.3	0.5	First	0.3226	0.3450	0.3340	0.3452	0.3924
				Last	0.3598	0.4060	0.3706	0.3924	
0	0	0.5	0.5	First	0.4478	0.4756	0.4526	0.4758	0.5534
				Last	0.5122	0.5624	0.5170	0.5534	
0	0.25	0.5	0.5	First	0.3872	0.4098	0.3970	0.4098	0.4752
				Last	0.4418	0.4840	0.4496	0.4752	
0	0.25	0.5	0.5	First	0.7088	0.7320	0.7252	0.7326	0.8452
				Last	0.8192	0.8608	0.8384	0.8452	
0	0.25	0.25	0.5	First	0.3182	0.3368	0.3414	0.3368	0.3944
				Last	0.3590	0.4058	0.3866	0.3944	
0	0.25	0.25	0.25	First	0.1516	0.1582	0.1562	0.1582	0.1738
				Last	0.1586	0.1814	0.1644	0.1738	
0.1	0.2	0.6	1	First	0.7636	0.8000	0.7788	0.8002	0.8702
				Last	0.8412	0.8770	0.8486	0.8702	
0.25	0.25	0.5	0.5	First	0.1932	0.1996	0.1940	0.1996	0.2318
				Last	0.2190	0.2488	0.2136	0.2318	
0	0.1	0.3	0.7	First	0.5548	0.5786	0.5692	0.5792	0.6732
				Last	0.6296	0.6808	0.6540	0.6732	
0	0.05	0.15	0.35	First	0.2358	0.2412	0.2320	0.2412	0.2728
				Last	0.2542	0.2838	0.2608	0.2728	
0	0.15	0.2	0.5	First	0.3390	0.3550	0.3510	0.3550	0.4110
				Last	0.3758	0.4176	0.3870	0.4110	
0	0	0.1	0.6	First	0.4340	0.4654	0.4604	0.4656	0.5402
				Last	0.4998	0.5493	0.5250	0.5402	
0	0	0.05	0.3	First	0.1772	0.1856	0.1924	0.1856	0.2110
				Last	0.1924	0.2189	0.2092	0.2110	

Table C.52. Normal, 4 Treatments, RCBD = 24, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0476	0.0486	0.0498	0.0486	0.0482
				Last	0.0520	0.0498	0.0464	0.0482	
0	0.1	0.2	0.3	First	0.2448	0.2612	0.2494	0.2612	0.2968
				Last	0.2908	0.3020	0.2826	0.2968	
0	0	0.25	0.25	First	0.2444	0.2594	0.2454	0.2594	0.2922
				Last	0.2894	0.2966	0.2686	0.2922	
0	0.125	0.25	0.25	First	0.2116	0.2198	0.2108	0.2198	0.2468
				Last	0.2518	0.2536	0.2340	0.2468	
0	0	0	0.5	First	0.4114	0.4288	0.4242	0.4288	0.4994
				Last	0.4948	0.5062	0.4910	0.4994	
0.05	0.1	0.3	0.5	First	0.4292	0.4492	0.4366	0.4492	0.5170
				Last	0.5092	0.5250	0.4934	0.5170	
0	0	0.5	0.5	First	0.5838	0.6142	0.5856	0.6142	0.6962
				Last	0.6880	0.7046	0.6606	0.6962	
0	0.25	0.5	0.5	First	0.4876	0.5114	0.5050	0.5114	0.5936
				Last	0.5804	0.5960	0.5676	0.5936	
0	0.25	0.5	0.5	First	0.8070	0.8334	0.8312	0.8334	0.9260
				Last	0.9186	0.9344	0.9292	0.9260	
0	0.25	0.25	0.5	First	0.3996	0.4248	0.4232	0.4248	0.4990
				Last	0.4926	0.5018	0.4838	0.4990	
0	0.25	0.25	0.25	First	0.1584	0.1742	0.1752	0.1742	0.2010
				Last	0.1950	0.2068	0.1956	0.2010	
0.1	0.2	0.6	1	First	0.8882	0.9100	0.8942	0.9100	0.9562
				Last	0.9504	0.9640	0.9448	0.9562	
0.25	0.25	0.5	0.5	First	0.2360	0.2554	0.2440	0.2554	0.3000
				Last	0.3024	0.3064	0.2790	0.3000	
0	0.1	0.3	0.7	First	0.6932	0.7164	0.7008	0.7164	0.7926
				Last	0.7810	0.8020	0.7740	0.7926	
0	0.05	0.15	0.35	First	0.2686	0.2912	0.2882	0.2912	0.3390
				Last	0.3408	0.3534	0.3310	0.3390	
0	0.15	0.2	0.5	First	0.4162	0.4450	0.4362	0.4450	0.5132
				Last	0.5016	0.5188	0.4990	0.5132	
0	0	0.1	0.6	First	0.5436	0.5820	0.5704	0.5820	0.6548
				Last	0.6406	0.6614	0.6438	0.6548	
0	0	0.05	0.3	First	0.2374	0.2414	0.2418	0.2414	0.2710
				Last	0.2758	0.2792	0.2600	0.2710	

Table C.53. Exponential, 4 Treatments, RCBD = 24, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0478	0.0488	0.0498	0.0488	0.0506
				Last	0.0522	0.0534	0.0506	0.0506	
0	0.1	0.2	0.3	First	0.4474	0.4668	0.4446	0.4668	0.5508
				Last	0.5488	0.5598	0.5158	0.5508	
0	0	0.25	0.25	First	0.4190	0.4522	0.4310	0.4522	0.5204
				Last	0.5122	0.5284	0.4836	0.5204	
0	0.125	0.25	0.25	First	0.3748	0.3940	0.3820	0.3940	0.4592
				Last	0.4514	0.4646	0.4382	0.4592	
0	0	0	0.5	First	0.6620	0.6840	0.6810	0.6840	0.7740
				Last	0.7608	0.7836	0.7614	0.7740	
0.05	0.1	0.3	0.5	First	0.7202	0.7460	0.7156	0.7460	0.8160
				Last	0.8138	0.8252	0.7812	0.8160	
0	0	0.5	0.5	First	0.8500	0.8804	0.8526	0.8804	0.9332
				Last	0.9250	0.9396	0.9154	0.9332	
0	0.25	0.5	0.5	First	0.7842	0.8086	0.7892	0.8086	0.8738
				Last	0.8618	0.8828	0.8528	0.8738	
0	0.25	0.5	0.5	First	0.9738	0.9766	0.9690	0.9766	0.9964
				Last	0.9966	0.9970	0.9956	0.9964	
0	0.25	0.25	0.5	First	0.6906	0.7152	0.7010	0.7152	0.7954
				Last	0.7926	0.8038	0.7730	0.7954	
0	0.25	0.25	0.25	First	0.2828	0.3092	0.3106	0.3092	0.3570
				Last	0.3528	0.3614	0.3490	0.3570	
0.1	0.2	0.6	1	First	0.9922	0.9936	0.9884	0.9936	0.9992
				Last	0.9994	0.9996	0.9966	0.9992	
0.25	0.25	0.5	0.5	First	0.4220	0.4482	0.4264	0.4482	0.5304
				Last	0.5212	0.5396	0.5038	0.5304	
0	0.1	0.3	0.7	First	0.9342	0.9404	0.9252	0.9404	0.9752
				Last	0.9752	0.9806	0.9646	0.9752	
0	0.05	0.15	0.35	First	0.5166	0.5444	0.5178	0.5444	0.6242
				Last	0.6224	0.6336	0.5920	0.6242	
0	0.15	0.2	0.5	First	0.7236	0.7402	0.7188	0.7402	0.8170
				Last	0.8206	0.8213	0.7932	0.8170	
0	0	0.1	0.6	First	0.8266	0.8398	0.8206	0.8398	0.9084
				Last	0.9068	0.9128	0.8862	0.9084	
0	0	0.05	0.3	First	0.4140	0.4300	0.4170	0.4300	0.4874
				Last	0.4880	0.4960	0.4654	0.4874	

Table C.54. T with 3 d.f., 4 Treatments, RCBD = 24, BIBD 1 = 6 and BIBD 2 = 12

μ_1	μ_2	μ_3	μ_4	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	First	0.0462	0.0460	0.0488	0.0460	0.0458
				Last	0.0484	0.0462	0.0406	0.0458	
0	0.1	0.2	0.3	First	0.1936	0.1986	0.1918	0.1986	0.2278
				Last	0.2314	0.2386	0.2222	0.2278	
0	0	0.25	0.25	First	0.1758	0.1886	0.1822	0.1886	0.2146
				Last	0.2106	0.2212	0.2018	0.2146	
0	0.125	0.25	0.25	First	0.1626	0.1726	0.1684	0.1726	0.1940
				Last	0.1886	0.1988	0.1856	0.1940	
0	0	0	0.5	First	0.3034	0.3242	0.3176	0.3242	0.3694
				Last	0.3636	0.3740	0.3578	0.3694	
0.05	0.1	0.3	0.5	First	0.3174	0.3408	0.3322	0.3408	0.3882
				Last	0.3790	0.3904	0.3682	0.3882	
0	0	0.5	0.5	First	0.4504	0.4810	0.4566	0.4810	0.5470
				Last	0.5408	0.5524	0.5168	0.5470	
0	0.25	0.5	0.5	First	0.3674	0.3906	0.3806	0.3906	0.4566
				Last	0.4428	0.4632	0.4266	0.4566	
0	0.25	0.5	0.5	First	0.6496	0.6734	0.6650	0.6734	0.7884
				Last	0.7888	0.8034	0.7910	0.7884	
0	0.25	0.25	0.5	First	0.3058	0.3256	0.3264	0.3256	0.3740
				Last	0.3668	0.3844	0.3682	0.3740	
0	0.25	0.25	0.25	First	0.1308	0.1422	0.1362	0.1422	0.1582
				Last	0.1644	0.1658	0.1512	0.1582	
0.1	0.2	0.6	1	First	0.7474	0.7782	0.7606	0.7782	0.8522
				Last	0.8328	0.8567	0.8242	0.8522	
0.25	0.25	0.5	0.5	First	0.1874	0.2024	0.1928	0.2024	0.2270
				Last	0.2250	0.2316	0.2142	0.2270	
0	0.1	0.3	0.7	First	0.5456	0.5700	0.5562	0.5700	0.6476
				Last	0.6336	0.6540	0.6268	0.6476	
0	0.05	0.15	0.35	First	0.2178	0.2310	0.2246	0.2310	0.2564
				Last	0.2590	0.2606	0.2492	0.2564	
0	0.15	0.2	0.5	First	0.3238	0.3422	0.3350	0.3422	0.3936
				Last	0.3940	0.4030	0.3894	0.3936	
0	0	0.1	0.6	First	0.4224	0.4356	0.4326	0.4356	0.5060
				Last	0.5032	0.5092	0.4848	0.5060	
0	0	0.05	0.3	First	0.1820	0.1966	0.1968	0.1966	0.2170
				Last	0.2192	0.2232	0.2108	0.2170	

Table C.55. Normal, 5 Trt, RCBD = 10, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0460	0.0482	0.0514	0.0482	0.0502
					Last	0.0470	0.0498	0.0490	0.0502	
0.05	0.15	0.25	0.35	0.45	First	0.3476	0.3690	0.3614	0.3690	0.3936
					Last	0.3558	0.3828	0.3716	0.3936	
0	0.025	0.075	0.175	0.375	First	0.2948	0.3204	0.3140	0.3204	0.3348
					Last	0.3028	0.3264	0.3208	0.3348	
0	0	0	0	0.5	First	0.3384	0.3590	0.3636	0.3590	0.3844
					Last	0.3484	0.3746	0.3808	0.3844	
0	0	0	0.125	0.25	First	0.1914	0.1988	0.1938	0.1988	0.2092
					Last	0.1878	0.2084	0.2040	0.2092	
0	0	0.125	0.25	0.25	First	0.2422	0.2608	0.2454	0.2608	0.2730
					Last	0.2420	0.2666	0.2610	0.2730	
0	0.05	0.05	0.3	0.3	First	0.2808	0.3074	0.2910	0.3074	0.3172
					Last	0.2812	0.3034	0.2918	0.3172	
0.05	0.2	0.3	0.4	0.5	First	0.4000	0.4232	0.4126	0.4232	0.4504
					Last	0.4062	0.4386	0.4332	0.4504	
0	0	0	0.25	0.5	First	0.4648	0.4954	0.4808	0.4954	0.5152
					Last	0.4744	0.5072	0.4918	0.5152	
0	0	0	0.35	0.35	First	0.3716	0.3982	0.3780	0.3982	0.4156
					Last	0.3812	0.4034	0.3832	0.4156	
0	0	0.25	0.25	0.5	First	0.4716	0.5020	0.4900	0.5020	0.5300
					Last	0.4840	0.5214	0.5054	0.5300	
0	0.125	0.25	0.25	0.25	First	0.1860	0.2022	0.1978	0.2022	0.2060
					Last	0.1816	0.1978	0.1926	0.2060	
0	0.125	0.125	0.125	0.25	First	0.1524	0.1604	0.1586	0.1604	0.1658
					Last	0.1526	0.1634	0.1642	0.1658	
0	0.125	0.125	0.125	0.125	First	0.0962	0.1016	0.0988	0.1016	0.0980
					Last	0.0906	0.0958	0.0960	0.0980	
0.125	0.125	0.125	0.25	0.25	First	0.1154	0.1292	0.1290	0.1292	0.1306
					Last	0.1118	0.1276	0.1224	0.1306	
0	0	0	0.1	0.3	First	0.2250	0.2384	0.2360	0.2384	0.2544
					Last	0.2280	0.2472	0.2472	0.2544	
0	0	0	0.2	0.7	First	0.6322	0.6696	0.6602	0.6696	0.6942
					Last	0.6364	0.6764	0.6754	0.6942	
0	0.1	0.1	0.6	0.6	First	0.6890	0.7288	0.6978	0.7288	0.7524
					Last	0.7038	0.7430	0.7188	0.7524	
0	0.1	0.3	0.4	0.4	First	0.3916	0.4192	0.4048	0.4192	0.4412
					Last	0.4002	0.4288	0.4112	0.4412	
0	0.05	0.2	0.4	0.4	First	0.4142	0.4426	0.4184	0.4426	0.4734
					Last	0.4292	0.4610	0.4364	0.4734	

Table C.56. Exponential, 5 Trt, RCBD = 10, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0464	0.0450	0.0464	0.0450	0.0484
					Last	0.0470	0.0498	0.0500	0.0484	
0.05	0.15	0.25	0.35	0.45	First	0.6522	0.6740	0.6476	0.6742	0.6944
					Last	0.6556	0.6820	0.6626	0.6944	
0	0.025	0.075	0.175	0.375	First	0.5486	0.5848	0.5616	0.5848	0.6162
					Last	0.5676	0.5988	0.5828	0.6162	
0	0	0	0	0.5	First	0.5470	0.5848	0.5930	0.5848	0.6094
					Last	0.5658	0.6030	0.6098	0.6094	
0	0	0	0.125	0.25	First	0.3468	0.3660	0.3564	0.3660	0.3808
					Last	0.3452	0.3748	0.3622	0.3808	
0	0	0.125	0.25	0.25	First	0.4508	0.4702	0.4414	0.4702	0.4998
					Last	0.4708	0.4884	0.4598	0.4998	
0	0.05	0.05	0.3	0.3	First	0.5070	0.5442	0.5172	0.5442	0.5588
					Last	0.5192	0.5466	0.5262	0.5588	
0.05	0.2	0.3	0.4	0.5	First	0.6994	0.7272	0.7042	0.7272	0.7488
					Last	0.7200	0.7388	0.7198	0.7488	
0	0	0	0.25	0.5	First	0.7696	0.7964	0.7736	0.7964	0.8262
					Last	0.7944	0.8176	0.7914	0.8262	
0	0	0	0.35	0.35	First	0.6484	0.6904	0.6574	0.6904	0.7190
					Last	0.6680	0.7064	0.6804	0.7190	
0	0	0.25	0.25	0.5	First	0.7820	0.8080	0.7816	0.8080	0.8334
					Last	0.7984	0.8156	0.7954	0.8334	
0	0.125	0.25	0.25	0.25	First	0.3506	0.3710	0.3554	0.3710	0.3914
					Last	0.3634	0.3812	0.3680	0.3914	
0	0.125	0.125	0.125	0.25	First	0.2592	0.2746	0.2742	0.2746	0.2854
					Last	0.2618	0.2806	0.2800	0.2854	
0	0.125	0.125	0.125	0.125	First	0.1256	0.1358	0.1354	0.1358	0.1464
					Last	0.1268	0.1410	0.1436	0.1464	
0.125	0.125	0.125	0.25	0.25	First	0.1930	0.2048	0.1944	0.2048	0.2128
					Last	0.1928	0.2048	0.1896	0.2128	
0	0	0	0.1	0.3	First	0.3936	0.4210	0.4158	0.4210	0.4468
					Last	0.4068	0.4342	0.4246	0.4468	
0	0	0	0.2	0.7	First	0.8810	0.9014	0.8892	0.9014	0.9196
					Last	0.8982	0.9120	0.9038	0.9196	
0	0.1	0.1	0.6	0.6	First	0.9182	0.9388	0.9236	0.9388	0.9568
					Last	0.9372	0.9496	0.9370	0.9568	
0	0.1	0.3	0.4	0.4	First	0.6858	0.7116	0.6866	0.7116	0.7396
					Last	0.7036	0.7264	0.6958	0.7396	
0	0.05	0.2	0.4	0.4	First	0.7114	0.7476	0.7144	0.7476	0.7768
					Last	0.7302	0.7586	0.7272	0.7768	

Table C.57. T with 3 d.f., 5 Trt, RCBD = 10, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0484	0.0500	0.0492	0.0500	0.0454
					Last	0.0412	0.0436	0.0462	0.0454	
0.05	0.15	0.25	0.35	0.45	First	0.2644	0.2766	0.2684	0.2766	0.2872
					Last	0.2646	0.2812	0.2726	0.2872	
0	0.025	0.075	0.175	0.375	First	0.2272	0.2500	0.2442	0.2500	0.2606
					Last	0.2316	0.2524	0.2484	0.2606	
0	0	0	0	0.5	First	0.2676	0.2876	0.2906	0.2876	0.3040
					Last	0.2702	0.2914	0.2982	0.3040	
0	0	0	0.125	0.25	First	0.1616	0.1650	0.1660	0.1650	0.1728
					Last	0.1572	0.1664	0.1664	0.1728	
0	0	0.125	0.25	0.25	First	0.1910	0.2046	0.1968	0.2046	0.2156
					Last	0.1886	0.2080	0.2008	0.2156	
0	0.05	0.05	0.3	0.3	First	0.2216	0.2330	0.2218	0.2330	0.2458
					Last	0.2232	0.2388	0.2268	0.2458	
0.05	0.2	0.3	0.4	0.5	First	0.3000	0.3180	0.3114	0.3180	0.3332
					Last	0.3020	0.3288	0.3214	0.3332	
0	0	0	0.25	0.5	First	0.3542	0.3748	0.3708	0.3748	0.3966
					Last	0.3496	0.3872	0.3790	0.3966	
0	0	0	0.35	0.35	First	0.2814	0.3012	0.2872	0.3014	0.3136
					Last	0.2842	0.3012	0.2904	0.3136	
0	0	0.25	0.25	0.5	First	0.3446	0.3758	0.3668	0.3760	0.3952
					Last	0.3568	0.3850	0.3786	0.3952	
0	0.125	0.25	0.25	0.25	First	0.1602	0.1658	0.1574	0.1658	0.1712
					Last	0.1550	0.1678	0.1616	0.1712	
0	0.125	0.125	0.125	0.25	First	0.1288	0.1372	0.1372	0.1372	0.1404
					Last	0.1264	0.1414	0.1456	0.1404	
0	0.125	0.125	0.125	0.125	First	0.0830	0.0844	0.0866	0.0844	0.0862
					Last	0.0820	0.0846	0.0840	0.0862	
0.125	0.125	0.125	0.25	0.25	First	0.1016	0.1048	0.0998	0.1048	0.1126
					Last	0.1064	0.1140	0.1094	0.1126	
0	0	0	0.1	0.3	First	0.1734	0.1826	0.1804	0.1826	0.1922
					Last	0.1704	0.1848	0.1862	0.1922	
0	0	0	0.2	0.7	First	0.4860	0.5190	0.5128	0.5190	0.5454
					Last	0.5024	0.5320	0.5294	0.5454	
0	0.1	0.1	0.6	0.6	First	0.5362	0.5722	0.5498	0.5722	0.5912
					Last	0.5498	0.5812	0.5648	0.5912	
0	0.1	0.3	0.4	0.4	First	0.2974	0.3190	0.3104	0.3190	0.3346
					Last	0.3028	0.3312	0.3178	0.3346	
0	0.05	0.2	0.4	0.4	First	0.3062	0.3338	0.3220	0.3338	0.3480
					Last	0.3172	0.3398	0.3270	0.3480	

Table C.58. Normal, 5 Trt, RCBD = 10, BIBD 1 = 20, BIBD 2 = 20 and BIBD 3 = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0530	0.0494	0.0494	0.0494	0.0508
					Last	0.0492	0.0518	0.0504	0.0508	
0.05	0.15	0.25	0.35	0.45	First	0.4902	0.5290	0.5100	0.5290	0.5448
					Last	0.4838	0.5212	0.5158	0.5448	
0	0.025	0.075	0.175	0.375	First	0.4228	0.4472	0.4366	0.4472	0.4590
					Last	0.4146	0.4434	0.4372	0.4590	
0	0	0	0	0.5	First	0.4850	0.5120	0.5054	0.5120	0.5244
					Last	0.4792	0.5068	0.5140	0.5244	
0	0	0	0.125	0.25	First	0.2582	0.2686	0.2600	0.2686	0.2780
					Last	0.2446	0.2672	0.2606	0.2780	
0	0	0.125	0.25	0.25	First	0.3338	0.3604	0.3428	0.3604	0.3706
					Last	0.3274	0.3540	0.3438	0.3706	
0	0.05	0.05	0.3	0.3	First	0.3838	0.4024	0.3840	0.4024	0.4162
					Last	0.3732	0.4018	0.3882	0.4162	
0.05	0.2	0.3	0.4	0.5	First	0.5536	0.5868	0.5640	0.5868	0.6000
					Last	0.5478	0.5784	0.5690	0.6000	
0	0	0	0.25	0.5	First	0.6298	0.6702	0.6508	0.6702	0.6900
					Last	0.6294	0.6746	0.6600	0.6900	
0	0	0	0.35	0.35	First	0.5138	0.5498	0.5268	0.5498	0.5652
					Last	0.5024	0.5414	0.5234	0.5652	
0	0	0.25	0.25	0.5	First	0.6362	0.6738	0.6564	0.6738	0.6912
					Last	0.6366	0.6708	0.6654	0.6912	
0	0.125	0.25	0.25	0.25	First	0.2490	0.2722	0.2626	0.2722	0.2810
					Last	0.2424	0.2628	0.2624	0.2810	
0	0.125	0.125	0.125	0.25	First	0.1996	0.2104	0.2140	0.2104	0.2188
					Last	0.1894	0.2114	0.2124	0.2188	
0	0.125	0.125	0.125	0.125	First	0.1136	0.1180	0.1194	0.1180	0.1162
					Last	0.1046	0.1100	0.1154	0.1162	
0.125	0.125	0.125	0.25	0.25	First	0.1450	0.1524	0.1474	0.1524	0.1546
					Last	0.1400	0.1488	0.1462	0.1546	
0	0	0	0.1	0.3	First	0.3102	0.3300	0.3262	0.3300	0.3460
					Last	0.3092	0.3296	0.3308	0.3460	
0	0	0	0.2	0.7	First	0.8090	0.8486	0.8378	0.8486	0.8652
					Last	0.8166	0.8486	0.8452	0.8652	
0	0.1	0.1	0.6	0.6	First	0.8590	0.8886	0.8684	0.8886	0.8994
					Last	0.8632	0.8912	0.8782	0.8994	
0	0.1	0.3	0.4	0.4	First	0.5352	0.5716	0.5546	0.5716	0.5890
					Last	0.5338	0.5722	0.5524	0.5890	
0	0.05	0.2	0.4	0.4	First	0.5704	0.6154	0.5882	0.6154	0.6316
					Last	0.5702	0.6124	0.5898	0.6316	

Table C.59. Exponential, 5 Trt, RCBD = 10, BIBD 1 = 20, BIBD 2 = 20 and BIBD 3 = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0546	0.0552	0.0572	0.0552	0.0548
					Last	0.0500	0.0534	0.0524	0.0548	
0.05	0.15	0.25	0.35	0.45	First	0.8044	0.8334	0.8162	0.8334	0.8506
					Last	0.8148	0.8326	0.8178	0.8506	
0	0.025	0.075	0.175	0.375	First	0.7264	0.7600	0.7410	0.7600	0.7748
					Last	0.7246	0.7566	0.7456	0.7748	
0	0	0	0	0.5	First	0.7340	0.7746	0.7762	0.7746	0.7970
					Last	0.7410	0.7826	0.7902	0.7970	
0	0	0	0.125	0.25	First	0.4904	0.5140	0.4930	0.5140	0.5252
					Last	0.4796	0.5028	0.4886	0.5252	
0	0	0.125	0.25	0.25	First	0.6094	0.6478	0.6154	0.6478	0.6640
					Last	0.6090	0.6456	0.6202	0.6640	
0	0.05	0.05	0.3	0.3	First	0.6814	0.7166	0.6892	0.7166	0.7338
					Last	0.6862	0.7176	0.6958	0.7338	
0.05	0.2	0.3	0.4	0.5	First	0.8762	0.8950	0.8716	0.8950	0.9046
					Last	0.8754	0.8920	0.8764	0.9046	
0	0	0	0.25	0.5	First	0.9110	0.9290	0.9140	0.9290	0.9418
					Last	0.9220	0.9336	0.9250	0.9418	
0	0	0	0.35	0.35	First	0.8144	0.8512	0.8218	0.8512	0.8630
					Last	0.8170	0.8462	0.8292	0.8630	
0	0	0.25	0.25	0.5	First	0.9158	0.9366	0.9202	0.9366	0.9434
					Last	0.9194	0.9362	0.9262	0.9434	
0	0.125	0.25	0.25	0.25	First	0.4918	0.5198	0.5028	0.5198	0.5362
					Last	0.4820	0.5162	0.5050	0.5362	
0	0.125	0.125	0.125	0.25	First	0.3710	0.3958	0.3970	0.3958	0.4042
					Last	0.3632	0.3930	0.3970	0.4042	
0	0.125	0.125	0.125	0.125	First	0.1706	0.1794	0.1776	0.1794	0.1836
					Last	0.1654	0.1752	0.1832	0.1836	
0.125	0.125	0.125	0.25	0.25	First	0.2622	0.2806	0.2646	0.2806	0.2860
					Last	0.2560	0.2746	0.2620	0.2860	
0	0	0	0.1	0.3	First	0.5536	0.5886	0.5708	0.5886	0.6018
					Last	0.5498	0.5826	0.5718	0.6018	
0	0	0	0.2	0.7	First	0.9764	0.9834	0.9786	0.9834	0.9850
					Last	0.9780	0.9832	0.9792	0.9850	
0	0.1	0.1	0.6	0.6	First	0.9880	0.9938	0.9886	0.9938	0.9958
					Last	0.9914	0.9942	0.9916	0.9958	
0	0.1	0.3	0.4	0.4	First	0.8596	0.8818	0.8576	0.8818	0.8956
					Last	0.8628	0.8846	0.8648	0.8956	
0	0.05	0.2	0.4	0.4	First	0.8778	0.9072	0.8750	0.9072	0.9162
					Last	0.8804	0.9014	0.8818	0.9162	

Table C.60. T with 3 d.f., 5 Trt, RCBD = 10, BIBD 1 = 20, BIBD 2 = 20 and BIBD 3 = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0486	0.0530	0.0500	0.0530	0.0524
					Last	0.0500	0.0528	0.0518	0.0524	
0.05	0.15	0.25	0.35	0.45	First	0.3670	0.4004	0.3916	0.4004	0.4088
					Last	0.3636	0.3950	0.3924	0.4088	
0	0.025	0.075	0.175	0.375	First	0.3108	0.3364	0.3248	0.3364	0.3436
					Last	0.3020	0.3244	0.3260	0.3436	
0	0	0	0	0.5	First	0.3650	0.3952	0.3980	0.3952	0.4022
					Last	0.3558	0.3892	0.4004	0.4022	
0	0	0	0.125	0.25	First	0.1932	0.2008	0.2000	0.2008	0.2096
					Last	0.1914	0.2026	0.1998	0.2096	
0	0	0.125	0.25	0.25	First	0.2638	0.2798	0.2634	0.2798	0.2882
					Last	0.2480	0.2734	0.2678	0.2882	
0	0.05	0.05	0.3	0.3	First	0.2984	0.3212	0.3024	0.3212	0.3296
					Last	0.2944	0.3168	0.3096	0.3296	
0.05	0.2	0.3	0.4	0.5	First	0.4206	0.4518	0.4474	0.4518	0.4674
					Last	0.4234	0.4492	0.4466	0.4674	
0	0	0	0.25	0.5	First	0.4804	0.5220	0.5074	0.5220	0.5302
					Last	0.4708	0.5092	0.5030	0.5302	
0	0	0	0.35	0.35	First	0.3990	0.4300	0.4038	0.4300	0.4402
					Last	0.3894	0.4160	0.4006	0.4402	
0	0	0.25	0.25	0.5	First	0.4828	0.5154	0.5058	0.5154	0.5286
					Last	0.4718	0.5062	0.5080	0.5286	
0	0.125	0.25	0.25	0.25	First	0.1990	0.2094	0.2088	0.2094	0.2148
					Last	0.1904	0.2066	0.2050	0.2148	
0	0.125	0.125	0.125	0.25	First	0.1576	0.1710	0.1662	0.1710	0.1702
					Last	0.1522	0.1606	0.1666	0.1702	
0	0.125	0.125	0.125	0.125	First	0.0992	0.1042	0.1032	0.1042	0.1028
					Last	0.0936	0.0972	0.0984	0.1028	
0.125	0.125	0.125	0.25	0.25	First	0.1252	0.1324	0.1274	0.1324	0.1360
					Last	0.1224	0.1318	0.1294	0.1360	
0	0	0	0.1	0.3	First	0.2382	0.2488	0.2442	0.2488	0.2582
					Last	0.2330	0.2484	0.2478	0.2582	
0	0	0	0.2	0.7	First	0.6526	0.6910	0.6876	0.6910	0.7136
					Last	0.6578	0.6968	0.7008	0.7136	
0	0.1	0.1	0.6	0.6	First	0.7008	0.7428	0.7112	0.7428	0.7546
					Last	0.6944	0.7368	0.7176	0.7546	
0	0.1	0.3	0.4	0.4	First	0.4118	0.4382	0.4222	0.4382	0.4546
					Last	0.4008	0.4434	0.4308	0.4546	
0	0.05	0.2	0.4	0.4	First	0.4438	0.4666	0.4492	0.4666	0.4844
					Last	0.4368	0.4704	0.4534	0.4844	

Table C.61. Normal, 5 Trt, RCBD = 20, BIBD 1 = 10, BIBD 2 = 20 and BIBD 3 = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0516	0.0532	0.0554	0.0532	0.0504
					Last	0.0546	0.0510	0.0532	0.0504	
0.05	0.15	0.25	0.35	0.45	First	0.5158	0.5444	0.5264	0.5444	0.5646
					Last	0.5350	0.5458	0.5406	0.5646	
0	0.025	0.075	0.175	0.375	First	0.4364	0.4750	0.4642	0.4750	0.4940
					Last	0.4634	0.4792	0.4730	0.4940	
0	0	0	0	0.5	First	0.5188	0.5536	0.5570	0.5536	0.5760
					Last	0.5506	0.5562	0.5628	0.5760	
0	0	0	0.125	0.25	First	0.2692	0.2910	0.2810	0.2910	0.2980
					Last	0.2886	0.2862	0.2844	0.2980	
0	0	0.125	0.25	0.25	First	0.3558	0.3834	0.3656	0.3834	0.4004
					Last	0.3778	0.3910	0.3770	0.4004	
0	0.05	0.05	0.3	0.3	First	0.4200	0.4478	0.4230	0.4478	0.4610
					Last	0.4400	0.4480	0.4334	0.4610	
0.05	0.2	0.3	0.4	0.5	First	0.5734	0.6154	0.5990	0.6154	0.6356
					Last	0.6004	0.6196	0.6086	0.6356	
0	0	0	0.25	0.5	First	0.6864	0.7240	0.7044	0.7240	0.7450
					Last	0.7102	0.7294	0.7148	0.7450	
0	0	0	0.35	0.35	First	0.5422	0.5728	0.5484	0.5728	0.5996
					Last	0.5650	0.5754	0.5532	0.5996	
0	0	0.25	0.25	0.5	First	0.6758	0.7206	0.7036	0.7206	0.7414
					Last	0.7002	0.7174	0.7040	0.7414	
0	0.125	0.25	0.25	0.25	First	0.2774	0.2962	0.2878	0.2962	0.3072
					Last	0.2980	0.2980	0.2954	0.3072	
0	0.125	0.125	0.125	0.25	First	0.2204	0.2322	0.2294	0.2322	0.2386
					Last	0.2292	0.2316	0.2380	0.2386	
0	0.125	0.125	0.125	0.125	First	0.1148	0.1150	0.1190	0.1150	0.1206
					Last	0.1186	0.1192	0.1190	0.1206	
0.125	0.125	0.125	0.25	0.25	First	0.1582	0.1668	0.1602	0.1668	0.1684
					Last	0.1646	0.1642	0.1612	0.1684	
0	0	0	0.1	0.3	First	0.3098	0.3400	0.3314	0.3400	0.3544
					Last	0.3394	0.3456	0.3386	0.3544	
0	0	0	0.2	0.7	First	0.8432	0.8758	0.8656	0.8758	0.8882
					Last	0.8660	0.8776	0.8770	0.8882	
0	0.1	0.1	0.6	0.6	First	0.8800	0.9120	0.8908	0.9120	0.9262
					Last	0.9044	0.9152	0.9052	0.9262	
0	0.1	0.3	0.4	0.4	First	0.5848	0.6202	0.5950	0.6202	0.6376
					Last	0.6066	0.6090	0.5976	0.6376	
0	0.05	0.2	0.4	0.4	First	0.6134	0.6484	0.6202	0.6484	0.6696
					Last	0.6400	0.6488	0.6266	0.6696	

Table C.62. Exponential, 5 Trt, RCBD = 20, BIBD 1 = 10, BIBD 2 = 20 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0540	0.0542	0.0514	0.0542	0.0524
					Last	0.0558	0.0534	0.0522	0.0524	
0.05	0.15	0.25	0.35	0.45	First	0.8476	0.8732	0.8524	0.8732	0.8916
					Last	0.8718	0.8772	0.8612	0.8916	
0	0.025	0.075	0.175	0.375	First	0.7760	0.8102	0.7952	0.8102	0.8306
					Last	0.8000	0.8122	0.8012	0.8306	
0	0	0	0	0.5	First	0.7684	0.8072	0.8128	0.8072	0.8344
					Last	0.8018	0.8186	0.8304	0.8344	
0	0	0	0.125	0.25	First	0.5324	0.5696	0.5518	0.5696	0.5936
					Last	0.5626	0.5728	0.5618	0.5936	
0	0	0.125	0.25	0.25	First	0.6532	0.6946	0.6646	0.6946	0.7160
					Last	0.6860	0.7002	0.6748	0.7160	
0	0.05	0.05	0.3	0.3	First	0.7372	0.7772	0.7506	0.7772	0.7972
					Last	0.7530	0.7768	0.7560	0.7972	
0.05	0.2	0.3	0.4	0.5	First	0.8946	0.9166	0.8960	0.9166	0.9250
					Last	0.9106	0.9142	0.8990	0.9250	
0	0	0	0.25	0.5	First	0.9362	0.9500	0.9394	0.9500	0.9620
					Last	0.9478	0.9536	0.9434	0.9620	
0	0	0	0.35	0.35	First	0.8620	0.8936	0.8672	0.8936	0.9096
					Last	0.8818	0.8968	0.8806	0.9096	
0	0	0.25	0.25	0.5	First	0.9406	0.9558	0.9474	0.9558	0.9638
					Last	0.9536	0.9572	0.9490	0.9638	
0	0.125	0.25	0.25	0.25	First	0.5192	0.5500	0.5326	0.5500	0.5694
					Last	0.5416	0.5520	0.5424	0.5694	
0	0.125	0.125	0.125	0.25	First	0.3992	0.4188	0.4178	0.4188	0.4388
					Last	0.4214	0.4194	0.4198	0.4388	
0	0.125	0.125	0.125	0.125	First	0.1734	0.1840	0.1826	0.1840	0.1910
					Last	0.1844	0.1838	0.1858	0.1910	
0.125	0.125	0.125	0.25	0.25	First	0.2798	0.2948	0.2830	0.2948	0.3126
					Last	0.2958	0.2974	0.2860	0.3126	
0	0	0	0.1	0.3	First	0.5840	0.6174	0.6082	0.6174	0.6418
					Last	0.6178	0.6242	0.6144	0.6418	
0	0	0	0.2	0.7	First	0.9844	0.9888	0.9848	0.9888	0.9920
					Last	0.9906	0.9912	0.9884	0.9920	
0	0.1	0.1	0.6	0.6	First	0.9922	0.9956	0.9922	0.9956	0.9970
					Last	0.9956	0.9956	0.9940	0.9970	
0	0.1	0.3	0.4	0.4	First	0.8818	0.9080	0.8836	0.9080	0.9232
					Last	0.9030	0.9106	0.8920	0.9232	
0	0.05	0.2	0.4	0.4	First	0.9034	0.9312	0.9110	0.9312	0.9410
					Last	0.9234	0.9304	0.9126	0.9410	

Table C.63. T with 3 d.f., 5 Trt, RCBD = 20, BIBD 1 = 10, BIBD 2 = 20 and BIBD 3 = 30

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0512	0.0506	0.0508	0.0506	0.0514
					Last	0.0528	0.0516	0.0542	0.0514	
0.05	0.15	0.25	0.35	0.45	First	0.3918	0.4192	0.4104	0.4192	0.4416
					Last	0.4228	0.4292	0.4246	0.4416	
0	0.025	0.075	0.175	0.375	First	0.3370	0.3624	0.3586	0.3624	0.3796
					Last	0.3558	0.3618	0.3576	0.3796	
0	0	0	0	0.5	First	0.3716	0.3956	0.4054	0.3956	0.4150
					Last	0.3912	0.4048	0.4106	0.4150	
0	0	0	0.125	0.25	First	0.2144	0.2288	0.2208	0.2288	0.2446
					Last	0.2304	0.2350	0.2328	0.2446	
0	0	0.125	0.25	0.25	First	0.2644	0.2840	0.2718	0.2840	0.2926
					Last	0.2746	0.2822	0.2720	0.2926	
0	0.05	0.05	0.3	0.3	First	0.3168	0.3400	0.3180	0.3400	0.3494
					Last	0.3380	0.3414	0.3270	0.3494	
0.05	0.2	0.3	0.4	0.5	First	0.4496	0.4804	0.4650	0.4804	0.5024
					Last	0.4792	0.4888	0.4820	0.5024	
0	0	0	0.25	0.5	First	0.5272	0.5696	0.5532	0.5696	0.5960
					Last	0.5592	0.5784	0.5670	0.5960	
0	0	0	0.35	0.35	First	0.4056	0.4370	0.4170	0.4370	0.4478
					Last	0.4300	0.4388	0.4196	0.4478	
0	0	0.25	0.25	0.5	First	0.5368	0.5740	0.5532	0.5740	0.5930
					Last	0.5556	0.5738	0.5582	0.5930	
0	0.125	0.25	0.25	0.25	First	0.2078	0.2282	0.2222	0.2282	0.2350
					Last	0.2248	0.2294	0.2258	0.2350	
0	0.125	0.125	0.125	0.25	First	0.1740	0.1850	0.1820	0.1850	0.1844
					Last	0.1804	0.1804	0.1872	0.1844	
0	0.125	0.125	0.125	0.125	First	0.0910	0.0948	0.0964	0.0948	0.0974
					Last	0.0994	0.0962	0.0992	0.0974	
0.125	0.125	0.125	0.25	0.25	First	0.1224	0.1264	0.1238	0.1264	0.1334
					Last	0.1274	0.1296	0.1296	0.1334	
0	0	0	0.1	0.3	First	0.2460	0.2622	0.2576	0.2622	0.2772
					Last	0.2680	0.2630	0.2634	0.2772	
0	0	0	0.2	0.7	First	0.6762	0.7198	0.7074	0.7198	0.7390
					Last	0.7056	0.7200	0.7210	0.7390	
0	0.1	0.1	0.6	0.6	First	0.7482	0.7862	0.7598	0.7862	0.8104
					Last	0.7768	0.7934	0.7754	0.8104	
0	0.1	0.3	0.4	0.4	First	0.4440	0.4788	0.4564	0.4788	0.4944
					Last	0.4684	0.4798	0.4628	0.4944	
0	0.05	0.2	0.4	0.4	First	0.4492	0.4858	0.4684	0.4858	0.5040
					Last	0.4714	0.4868	0.4704	0.5040	

Table C.64. Normal, 5 Trt, RCBD = 30, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0476	0.0474	0.0500	0.0474	0.0474
					Last	0.0494	0.0474	0.0476	0.0474	
0.05	0.15	0.25	0.35	0.45	First	0.4680	0.4922	0.4770	0.4924	0.5792
					Last	0.5586	0.5698	0.5650	0.5792	
0	0.025	0.075	0.175	0.375	First	0.4100	0.4340	0.4244	0.4340	0.5138
					Last	0.4952	0.5000	0.5034	0.5138	
0	0	0	0	0.5	First	0.4676	0.4970	0.5098	0.4970	0.6006
					Last	0.5600	0.5742	0.5918	0.6006	
0	0	0	0.125	0.25	First	0.2548	0.2690	0.2718	0.2690	0.3170
					Last	0.3078	0.3150	0.3148	0.3170	
0	0	0.125	0.25	0.25	First	0.3140	0.3378	0.3236	0.3378	0.3970
					Last	0.3850	0.3940	0.3842	0.3970	
0	0.05	0.05	0.3	0.3	First	0.3752	0.4050	0.3838	0.4050	0.4746
					Last	0.4556	0.4682	0.4560	0.4746	
0.05	0.2	0.3	0.4	0.5	First	0.5236	0.5558	0.5466	0.5558	0.6492
					Last	0.6242	0.6382	0.6426	0.6492	
0	0	0	0.25	0.5	First	0.6208	0.6542	0.6386	0.6542	0.7466
					Last	0.7288	0.7374	0.7300	0.7466	
0	0	0	0.35	0.35	First	0.4900	0.5298	0.5070	0.5298	0.6128
					Last	0.5860	0.5992	0.5808	0.6128	
0	0	0.25	0.25	0.5	First	0.6294	0.6582	0.6408	0.6582	0.7490
					Last	0.7330	0.7428	0.7336	0.7490	
0	0.125	0.25	0.25	0.25	First	0.2516	0.2646	0.2554	0.2646	0.3098
					Last	0.2994	0.3026	0.3008	0.3098	
0	0.125	0.125	0.125	0.25	First	0.1970	0.2062	0.2118	0.2062	0.2382
					Last	0.2346	0.2298	0.2346	0.2382	
0	0.125	0.125	0.125	0.125	First	0.0990	0.1050	0.1042	0.1050	0.1200
					Last	0.1228	0.1168	0.1186	0.1200	
0.125	0.125	0.125	0.25	0.25	First	0.1464	0.1522	0.1458	0.1522	0.1714
					Last	0.1698	0.1676	0.1650	0.1714	
0	0	0	0.1	0.3	First	0.2960	0.3134	0.3056	0.3134	0.3708
					Last	0.3578	0.3644	0.3642	0.3708	
0	0	0	0.2	0.7	First	0.7934	0.8342	0.8270	0.8342	0.9018
					Last	0.8826	0.8930	0.8962	0.9018	
0	0.1	0.1	0.6	0.6	First	0.8450	0.8646	0.8436	0.8646	0.9334
					Last	0.9204	0.9300	0.9192	0.9334	
0	0.1	0.3	0.4	0.4	First	0.5222	0.5518	0.5332	0.5518	0.6364
					Last	0.6202	0.6316	0.6198	0.6364	
0	0.05	0.2	0.4	0.4	First	0.5558	0.5870	0.5598	0.5870	0.6814
					Last	0.6584	0.6706	0.6516	0.6814	

Table C.65. Exponential, 5 Trt, RCBD = 30, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0506	0.0476	0.0504	0.0476	0.0472
					Last	0.0514	0.0486	0.0508	0.0472	
0.05	0.15	0.25	0.35	0.45	First	0.8050	0.8234	0.7940	0.8234	0.8986
					Last	0.8868	0.8908	0.8778	0.8986	
0	0.025	0.075	0.175	0.375	First	0.7240	0.7522	0.7252	0.7522	0.8376
					Last	0.8232	0.8304	0.8226	0.8376	
0	0	0	0	0.5	First	0.7374	0.7654	0.7700	0.7654	0.8650
					Last	0.8320	0.8442	0.8574	0.8650	
0	0	0	0.125	0.25	First	0.4892	0.5124	0.4946	0.5124	0.5968
					Last	0.5728	0.5814	0.5750	0.5968	
0	0	0.125	0.25	0.25	First	0.5910	0.6232	0.5972	0.6232	0.7148
					Last	0.6892	0.7012	0.6794	0.7148	
0	0.05	0.05	0.3	0.3	First	0.6634	0.6956	0.6754	0.6956	0.7928
					Last	0.7680	0.7824	0.7620	0.7928	
0.05	0.2	0.3	0.4	0.5	First	0.8634	0.8774	0.8616	0.8774	0.9318
					Last	0.9252	0.9244	0.9164	0.9318	
0	0	0	0.25	0.5	First	0.9056	0.9222	0.9124	0.9222	0.9674
					Last	0.9638	0.9646	0.9590	0.9674	
0	0	0	0.35	0.35	First	0.7990	0.8396	0.8070	0.8396	0.9118
					Last	0.8896	0.9002	0.8862	0.9118	
0	0	0.25	0.25	0.5	First	0.9086	0.9222	0.9100	0.9222	0.9674
					Last	0.9666	0.9666	0.9606	0.9674	
0	0.125	0.25	0.25	0.25	First	0.4824	0.5074	0.4982	0.5074	0.5894
					Last	0.5656	0.5758	0.5750	0.5894	
0	0.125	0.125	0.125	0.25	First	0.3574	0.3826	0.3812	0.3826	0.4556
					Last	0.4444	0.4416	0.4504	0.4556	
0	0.125	0.125	0.125	0.125	First	0.1652	0.1704	0.1716	0.1704	0.1922
					Last	0.1880	0.1888	0.1936	0.1922	
0.125	0.125	0.125	0.25	0.25	First	0.2512	0.2636	0.2484	0.2636	0.3072
					Last	0.2958	0.2986	0.2902	0.3072	
0	0	0	0.1	0.3	First	0.5502	0.5780	0.5602	0.5780	0.6632
					Last	0.6488	0.6518	0.6472	0.6632	
0	0	0	0.2	0.7	First	0.9782	0.9814	0.9776	0.9814	0.9956
					Last	0.9952	0.9950	0.9944	0.9956	
0	0.1	0.1	0.6	0.6	First	0.9848	0.9886	0.9816	0.9886	0.9984
					Last	0.9972	0.9982	0.9968	0.9984	
0	0.1	0.3	0.4	0.4	First	0.8436	0.8676	0.8446	0.8676	0.9290
					Last	0.9172	0.9224	0.9126	0.9290	
0	0.05	0.2	0.4	0.4	First	0.8706	0.8906	0.8712	0.8906	0.9460
					Last	0.9434	0.9462	0.9380	0.9460	

Table C.66. T with 3 d.f., 5 Trt, RCBD = 30, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0480	0.0496	0.0474	0.0496	0.0454
					Last	0.0490	0.0450	0.0462	0.0454	
0.05	0.15	0.25	0.35	0.45	First	0.3556	0.3818	0.3684	0.3818	0.4556
					Last	0.4370	0.4478	0.4416	0.4556	
0	0.025	0.075	0.175	0.375	First	0.3042	0.3284	0.3234	0.3284	0.3896
					Last	0.3760	0.3820	0.3840	0.3896	
0	0	0	0	0.5	First	0.3546	0.3676	0.3704	0.3676	0.4442
					Last	0.4274	0.4270	0.4396	0.4442	
0	0	0	0.125	0.25	First	0.1964	0.2080	0.1980	0.2080	0.2434
					Last	0.2364	0.2364	0.2328	0.2434	
0	0	0.125	0.25	0.25	First	0.2434	0.2648	0.2498	0.2648	0.3022
					Last	0.2976	0.2968	0.2914	0.3022	
0	0.05	0.05	0.3	0.3	First	0.2912	0.3120	0.3024	0.3122	0.3596
					Last	0.3484	0.3526	0.3476	0.3596	
0.05	0.2	0.3	0.4	0.5	First	0.4098	0.4306	0.4166	0.4306	0.5078
					Last	0.4886	0.5006	0.4924	0.5078	
0	0	0	0.25	0.5	First	0.4836	0.5130	0.4992	0.5130	0.5930
					Last	0.5756	0.5806	0.5766	0.5930	
0	0	0	0.35	0.35	First	0.3850	0.4138	0.3888	0.4138	0.4818
					Last	0.4644	0.4694	0.4498	0.4818	
0	0	0.25	0.25	0.5	First	0.4794	0.5076	0.4934	0.5076	0.5976
					Last	0.5728	0.5838	0.5836	0.5976	
0	0.125	0.25	0.25	0.25	First	0.1932	0.2036	0.2024	0.2036	0.2368
					Last	0.2358	0.2356	0.2310	0.2368	
0	0.125	0.125	0.125	0.25	First	0.1674	0.1706	0.1664	0.1706	0.1874
					Last	0.1888	0.1898	0.1924	0.1874	
0	0.125	0.125	0.125	0.125	First	0.0966	0.0966	0.0986	0.0966	0.1042
					Last	0.1014	0.1014	0.1036	0.1042	
0.125	0.125	0.125	0.25	0.25	First	0.1152	0.1238	0.1192	0.1238	0.1402
					Last	0.1354	0.1402	0.1370	0.1402	
0	0	0	0.1	0.3	First	0.2266	0.2458	0.2428	0.2458	0.2804
					Last	0.2696	0.2740	0.2760	0.2804	
0	0	0	0.2	0.7	First	0.6438	0.6806	0.6700	0.6808	0.7688
					Last	0.7430	0.7562	0.7646	0.7688	
0	0.1	0.1	0.6	0.6	First	0.7020	0.7356	0.7082	0.7356	0.8200
					Last	0.8028	0.8160	0.8014	0.8200	
0	0.1	0.3	0.4	0.4	First	0.4030	0.4302	0.4104	0.4302	0.5028
					Last	0.4830	0.4966	0.4866	0.5028	
0	0.05	0.2	0.4	0.4	First	0.4392	0.4670	0.4484	0.4670	0.5398
					Last	0.5244	0.5342	0.5208	0.5398	

Table C.67. Normal, 5 Trt, RCBD = 60, BIBD 1 = 20, BIBD 2 = 20 and BIBD 3 = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0472	0.0484	0.0502	0.0484	0.0520
					Last	0.0512	0.0532	0.0518	0.0520	
0.05	0.15	0.25	0.35	0.45	First	0.7266	0.7554	0.7366	0.7554	0.8342
					Last	0.8086	0.8232	0.8126	0.8342	
0	0.025	0.075	0.175	0.375	First	0.6266	0.6718	0.6634	0.6718	0.7736
					Last	0.7412	0.7618	0.7612	0.7736	
0	0	0	0	0.5	First	0.7046	0.7416	0.7524	0.7416	0.8242
					Last	0.7946	0.8124	0.8264	0.8242	
0	0	0	0.125	0.25	First	0.3930	0.4174	0.4128	0.4174	0.4934
					Last	0.4690	0.4902	0.4830	0.4934	
0	0	0.125	0.25	0.25	First	0.5010	0.5360	0.5114	0.5358	0.6270
					Last	0.5874	0.6154	0.5912	0.6270	
0	0.05	0.05	0.3	0.3	First	0.6022	0.6422	0.6166	0.6422	0.7336
					Last	0.6970	0.7240	0.7012	0.7336	
0.05	0.2	0.3	0.4	0.5	First	0.7930	0.8270	0.8116	0.8270	0.8900
					Last	0.8660	0.8810	0.8774	0.8900	
0	0	0	0.25	0.5	First	0.8700	0.8968	0.8824	0.8968	0.9502
					Last	0.9320	0.9436	0.9406	0.9502	
0	0	0	0.35	0.35	First	0.7672	0.7988	0.7710	0.7988	0.8724
					Last	0.8384	0.8614	0.8464	0.8724	
0	0	0.25	0.25	0.5	First	0.8684	0.8978	0.8880	0.8978	0.9498
					Last	0.9324	0.9448	0.9420	0.9498	
0	0.125	0.25	0.25	0.25	First	0.4052	0.4260	0.4078	0.4258	0.4962
					Last	0.4654	0.4842	0.4768	0.4962	
0	0.125	0.125	0.125	0.25	First	0.2862	0.3144	0.3164	0.3144	0.3622
					Last	0.3364	0.3548	0.3648	0.3622	
0	0.125	0.125	0.125	0.125	First	0.1362	0.1480	0.1508	0.1480	0.1650
					Last	0.1586	0.1630	0.1704	0.1650	
0.125	0.125	0.125	0.25	0.25	First	0.2108	0.2160	0.2066	0.2160	0.2536
					Last	0.2374	0.2470	0.2382	0.2536	
0	0	0	0.1	0.3	First	0.4698	0.4982	0.4918	0.4982	0.5836
					Last	0.5482	0.5712	0.5696	0.5836	
0	0	0	0.2	0.7	First	0.9718	0.9794	0.9766	0.9794	0.9942
					Last	0.9912	0.9930	0.9928	0.9942	
0	0.1	0.1	0.6	0.6	First	0.9818	0.9880	0.9840	0.9880	0.9978
					Last	0.9968	0.9974	0.9968	0.9978	
0	0.1	0.3	0.4	0.4	First	0.7892	0.8232	0.8004	0.8232	0.8920
					Last	0.8684	0.8834	0.8732	0.8920	
0	0.05	0.2	0.4	0.4	First	0.8182	0.8452	0.8294	0.8452	0.9106
					Last	0.8916	0.9048	0.8950	0.9106	

Table C.68. Exponential, 5 Trt, RCBD = 60, BIBD 1 = 20, BIBD 2 = 20 and BIBD 3 = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0514	0.0534	0.0534	0.0534	0.0532
					Last	0.0550	0.0550	0.0572	0.0532	
0.05	0.15	0.25	0.35	0.45	First	0.9732	0.9772	0.9674	0.9772	0.9950
					Last	0.9908	0.9922	0.9896	0.9950	
0	0.025	0.075	0.175	0.375	First	0.9340	0.9434	0.9364	0.9434	0.9776
					Last	0.9746	0.9754	0.9728	0.9776	
0	0	0	0	0.5	First	0.9384	0.9568	0.9604	0.9568	0.9852
					Last	0.9790	0.9830	0.9842	0.9852	
0	0	0	0.125	0.25	First	0.7322	0.7586	0.7374	0.7586	0.8456
					Last	0.8192	0.8350	0.8218	0.8456	
0	0	0.125	0.25	0.25	First	0.8510	0.8754	0.8452	0.8754	0.9366
					Last	0.9200	0.9296	0.9132	0.9366	
0	0.05	0.05	0.3	0.3	First	0.9112	0.9282	0.9138	0.9282	0.9650
					Last	0.9576	0.9616	0.9568	0.9650	
0.05	0.2	0.3	0.4	0.5	First	0.9860	0.9910	0.9866	0.9910	0.9966
					Last	0.9950	0.9960	0.9954	0.9966	
0	0	0	0.25	0.5	First	0.9970	0.9984	0.9968	0.9984	1.0000
					Last	0.9996	0.9998	1.0000	1.0000	
0	0	0	0.35	0.35	First	0.9742	0.9850	0.9774	0.9850	0.9956
					Last	0.9924	0.9954	0.9930	0.9956	
0	0	0.25	0.25	0.5	First	0.9962	0.9970	0.9956	0.9970	0.9998
					Last	0.9998	0.9998	0.9996	0.9998	
0	0.125	0.25	0.25	0.25	First	0.7232	0.7518	0.7348	0.7518	0.8348
					Last	0.8058	0.8280	0.8160	0.8348	
0	0.125	0.125	0.125	0.25	First	0.5808	0.6148	0.6088	0.6148	0.7030
					Last	0.6750	0.6892	0.6996	0.7030	
0	0.125	0.125	0.125	0.125	First	0.2432	0.2568	0.2554	0.2568	0.2980
					Last	0.2826	0.2894	0.2958	0.2980	
0.125	0.125	0.125	0.25	0.25	First	0.4004	0.4302	0.4092	0.4302	0.5082
					Last	0.4784	0.5000	0.4850	0.5082	
0	0	0	0.1	0.3	First	0.7992	0.8228	0.8140	0.8228	0.9086
					Last	0.8860	0.9022	0.8976	0.9086	
0	0	0	0.2	0.7	First	0.9996	1.0000	1.0000	1.0000	1.0000
					Last	1.0000	1.0000	1.0000	1.0000	
0	0.1	0.1	0.6	0.6	First	0.9998	1.0000	1.0000	1.0000	1.0000
					Last	1.0000	1.0000	1.0000	1.0000	
0	0.1	0.3	0.4	0.4	First	0.9822	0.9890	0.9850	0.9890	0.9972
					Last	0.9954	0.9970	0.9960	0.9972	
0	0.05	0.2	0.4	0.4	First	0.9868	0.9910	0.9870	0.9910	0.9970
					Last	0.9966	0.9974	0.9962	0.9970	

Table C.69. T with 3 d.f., 5 Trt, RCBD = 60, BIBD 1 = 20, BIBD 2 = 20 and BIBD 3 = 20

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0560	0.0516	0.0538	0.0516	0.0550
					Last	0.0522	0.0524	0.0524	0.0550	
0.05	0.15	0.25	0.35	0.45	First	0.5678	0.5984	0.5848	0.5984	0.6970
					Last	0.6620	0.6864	0.6752	0.6970	
0	0.025	0.075	0.175	0.375	First	0.4892	0.5212	0.5100	0.5212	0.6058
					Last	0.5668	0.5944	0.5828	0.6058	
0	0	0	0	0.5	First	0.5526	0.5882	0.5984	0.5882	0.6836
					Last	0.6494	0.6752	0.6900	0.6836	
0	0	0	0.125	0.25	First	0.3014	0.3172	0.3110	0.3172	0.3744
					Last	0.3526	0.3672	0.3662	0.3744	
0	0	0.125	0.25	0.25	First	0.3932	0.4124	0.3950	0.4124	0.4854
					Last	0.4542	0.4726	0.4528	0.4854	
0	0.05	0.05	0.3	0.3	First	0.4548	0.4840	0.4556	0.4840	0.5630
					Last	0.5348	0.5496	0.5344	0.5630	
0.05	0.2	0.3	0.4	0.5	First	0.6350	0.6610	0.6488	0.6610	0.7582
					Last	0.7262	0.7484	0.7442	0.7582	
0	0	0	0.25	0.5	First	0.7238	0.7556	0.7432	0.7556	0.8450
					Last	0.8188	0.8408	0.8314	0.8450	
0	0	0	0.35	0.35	First	0.6022	0.6362	0.6062	0.6362	0.7304
					Last	0.6960	0.7178	0.6926	0.7304	
0	0	0.25	0.25	0.5	First	0.7352	0.7660	0.7536	0.7660	0.8520
					Last	0.8250	0.8444	0.8390	0.8520	
0	0.125	0.25	0.25	0.25	First	0.3126	0.3270	0.3208	0.3270	0.3828
					Last	0.3582	0.3704	0.3650	0.3828	
0	0.125	0.125	0.125	0.25	First	0.2248	0.2400	0.2390	0.2400	0.2838
					Last	0.2612	0.2776	0.2886	0.2838	
0	0.125	0.125	0.125	0.125	First	0.1186	0.1274	0.1270	0.1274	0.1384
					Last	0.1302	0.1334	0.1346	0.1384	
0.125	0.125	0.125	0.25	0.25	First	0.1690	0.1776	0.1728	0.1776	0.1966
					Last	0.1864	0.1956	0.1898	0.1966	
0	0	0	0.1	0.3	First	0.3576	0.3766	0.3722	0.3766	0.4456
					Last	0.4126	0.4318	0.4286	0.4456	
0	0	0	0.2	0.7	First	0.8862	0.9112	0.9064	0.9112	0.9608
					Last	0.9478	0.9564	0.9570	0.9608	
0	0.1	0.1	0.6	0.6	First	0.9150	0.9346	0.9256	0.9346	0.9744
					Last	0.9638	0.9730	0.9670	0.9744	
0	0.1	0.3	0.4	0.4	First	0.6402	0.6664	0.6412	0.6664	0.7546
					Last	0.7202	0.7408	0.7288	0.7546	
0	0.05	0.2	0.4	0.4	First	0.6668	0.7046	0.6788	0.7046	0.8004
					Last	0.7646	0.7898	0.7726	0.8004	

Table C.70. Normal, 5 Trt, RCBD = 40, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0470	0.0526	0.0506	0.0526	0.0474
					Last	0.0470	0.0508	0.0510	0.0474	
0.05	0.15	0.25	0.35	0.45	First	0.5116	0.5430	0.5318	0.5430	0.6676
					Last	0.6282	0.6598	0.6500	0.6676	
0	0.025	0.075	0.175	0.375	First	0.4492	0.4778	0.4682	0.4778	0.5720
					Last	0.5452	0.5690	0.5570	0.5720	
0	0	0	0	0.5	First	0.5136	0.5438	0.5576	0.5438	0.6596
					Last	0.6282	0.6542	0.6650	0.6596	
0	0	0	0.125	0.25	First	0.2856	0.3058	0.2976	0.3058	0.3646
					Last	0.3418	0.3632	0.3528	0.3646	
0	0	0.125	0.25	0.25	First	0.3522	0.3832	0.3648	0.3832	0.4640
					Last	0.4372	0.4578	0.4410	0.4640	
0	0.05	0.05	0.3	0.3	First	0.4188	0.4478	0.4272	0.4478	0.5548
					Last	0.5230	0.5468	0.5312	0.5548	
0.05	0.2	0.3	0.4	0.5	First	0.5770	0.6092	0.5940	0.6092	0.7350
					Last	0.7044	0.7298	0.7174	0.7350	
0	0	0	0.25	0.5	First	0.6840	0.7140	0.6998	0.7140	0.8264
					Last	0.7980	0.8208	0.8116	0.8264	
0	0	0	0.35	0.35	First	0.5502	0.5894	0.5638	0.5894	0.6970
					Last	0.6630	0.6908	0.6688	0.6970	
0	0	0.25	0.25	0.5	First	0.6788	0.7072	0.6966	0.7072	0.8322
					Last	0.8012	0.8272	0.8150	0.8322	
0	0.125	0.25	0.25	0.25	First	0.2750	0.2916	0.2870	0.2916	0.3536
					Last	0.3364	0.3488	0.3410	0.3536	
0	0.125	0.125	0.125	0.25	First	0.2142	0.2216	0.2242	0.2216	0.2706
					Last	0.2514	0.2666	0.2700	0.2706	
0	0.125	0.125	0.125	0.125	First	0.1014	0.1098	0.1064	0.1098	0.1316
					Last	0.1164	0.1234	0.1256	0.1316	
0.125	0.125	0.125	0.25	0.25	First	0.1520	0.1590	0.1566	0.1590	0.2044
					Last	0.1770	0.1948	0.1842	0.2044	
0	0	0	0.1	0.3	First	0.3208	0.3424	0.3334	0.3424	0.4218
					Last	0.3908	0.4154	0.4162	0.4218	
0	0	0	0.2	0.7	First	0.8390	0.8684	0.8664	0.8684	0.9550
					Last	0.9318	0.9454	0.9434	0.9550	
0	0.1	0.1	0.6	0.6	First	0.8900	0.9166	0.8998	0.9168	0.9722
					Last	0.9598	0.9698	0.9622	0.9722	
0	0.1	0.3	0.4	0.4	First	0.5832	0.6146	0.5938	0.6146	0.7316
					Last	0.7050	0.7240	0.7052	0.7316	
0	0.05	0.2	0.4	0.4	First	0.6100	0.6540	0.6246	0.6542	0.7588
					Last	0.7292	0.7562	0.7298	0.7588	

Table C.71. Exponential, 5 Trt, RCBD = 40, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0464	0.0496	0.0496	0.0496	0.0548
					Last	0.0538	0.0568	0.0564	0.0548	
0.05	0.15	0.25	0.35	0.45	First	0.8512	0.8710	0.8516	0.8710	0.9450
					Last	0.9362	0.9420	0.9284	0.9450	
0	0.025	0.075	0.175	0.375	First	0.7786	0.7954	0.7766	0.7954	0.8940
					Last	0.8808	0.8884	0.8804	0.8940	
0	0	0	0	0.5	First	0.7746	0.8138	0.8148	0.8138	0.9094
					Last	0.8896	0.9074	0.9112	0.9094	
0	0	0	0.125	0.25	First	0.5250	0.5554	0.5316	0.5554	0.6688
					Last	0.6370	0.6626	0.6442	0.6688	
0	0	0.125	0.25	0.25	First	0.6580	0.6860	0.6580	0.6860	0.8030
					Last	0.7758	0.7966	0.7708	0.8030	
0	0.05	0.05	0.3	0.3	First	0.7378	0.7638	0.7394	0.7638	0.8740
					Last	0.8454	0.8648	0.8440	0.8740	
0.05	0.2	0.3	0.4	0.5	First	0.9026	0.9144	0.9028	0.9144	0.9704
					Last	0.9674	0.9696	0.9636	0.9704	
0	0	0	0.25	0.5	First	0.9418	0.9512	0.9372	0.9512	0.9862
					Last	0.9834	0.9852	0.9816	0.9862	
0	0	0	0.35	0.35	First	0.8470	0.8740	0.8552	0.8742	0.9620
					Last	0.9392	0.9520	0.9408	0.9620	
0	0	0.25	0.25	0.5	First	0.9422	0.9558	0.9454	0.9560	0.9862
					Last	0.9834	0.9854	0.9820	0.9862	
0	0.125	0.25	0.25	0.25	First	0.5186	0.5442	0.5332	0.5442	0.6596
					Last	0.6264	0.6584	0.6460	0.6596	
0	0.125	0.125	0.125	0.25	First	0.3986	0.4210	0.4218	0.4210	0.5134
					Last	0.4836	0.5066	0.5102	0.5134	
0	0.125	0.125	0.125	0.125	First	0.1752	0.1898	0.1936	0.1898	0.2314
					Last	0.2090	0.2206	0.2256	0.2314	
0.125	0.125	0.125	0.25	0.25	First	0.2732	0.2874	0.2772	0.2874	0.3592
					Last	0.3352	0.3566	0.3366	0.3592	
0	0	0	0.1	0.3	First	0.5838	0.6086	0.6032	0.6086	0.7314
					Last	0.7136	0.7292	0.7188	0.7314	
0	0	0	0.2	0.7	First	0.9854	0.9910	0.9882	0.9910	0.9988
					Last	0.9988	0.9984	0.9986	0.9988	
0	0.1	0.1	0.6	0.6	First	0.9932	0.9954	0.9932	0.9954	0.9998
					Last	0.9996	0.9998	0.9998	0.9998	
0	0.1	0.3	0.4	0.4	First	0.8940	0.9106	0.8900	0.9106	0.9660
					Last	0.9564	0.9646	0.9580	0.9660	
0	0.05	0.2	0.4	0.4	First	0.9138	0.9266	0.9036	0.9266	0.9768
					Last	0.9696	0.9748	0.9668	0.9768	

Table C.72. T with 3 d.f., 5 Trt, RCBD = 40, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0532	0.0510	0.0518	0.0510	0.0478
					Last	0.0430	0.0468	0.0482	0.0478	
0.05	0.15	0.25	0.35	0.45	First	0.3904	0.4122	0.4056	0.4122	0.5048
					Last	0.4758	0.5038	0.4900	0.5048	
0	0.025	0.075	0.175	0.375	First	0.3378	0.3558	0.3520	0.3558	0.4400
					Last	0.4186	0.4324	0.4258	0.4400	
0	0	0	0	0.5	First	0.3916	0.4116	0.4172	0.4116	0.5004
					Last	0.4700	0.4932	0.5056	0.5004	
0	0	0	0.125	0.25	First	0.2186	0.2282	0.2258	0.2282	0.2748
					Last	0.2608	0.2724	0.2616	0.2748	
0	0	0.125	0.25	0.25	First	0.2726	0.2872	0.2742	0.2872	0.3506
					Last	0.3360	0.3480	0.3348	0.3506	
0	0.05	0.05	0.3	0.3	First	0.3144	0.3312	0.3132	0.3312	0.4052
					Last	0.3804	0.4026	0.3892	0.4052	
0.05	0.2	0.3	0.4	0.5	First	0.4474	0.4700	0.4626	0.4700	0.5866
					Last	0.5582	0.5850	0.5718	0.5866	
0	0	0	0.25	0.5	First	0.5300	0.5576	0.5446	0.5576	0.6770
					Last	0.6462	0.6708	0.6632	0.6770	
0	0	0	0.35	0.35	First	0.4210	0.4404	0.4208	0.4404	0.5436
					Last	0.5026	0.5340	0.5124	0.5436	
0	0	0.25	0.25	0.5	First	0.5178	0.5560	0.5476	0.5560	0.6872
					Last	0.6430	0.6742	0.6636	0.6872	
0	0.125	0.25	0.25	0.25	First	0.2040	0.2126	0.2124	0.2126	0.2612
					Last	0.2408	0.2568	0.2536	0.2612	
0	0.125	0.125	0.125	0.25	First	0.1678	0.1792	0.1760	0.1792	0.2170
					Last	0.1928	0.2058	0.2078	0.2170	
0	0.125	0.125	0.125	0.125	First	0.1018	0.1118	0.1166	0.1118	0.1252
					Last	0.1056	0.1172	0.1160	0.1252	
0.125	0.125	0.125	0.25	0.25	First	0.1330	0.1342	0.1264	0.1342	0.1602
					Last	0.1498	0.1582	0.1540	0.1602	
0	0	0	0.1	0.3	First	0.2450	0.2660	0.2568	0.2660	0.3340
					Last	0.3002	0.3224	0.3152	0.3340	
0	0	0	0.2	0.7	First	0.6984	0.7334	0.7194	0.7336	0.8376
					Last	0.8104	0.8314	0.8290	0.8376	
0	0.1	0.1	0.6	0.6	First	0.7492	0.7878	0.7620	0.7878	0.8870
					Last	0.8644	0.8812	0.8670	0.8870	
0	0.1	0.3	0.4	0.4	First	0.4534	0.4746	0.4514	0.4746	0.5838
					Last	0.5482	0.5776	0.5582	0.5838	
0	0.05	0.2	0.4	0.4	First	0.4790	0.5022	0.4780	0.5022	0.6104
					Last	0.5822	0.6040	0.5836	0.6104	

Table C.73. Normal, 5 Trt, RCBD = 60, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0512	0.0506	0.0520	0.0506	0.0554
					Last	0.0556	0.0552	0.0544	0.0554	
0.05	0.15	0.25	0.35	0.45	First	0.5952	0.6238	0.6138	0.6238	0.7742
					Last	0.7560	0.7728	0.7652	0.7742	
0	0.025	0.075	0.175	0.375	First	0.5156	0.5440	0.5334	0.5438	0.6908
					Last	0.6738	0.6894	0.6878	0.6908	
0	0	0	0	0.5	First	0.5970	0.6178	0.6176	0.6178	0.7740
					Last	0.7568	0.7718	0.7828	0.7740	
0	0	0	0.125	0.25	First	0.3054	0.3252	0.3212	0.3252	0.4414
					Last	0.4180	0.4320	0.4270	0.4414	
0	0	0.125	0.25	0.25	First	0.4172	0.4426	0.4210	0.4424	0.5694
					Last	0.5484	0.5646	0.5438	0.5694	
0	0.05	0.05	0.3	0.3	First	0.4790	0.5004	0.4842	0.5004	0.6540
					Last	0.6308	0.6474	0.6290	0.6540	
0.05	0.2	0.3	0.4	0.5	First	0.6656	0.6932	0.6836	0.6932	0.8388
					Last	0.8232	0.8332	0.8238	0.8388	
0	0	0	0.25	0.5	First	0.7672	0.7910	0.7778	0.7910	0.9178
					Last	0.9002	0.9120	0.9028	0.9178	
0	0	0	0.35	0.35	First	0.6266	0.6642	0.6400	0.6642	0.8082
					Last	0.7910	0.8036	0.7794	0.8082	
0	0	0.25	0.25	0.5	First	0.7592	0.7906	0.7780	0.7906	0.9226
					Last	0.9062	0.9184	0.9118	0.9226	
0	0.125	0.25	0.25	0.25	First	0.3238	0.3390	0.3246	0.3390	0.4412
					Last	0.4302	0.4374	0.4304	0.4412	
0	0.125	0.125	0.125	0.25	First	0.2424	0.2494	0.2546	0.2494	0.3496
					Last	0.3226	0.3316	0.3426	0.3496	
0	0.125	0.125	0.125	0.125	First	0.1210	0.1282	0.1326	0.1282	0.1528
					Last	0.1460	0.1488	0.1532	0.1528	
0.125	0.125	0.125	0.25	0.25	First	0.1740	0.1822	0.1774	0.1822	0.2328
					Last	0.2270	0.2286	0.2188	0.2328	
0	0	0	0.1	0.3	First	0.3728	0.3888	0.3862	0.3888	0.5200
					Last	0.4988	0.5124	0.5154	0.5200	
0	0	0	0.2	0.7	First	0.9074	0.9304	0.9286	0.9304	0.9903
					Last	0.9838	0.9862	0.9848	0.9903	
0	0.1	0.1	0.6	0.6	First	0.9406	0.9562	0.9474	0.9564	0.9924
					Last	0.9904	0.9918	0.9896	0.9924	
0	0.1	0.3	0.4	0.4	First	0.6702	0.7024	0.6798	0.7024	0.8544
					Last	0.8350	0.8506	0.8356	0.8544	
0	0.05	0.2	0.4	0.4	First	0.7000	0.7286	0.7058	0.7286	0.8728
					Last	0.8578	0.8680	0.8528	0.8728	

Table C.74. Exponential, 5 Trt, RCBD = 60, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0548	0.0534	0.0498	0.0534	0.0530
					Last	0.0566	0.0532	0.0508	0.0530	
0.05	0.15	0.25	0.35	0.45	First	0.9142	0.9244	0.9054	0.9244	0.9840
					Last	0.9820	0.9830	0.9810	0.9840	
0	0.025	0.075	0.175	0.375	First	0.8422	0.8640	0.8478	0.8640	0.9636
					Last	0.9608	0.9632	0.9552	0.9636	
0	0	0	0	0.5	First	0.8586	0.8828	0.8882	0.8828	0.9788
					Last	0.9678	0.9726	0.9740	0.9788	
0	0	0	0.125	0.25	First	0.6246	0.6436	0.6256	0.6436	0.8000
					Last	0.7806	0.7886	0.7740	0.8000	
0	0	0.125	0.25	0.25	First	0.7288	0.7504	0.7124	0.7504	0.8858
					Last	0.8752	0.8800	0.8604	0.8858	
0	0.05	0.05	0.3	0.3	First	0.8154	0.8392	0.8218	0.8392	0.9474
					Last	0.9378	0.9440	0.9334	0.9474	
0.05	0.2	0.3	0.4	0.5	First	0.9430	0.9520	0.9424	0.9520	0.9918
					Last	0.9910	0.9894	0.9882	0.9918	
0	0	0	0.25	0.5	First	0.9708	0.9778	0.9718	0.9778	0.9982
					Last	0.9980	0.9978	0.9968	0.9982	
0	0	0	0.35	0.35	First	0.9138	0.9350	0.9154	0.9350	0.9880
					Last	0.9844	0.9870	0.9802	0.9880	
0	0	0.25	0.25	0.5	First	0.9762	0.9800	0.9718	0.9800	0.9991
					Last	0.9982	0.9986	0.9982	0.9991	
0	0.125	0.25	0.25	0.25	First	0.6164	0.6432	0.6268	0.6432	0.7874
					Last	0.7710	0.7824	0.7726	0.7874	
0	0.125	0.125	0.125	0.25	First	0.4724	0.4862	0.4858	0.4862	0.6410
					Last	0.6164	0.6290	0.6330	0.6410	
0	0.125	0.125	0.125	0.125	First	0.1980	0.2140	0.2130	0.2142	0.2772
					Last	0.2554	0.2674	0.2708	0.2772	
0.125	0.125	0.125	0.25	0.25	First	0.3166	0.3398	0.3284	0.3398	0.4512
					Last	0.4398	0.4468	0.4294	0.4512	
0	0	0	0.1	0.3	First	0.6752	0.7056	0.6906	0.7058	0.8466
					Last	0.8380	0.8382	0.8368	0.8466	
0	0	0	0.2	0.7	First	0.9974	0.9970	0.9960	0.9970	1.0000
					Last	1.0000	1.0000	1.0000	1.0000	
0	0.1	0.1	0.6	0.6	First	0.9984	0.9992	0.9984	0.9992	1.0000
					Last	1.0000	1.0000	1.0000	1.0000	
0	0.1	0.3	0.4	0.4	First	0.9446	0.9562	0.9394	0.9562	0.9924
					Last	0.9910	0.9916	0.9880	0.9924	
0	0.05	0.2	0.4	0.4	First	0.9534	0.9614	0.9504	0.9614	0.9972
					Last	0.9948	0.9944	0.9920	0.9972	

Table C.75. T with 3 d.f., 5 Trt, RCBD = 60, BIBD 1 = 10, BIBD 2 = 10 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0454	0.0496	0.0496	0.0496	0.0496
					Last	0.0510	0.0494	0.0508	0.0496	
0.05	0.15	0.25	0.35	0.45	First	0.4502	0.4766	0.4674	0.4766	0.6202
					Last	0.6076	0.6168	0.6082	0.6202	
0	0.025	0.075	0.175	0.375	First	0.4020	0.4226	0.4134	0.4226	0.5660
					Last	0.5420	0.5564	0.5490	0.5660	
0	0	0	0	0.5	First	0.4578	0.4804	0.4824	0.4804	0.6198
					Last	0.6002	0.6118	0.6206	0.6198	
0	0	0	0.125	0.25	First	0.2436	0.2576	0.2520	0.2576	0.3372
					Last	0.3282	0.3314	0.3264	0.3372	
0	0	0.125	0.25	0.25	First	0.3182	0.3330	0.3122	0.3330	0.4410
					Last	0.4224	0.4346	0.4130	0.4410	
0	0.05	0.05	0.3	0.3	First	0.3596	0.3750	0.3588	0.3750	0.5012
					Last	0.4900	0.4968	0.4814	0.5012	
0.05	0.2	0.3	0.4	0.5	First	0.5212	0.5508	0.5354	0.5508	0.6986
					Last	0.6750	0.6894	0.6798	0.6986	
0	0	0	0.25	0.5	First	0.5946	0.6250	0.6138	0.6250	0.7868
					Last	0.7640	0.7766	0.7738	0.7868	
0	0	0	0.35	0.35	First	0.4916	0.5160	0.4976	0.5160	0.6590
					Last	0.6426	0.6556	0.6332	0.6590	
0	0	0.25	0.25	0.5	First	0.6042	0.6340	0.6172	0.6340	0.7850
					Last	0.7740	0.7844	0.7766	0.7850	
0	0.125	0.25	0.25	0.25	First	0.2456	0.2620	0.2516	0.2618	0.3362
					Last	0.3270	0.3322	0.3282	0.3362	
0	0.125	0.125	0.125	0.25	First	0.1886	0.1954	0.2028	0.1954	0.2538
					Last	0.2368	0.2444	0.2496	0.2538	
0	0.125	0.125	0.125	0.125	First	0.1014	0.1058	0.1052	0.1058	0.1238
					Last	0.1234	0.1208	0.1226	0.1238	
0.125	0.125	0.125	0.25	0.25	First	0.1440	0.1464	0.1394	0.1464	0.1906
					Last	0.1804	0.1826	0.1756	0.1906	
0	0	0	0.1	0.3	First	0.2774	0.2980	0.3002	0.2980	0.3924
					Last	0.3806	0.3898	0.3928	0.3924	
0	0	0	0.2	0.7	First	0.7904	0.8142	0.8130	0.8142	0.9324
					Last	0.9144	0.9244	0.9254	0.9324	
0	0.1	0.1	0.6	0.6	First	0.8214	0.8480	0.8312	0.8480	0.9466
					Last	0.9360	0.9458	0.9368	0.9466	
0	0.1	0.3	0.4	0.4	First	0.5134	0.5384	0.5160	0.5386	0.7014
					Last	0.6750	0.6976	0.6816	0.7014	
0	0.05	0.2	0.4	0.4	First	0.5522	0.5772	0.5612	0.5772	0.7404
					Last	0.7168	0.7334	0.7102	0.7404	

Table C.76. Normal, 5 Trt, RCBD = 60, BIBD 1 = 10, BIBD 2 = 20 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0556	0.0564	0.0518	0.0564	0.0512
					Last	0.0464	0.0508	0.0516	0.0512	
0.05	0.15	0.25	0.35	0.45	First	0.6456	0.6744	0.6632	0.6744	0.7996
					Last	0.7724	0.7948	0.7846	0.7996	
0	0.025	0.075	0.175	0.375	First	0.5704	0.6072	0.5892	0.6072	0.7384
					Last	0.7006	0.7266	0.7250	0.7384	
0	0	0	0	0.5	First	0.6378	0.6820	0.6848	0.6820	0.8012
					Last	0.7674	0.7892	0.7986	0.8012	
0	0	0	0.125	0.25	First	0.3516	0.3726	0.3652	0.3724	0.4576
					Last	0.4340	0.4528	0.4442	0.4576	
0	0	0.125	0.25	0.25	First	0.4440	0.4746	0.4562	0.4746	0.5902
					Last	0.5576	0.5840	0.5634	0.5902	
0	0.05	0.05	0.3	0.3	First	0.5164	0.5502	0.5234	0.5502	0.6832
					Last	0.6458	0.6770	0.6610	0.6832	
0.05	0.2	0.3	0.4	0.5	First	0.7190	0.7490	0.7338	0.7490	0.8624
					Last	0.8374	0.8542	0.8472	0.8624	
0	0	0	0.25	0.5	First	0.8114	0.8354	0.8198	0.8354	0.9322
					Last	0.9086	0.9284	0.9202	0.9322	
0	0	0	0.35	0.35	First	0.6752	0.7076	0.6842	0.7076	0.8238
					Last	0.7946	0.8208	0.7980	0.8238	
0	0	0.25	0.25	0.5	First	0.7902	0.8236	0.8126	0.8236	0.9238
					Last	0.8990	0.9220	0.9148	0.9238	
0	0.125	0.25	0.25	0.25	First	0.3650	0.3720	0.3552	0.3718	0.4630
					Last	0.4430	0.4616	0.4442	0.4630	
0	0.125	0.125	0.125	0.25	First	0.2692	0.2860	0.2850	0.2860	0.3642
					Last	0.3242	0.3506	0.3598	0.3642	
0	0.125	0.125	0.125	0.125	First	0.1270	0.1300	0.1316	0.1300	0.1512
					Last	0.1314	0.1418	0.1416	0.1512	
0.125	0.125	0.125	0.25	0.25	First	0.1854	0.1964	0.1900	0.1966	0.2482
					Last	0.2232	0.2392	0.2336	0.2482	
0	0	0	0.1	0.3	First	0.4040	0.4228	0.4064	0.4228	0.5338
					Last	0.4988	0.5290	0.5248	0.5338	
0	0	0	0.2	0.7	First	0.9282	0.9430	0.9386	0.9430	0.9876
					Last	0.9810	0.9858	0.9870	0.9876	
0	0.1	0.1	0.6	0.6	First	0.9588	0.9718	0.9634	0.9720	0.9946
					Last	0.9926	0.9944	0.9932	0.9946	
0	0.1	0.3	0.4	0.4	First	0.7080	0.7384	0.7146	0.7384	0.8552
					Last	0.8222	0.8466	0.8358	0.8552	
0	0.05	0.2	0.4	0.4	First	0.7440	0.7754	0.7496	0.7754	0.8830
					Last	0.8554	0.8772	0.8638	0.8830	

Table C.77. Exponential, 5 Trt, RCBD = 60, BIBD 1 = 10, BIBD 2 = 20 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0480	0.0472	0.0484	0.0472	0.0512
					Last	0.0524	0.0540	0.0510	0.0512	
0.05	0.15	0.25	0.35	0.45	First	0.9372	0.9450	0.9356	0.9450	0.9898
					Last	0.9860	0.9880	0.9858	0.9898	
0	0.025	0.075	0.175	0.375	First	0.8944	0.9014	0.8880	0.9014	0.9730
					Last	0.9678	0.9720	0.9692	0.9730	
0	0	0	0	0.5	First	0.8922	0.9176	0.9166	0.9176	0.9776
					Last	0.9690	0.9762	0.9786	0.9776	
0	0	0	0.125	0.25	First	0.6564	0.6746	0.6576	0.6746	0.8112
					Last	0.7824	0.8028	0.7900	0.8112	
0	0	0.125	0.25	0.25	First	0.7854	0.8102	0.7774	0.8102	0.9112
					Last	0.8944	0.9084	0.8896	0.9112	
0	0.05	0.05	0.3	0.3	First	0.8614	0.8790	0.8548	0.8790	0.9566
					Last	0.9424	0.9522	0.9402	0.9566	
0.05	0.2	0.3	0.4	0.5	First	0.9658	0.9710	0.9648	0.9710	0.9970
					Last	0.9934	0.9964	0.9948	0.9970	
0	0	0	0.25	0.5	First	0.9826	0.9862	0.9794	0.9864	0.9992
					Last	0.9986	0.9988	0.9980	0.9992	
0	0	0	0.35	0.35	First	0.9368	0.9512	0.9384	0.9512	0.9916
					Last	0.9870	0.9904	0.9882	0.9916	
0	0	0.25	0.25	0.5	First	0.9898	0.9914	0.9862	0.9914	0.9996
					Last	0.9992	0.9996	0.9992	0.9996	
0	0.125	0.25	0.25	0.25	First	0.6408	0.6670	0.6540	0.6670	0.8050
					Last	0.7670	0.7988	0.7884	0.8050	
0	0.125	0.125	0.125	0.25	First	0.5014	0.5228	0.5292	0.5228	0.6540
					Last	0.6174	0.6374	0.6484	0.6540	
0	0.125	0.125	0.125	0.125	First	0.2066	0.2234	0.2264	0.2234	0.2700
					Last	0.2574	0.2694	0.2722	0.2700	
0.125	0.125	0.125	0.25	0.25	First	0.3430	0.3594	0.3452	0.3594	0.4666
					Last	0.4352	0.4632	0.4456	0.4666	
0	0	0	0.1	0.3	First	0.7222	0.7452	0.7268	0.7452	0.8672
					Last	0.8516	0.8600	0.8514	0.8672	
0	0	0	0.2	0.7	First	0.9978	0.9978	0.9972	0.9978	1.0000
					Last	1.0000	1.0000	1.0000	1.0000	
0	0.1	0.1	0.6	0.6	First	0.9998	1.0000	1.0000	1.0000	1.0000
					Last	1.0000	1.0000	1.0000	1.0000	
0	0.1	0.3	0.4	0.4	First	0.9598	0.9696	0.9578	0.9698	0.9940
					Last	0.9916	0.9934	0.9914	0.9940	
0	0.05	0.2	0.4	0.4	First	0.9708	0.9792	0.9680	0.9792	0.9966
					Last	0.9940	0.9950	0.9936	0.9966	

Table C.78. T with 3 d.f., 5 Trt, RCBD = 60, BIBD 1 = 10, BIBD 2 = 20 and BIBD 3 = 10

μ_1	μ_2	μ_3	μ_4	μ_5	Standardized	JT	MJT	SJT	Alvo	Alvo
0	0	0	0	0	First	0.0504	0.0484	0.0486	0.0484	0.0460
					Last	0.0466	0.0474	0.0464	0.0460	
0.05	0.15	0.25	0.35	0.45	First	0.4922	0.5200	0.5036	0.5202	0.6426
					Last	0.6082	0.6330	0.6272	0.6426	
0	0.025	0.075	0.175	0.375	First	0.4324	0.4518	0.4466	0.4520	0.5658
					Last	0.5404	0.5640	0.5550	0.5658	
0	0	0	0	0.5	First	0.4900	0.5182	0.5250	0.5182	0.6350
					Last	0.6000	0.6268	0.6362	0.6350	
0	0	0	0.125	0.25	First	0.2640	0.2688	0.2602	0.2688	0.3426
					Last	0.3276	0.3402	0.3330	0.3426	
0	0	0.125	0.25	0.25	First	0.3458	0.3634	0.3478	0.3634	0.4528
					Last	0.4182	0.4446	0.4272	0.4528	
0	0.05	0.05	0.3	0.3	First	0.4068	0.4274	0.4030	0.4274	0.5308
					Last	0.5004	0.5268	0.5054	0.5308	
0.05	0.2	0.3	0.4	0.5	First	0.5548	0.5866	0.5760	0.5866	0.7208
					Last	0.6808	0.7148	0.7048	0.7208	
0	0	0	0.25	0.5	First	0.6488	0.6872	0.6756	0.6872	0.8064
					Last	0.7688	0.7970	0.7890	0.8064	
0	0	0	0.35	0.35	First	0.5232	0.5478	0.5244	0.5478	0.6824
					Last	0.6424	0.6740	0.6526	0.6824	
0	0	0.25	0.25	0.5	First	0.6506	0.6786	0.6676	0.6786	0.8110
					Last	0.7778	0.8074	0.8006	0.8110	
0	0.125	0.25	0.25	0.25	First	0.2724	0.2902	0.2812	0.2902	0.3512
					Last	0.3224	0.3444	0.3386	0.3512	
0	0.125	0.125	0.125	0.25	First	0.2074	0.2218	0.2210	0.2218	0.2598
					Last	0.2450	0.2570	0.2620	0.2598	
0	0.125	0.125	0.125	0.125	First	0.1016	0.1078	0.1128	0.1078	0.1332
					Last	0.1152	0.1220	0.1268	0.1332	
0.125	0.125	0.125	0.25	0.25	First	0.1546	0.1586	0.1504	0.1586	0.1991
					Last	0.1840	0.1908	0.1860	0.1991	
0	0	0	0.1	0.3	First	0.3104	0.3320	0.3242	0.3320	0.4210
					Last	0.3906	0.4120	0.4108	0.4210	
0	0	0	0.2	0.7	First	0.8172	0.8480	0.8414	0.8480	0.9334
					Last	0.9176	0.9320	0.9326	0.9334	
0	0.1	0.1	0.6	0.6	First	0.8564	0.8782	0.8614	0.8782	0.9610
					Last	0.9470	0.9584	0.9500	0.9610	
0	0.1	0.3	0.4	0.4	First	0.5644	0.5920	0.5694	0.5920	0.7240
					Last	0.6912	0.7178	0.7006	0.7240	
0	0.05	0.2	0.4	0.4	First	0.5892	0.6096	0.5796	0.6094	0.7444
					Last	0.7202	0.7438	0.7118	0.7444	