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Propensity Score Weighting with Double Samples: A Simulation Study

Boris Lorenc

Department of Statistics, Stockholm University, SE-106 91 Stockholm, Sweden

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Boris Lorenc
Department of Statistics, Stockholm University
SE-106 91 Stockholm, Sweden
E-mail: boris.lorenc@stat.su.se

Abstract

The propensity score adjustment technique for web surveys, introduced by Terhanian, is theoretically known to reduce bias caused by nonrepresentativeness of web panel respondents with respect to the general population, on provision that the assumptions that pertain to the technique hold. In practical applications though, the technique implies making choices whose implications for the weighted point and variance estimates are too complex to express in analytic terms.

The propensity for participation in a web survey is not known and thus needs to be estimated. Choice of the model and estimation of the model parameters introduce uncertainties that do not exist in a purely theoretical analysis. Further, covariance structure of the variables chosen to be analysed cannot easily be estimated as the study variables are not observed in the unrestricted sample. Even characteristics specific to the propensity score technique, like number of strata or ratio of the sample sizes, may play a role when making inference from a finite set of data. Finally, the assumptions required by the technique may or may not actually be fulfilled.

As analytic expressions relating these factors to the point estimates and the estimates of their variance are lacking, a simulation was run to study their effects. A known probability distribution was used to generate artificial populations whose parameters were then estimated while varying the factors under study in a setup of a designed experiment. The results in general confirmed the bias reducing effect of the propensity score weighting. They also indicated that, under a particular covariance structure, the adjustment could actually increase the estimator's bias if a relevant variable was left out of the model by which the propensity score was estimated.

Introduction

To reduce the bias of the estimates of population parameters that arises when web panels are surveyed instead of random samples from the population, Terhanian (e.g. Terhanian, Marcus, Bremer, and Smith, 2001) suggested a new application of the propensity score weighting technique. The technique was originally developed by Rosenbaum and Rubin (1983a) to obtain a proper estimate of a treatment difference between *two populations*. The new in Terhanian's approach was to apply, with minor changes, this method to *two samples* from the same population—the name "double samples procedure" seems thus appropriate.

Situations where the method might be suitable arise when (i) access to and data collection from one of the samples is much cheaper than from the other one, and (ii) the inclusion probabilities into the former (cheaper to collect data from) sample are not explicitly known. It is often, with respect to ii, further suspected that the unknown inclusion probabilities are related to auxiliary[1] information or to variables under study, that is, this sample is presumably gathered from some specific subset of the general population. Additionally, self-selection into this sample might be present. (The researcher, when modelling this situation, may focus on estimating the inclusion probabilities or on estimating the difference in the distribution of the variables in the population and in the subset. The propensity score technique is geared towards the latter goal.)

In Terhanian's practical application of the technique, a web panel takes the role of the *restricted* sample as it consists of web users presumably different from the general population on important properties like age, income, and the like. In order to produce appropriate weights, web panel data are augmented with incomplete data (only the auxiliary variables are collected) from an *unrestricted* sample—a sample from the general population with the element inclusion probabilities known.

Terhanian and the colleagues reported some very accurate predictions of elections outcomes obtained by the propensity score adjustment technique (Terhanian, Marcus, et al., 2001, Terhanian, Taylor, Siegel, Bremer, and Smith, 2001). Their presentations were, unfortunately, given in descriptive and rather vague terms, with formal expressions and technical details omitted. In a study related to this paper (Lorenc, 2003), the present author gave a simple analytic demonstration of the effectiveness of the propensity score weighting in a double samples setting. Akin to the study of Cochran (1968) who investigated the case of sampling from two populations, this new study showed that Terhanian's method performed as indicated by its creator, reducing the bias of the unadjusted estimator by about 90% in the situations studied. The technique gives theoretically an unbiased estimator, but in practical applications the necessity to estimate the parameters from data hinders the accomplishment of this goal.

The technique may be said to consist of these steps:

1. collecting complete data—the auxiliary variables and the variables under study—from a web panel (the restricted sample) and collecting the auxiliary variables from a random sample of the population (the unrestricted sample),

2. given the whole set of auxiliary information (from the unrestricted and the restricted samples) but not the sample membership indicator, estimating for each unit the probability of being a panel member (this magnitude is known as the estimated propensity score); a common way of estimating this probability is by building a logistic regression model,

[1]What in the survey literature are known as *auxiliary* (or sometimes *background*) variables are in regression analysis referred to as *independent* variables, in the biomedical research as *covariates*, and in the econometric literature as *conditioning* variables.

3. estimating the distribution of the propensity score in the population by considering the distribution of the estimated propensity score in the unrestricted sample only; in particular, identifying cutoff points for stratification: usually equidistant cutoff points are chosen and 5 intervals are used, in which case the cutoff points would be the 20^{th}, 40^{th}, 60^{th}, and 80^{th} percentile of the estimated propensity score distribution in the population,

4. classifying the units in the restricted sample (panel) into appropriate strata based on their individual estimated propensity score values,

5. for each stratum, building a mean of the study variable values of the panelists in that stratum; then, weighting the strata means appropriately together to produce the final, adjusted estimate for that study variable; in the case of equidistant intervals the weighting amounts to calculating the arithmetic mean of the strata means.

Justification for the procedure and its details were given in (Lorenc, 2003).

Despite its theoretical clarity, the method nevertheless leaves some questions open. For one, the propensity score is in real applications not known and thus needs to be estimated. This uncertainty comes atop of the usual one, that of the unrestricted sample being a sample rather than a census. The most common method for estimating the propensity score is logistic regression, but discriminant analysis is an alternative suggested in the literature.

An expression for variance of the propensity score adjusted point estimate is lacking. The applied variance estimate (e.g. Rosenbaum and Rubin, 1984) is conditional on the chosen model, not taking into account the uncertainty regarding the model itself. Yet another issue is that of choosing the correct cutoff points for stratification. This is still an open research issue.

In addition, there are other factors that might influence the point estimate and the estimate of its variance. They are: absolute and relative sample sizes, covariance structure of the data, whether all the variables relevant to the study were observed or only a part of them, and so on. The effects of these factors are not clear because explicit expressions for the variance estimates are lacking. In such a situation, an alternative way to address these issues is through a simulation study. This path was chosen for the present study.

The present study is a simulation study that investigates the effect of the above mentioned factors on performance of the propensity score adjusted estimator in the situation of taking double samples from the same population. The study is performed in a manner of a designed experiment. In Section 1, goals of the study and motivation for investigating the chosen factors are presented. Details of the method are provided in Section 2, while Section 3 gives the results. Some general conclusions arising from the study and comments are given in the final Section 4.

1 Goal and studied factors

1.1 Goal

The present study investigates the influence of a number of factors on the effectiveness—here understood as the ability to reduce bias—of the propensity score technique under certain conditions (given in more detail below), with the main aim of preparation for the future analyses of real data. The setup of the study is of an experiment with a number of factors.

1.2 Studied factors

1.2.1 Preliminaries

Let $\mathbf{X}$ denote the auxiliary variables, let Y be the variable under study, and let Z be an indicator of inclusion into a subset (to be specified) of the population. Let two samples be drawn by the simple random sampling mechanism: an unrestricted sample, s, of size n from the population, and a restricted sample, r, of size k from the subset of the population.

The propensity score, denoted $e(\mathbf{x})$, is defined as $e(\mathbf{x}) = \Pr(Z = 1|\mathbf{X} = \mathbf{x})$. Let the following two conditions be fulfilled:

- a positive probability at every level of the propensity score for every unit in the population to be assigned to any of the samples[2], $0 < e(\mathbf{x}) < 1$, and
- independence of the study variable and the subset membership indicator conditional on the auxiliary information[3], $Y \perp Z \mid \mathbf{X}$.

The two assumptions are jointly referred to as *strongly ignorable treatment assignment* (SITA). Then, as proved by Rosenbaum and Rubin (1983a),

- conditioning on the propensity score establishes a (conditional) independence of the auxiliary information and the subset membership indicator, $\mathbf{X} \perp Z \mid e(\mathbf{X})$—which is sometimes referred to as *balancing*—and,
- conditioning on the propensity score removes, in expectation, the bias of the unadjusted mean of the study variable between the population and the subset[4], $E\{Y \mid e(\mathbf{X}),\ Z = 1\} = E\{Y \mid e(\mathbf{X}),\ Z = 0\}$.

The propensity score is in practice not known and must be estimated, all relevant auxiliary information might have been gathered or some of it left out, and the assumptions may hold or may not hold. These, and some further issues, are now discussed in more detail.

[2]This requirement, in effect when treating two populations with mutually exclusive membership, may in the present setting of double samples from the same population be relaxed to $0 < e(x) \leqslant 1$: even if a member of r with certainty, an element has still a positive probability to appear in s, thus satisfying the main requirement of a positive chance for each element to appear in any of the samples.

[3]Or conditional on any balancing score, of which the propenisity score is the coarsest. (The proof is given in Rosenbaum and Rubin,1983a, as the proof of Theorem 3.)

[4]In double samples procedures, for this to hold it is additionally required that there is no effect of data collection method on measurement (see Lorenc, 2003).

1.2.2 Estimation of the propensity score

Methods

The propensity score is in practice most often estimated by the use of a logistic regression with the logit link. Instead of the logit link, other links like the probit link might be considered, but in the present study, with a relatively simple population model used and a simple subpopulation inclusion rule (cf. Section 2) these give the same results, so this comparison was omitted.

Instead, discriminant analysis was used as an alternative for estimating the propensity score. Rosenbaum and Rubin (1983a) point out though that with multivariate normal distributions having common covariance in both treatment groups (which is the case in the present study), the propensity score is a monotone function of the discriminant score, why the eventual difference between the results of applying the two methods would stem from the estimation algorithms rather than from theoretical differences.

Available amount of data

With limited amount of data on which to base the estimation, a problem of insufficient overlap of the distributions of the propensity score in the two samples may arise. Practically, it may happen that, when classified in step 4 of the procedure outlined in the Introduction, no unit in the restricted sample falls into one of the strata. No contribution to the adjusted average response can thus come from this stratum, with the consequence that if an adjusted estimate is produced, it will then be biased. Occurrence of this is clearly related to the sample sizes, why the sample size factor was included in the study.

Theoretically, the larger the number of strata into which the sample is stratified based on the estimated propensity score, the lesser the bias of the adjusted estimate (Section 2 of Lorenc (2003) gives the details). In practical situations with a limited amount of data, though, a finer-grained stratification yields greater risk for empty strata which in turn might lead to a biased estimate. Coarser stratification lowers the risk for empty strata but might preserve a larger intrinsic bias compared to a finer-grained stratification. The number of strata was thus varied in the study.

Additionally, proportions in which the two samples partake in the joint sample might be of significance to the propensity score estimation methods. This was also included in the study, as a factor.

Variance estimation

While conditionally on the regression model variance estimation of the propensity score adjusted estimate is not difficult to obtain (see p. 10 under heading "Procedure", below), the model selection process includes sources of variance that are harder to express analytically. A simulation study provided the opportunity to estimate the variance of the propensity score adjusted estimate without access to analytic expressions, by simply obtaining the adjusted point estimates in each repeated drawing of the population and of the samples, and then calculating the variance of these values and comparing them to the variances calculated conditional on the regression model.

1.2.3 Assumption violations

Treating the same problem as in Cochran (1968) and Cochran and Rubin (1973), namely that of estimating treatment effects, Rosenbaum and Rubin (1983a) showed in a situation with multivariate covariates that conditioning the response on the propensity score (or on any balancing score, of which the propensity score is the coarsest) eliminates bias due to nonrandom treatment assignment provided that the assumptions given in SITA hold.

But, what would the consequences be if these assumptions did not hold? While analytical results might be derived in simpler cases, there was an interest in checking the behaviour of the estimator in more complex situations that in a sense resemble those that might be met in real applications.

SITA violations

SITA assumptions might be violated in two ways: some units may have a zero chance of being included in the restricted sample, $\exists i : e(\mathbf{x}_i) = 0$ where i indexes units in the population, and a dependence between the study variable and the subset membership indicator may remain even after conditioning on the auxiliary information, here symbolically denoted as $(Y \angle Z) \mid \mathbf{X}$. The effects of both violations were investigated in the simulation study.

Unobserved covariates

In addition, violation of the latter of the SITA assumptions occurs when an important auxiliary variable is left unobserved. In practical applications, the difficulty precisely it that there is an uncertainty whether all the covariates causally related to the response, Y, and the subset membership indicator, Z, are observed.

This factor is a variant of the preceding one, the only difference being a conceptual one: here, there was a variable that we ought to have observed but failed to do so while, in the previous case ($(Y \angle Z) \mid \mathbf{X}$), the nature of the phenomenon was such that Y and Z are tangled and could not be untangled by conditioning.

When investigating sensitivity of the propensity score technique to not recording a covariate, Rosenbaum and Rubin (1983b) considered an unobserved binary covariate. In the general multivariate normal setup of the present study (see subsection “The general setup” in next section), it seemed natural to investigate the effect of not including a continuous covariate, while varying the degree of correlation between this covariate and the other variables.

2 Method

Point of departure for the double samples application of the propensity score technique, as noted in Introduction, is that the values of the study variable Y are not observed for the units in the unrestricted sample from the population, s. So, given the information available in the two samples—s with only auxiliary variables and the restricted sample from the subset, r, with the complete information—the goal was to estimate the mean of the study variable Y for the whole population by applying the propensity score weighting technique. For the model presented in (1), p.7 below, this mean of Y in the population is zero.

The factors from the preceding section were included in a simulation experiment which consisted of repeatedly drawing s and r samples from populations with known characteristics defined by levels of the factors pertaining to the population properties and the samples' properties, and producing point and variance estimates based on levels of the factors pertaining to the estimator properties.

A summary of the factors is given after a presentation of the general setup.

2.1 The general setup

The following multivariate normal model was used:

$$(X_1, X_2, Y, V) \sim N(\mathbf{0}, \mathbf{\Sigma}),$$

where

$$\mathbf{\Sigma} = \begin{bmatrix} 1 & \rho_{12} & \rho_{13} & \rho_{\cdot 4} \\ \rho_{12} & 1 & \rho_{23} & \rho_{\cdot 4} \\ \rho_{13} & \rho_{23} & 1 & \rho_{\cdot 4} \\ \rho_{\cdot 4} & \rho_{\cdot 4} & \rho_{\cdot 4} & 1 \end{bmatrix}. \tag{1}$$

This model defined a finite population, $U = \{1, 2, , ..., i, ..., N\}$, while inclusion into the subset was defined through either $I_{V<X_2}$ or $I_{\max(V,0)<X_2}$. The variables in the model were given the following meanings, not uncommon in the survey literature:

X_1, an auxiliary variable,
X_2, another auxiliary variable, also involved in defining the subset—"the participation variable",
Y, the study variable,
V, another variable involved in defining the subset.

The present model differed from the one studied in (Lorenc, 2003) in that here there are two auxiliary variables instead of one, each with its specific correlation coefficients with the other variables, and also that V may here even have a nonzero correlation with the other variables. In order not to inflate the number of factors in the experiment, V's correlation coefficient with the other variables was kept the same, $\rho_{\cdot 4}$, across the variables.

Setting V aside for the moment, the covariance matrix in (1) produces 8 different models when each of ρ_{12}, ρ_{13}, and ρ_{23} is held on one of the two positive levels, "high" and "low". Varying the covariance structure in this way gave the opportunity to investigate the efficiency of the propensity score adjustment under the "high" and "low" levels of correlation between each of the covariates and the response (Table 1).

The values of "low" and "high" for the ρ's in this reduced, 3×3, covariance matrix were set to .22 and .78, respectively—in any combination producing a positive definite matrix, as required by the model. The value of $\rho_{\cdot 4}$ was set to .175, producing with both signs ($-$ and $+$) positive definite matrices in all the 8 models. Three of the matrices, those pertaining to the structures 5, 6, and 7, became thereby almost singular (i.e., the third variable an almost deterministic function of the other two).

Table 1: Denotations for the covariance structures investigated in the study.

Covariance structure	ρ_{12}	ρ_{13}	ρ_{23}
1	low	low	low
2	low	low	high
3	low	high	low
4	high	low	low
5	low	high	high
6	high	low	high
7	high	high	low
8	high	high	high

Table 2: Expected values of the study variable Y in the subset for the chosen values of ρ_{23} and $\rho_{\cdot 4}$, which also are the biases of the corresponding sample means of Y in r if they were to estimate the expected value of Y in the population (the latter being zero).

	$\rho_{23} = .22$		$\rho_{23} = .78$	
	$Z = I_{V<X_2}$	$Z = I_{\max(V,0)<X_2}$	$Z = I_{V<X_2}$	$Z = I_{\max(V,0)<X_2}$
$\rho_{\cdot 4} = -.175$	.206	.244	.497	.719
$\rho_{\cdot 4} = 0$	.124	.201	.440	.708
$\rho_{\cdot 4} = .175$	.028	.141	.376	.692

Assignment to the subset was set either by $Z = I_{V<X_2}$, conforming to the SITA assumption that $\forall i \in U : 0 < e(\mathbf{x}_i) \leqslant 1$, or by $Z = I_{\max(V,0)<X_2}$, violating this assumption through $\exists i \in U : x_{2,i} < 0 \longrightarrow e(\mathbf{x}_i) = 0$. For this latter case the reference "SITA violation #2" is used below.

The coefficient $\rho_{\cdot 4}$—determining the correlation between X_2 and V—may here, in contrast to the setup in (Lorenc, 2003), have taken on values different from 0. When $\rho_{\cdot 4} \neq 0$, assignment to the subset was not strongly ignorable: the assumption $(Y \perp Z) \mid X_2$ was violated. For this condition the reference "SITA violation #1" is used in what follows.

With no SITA assumption violations, the expected value of the study variable Y in the subset was biased with respect to the expected value of Y in the population, with the bias expressible as $\rho_{23} \times \pi^{-\frac{1}{2}} = \rho_{23} \times .564$ (ibid.), giving for the case $\rho_{23} = .22$ the bias of .124, and for the case $\rho_{23} = .78$ the bias of .440. The expected values of Y in the subset, both with and without the SITA violations, are given in Table 2.

Two samples were drawn using simple random sampling, one from the complete population, denoted by s and of size n, and another from the subset, denoted by r and of size k.

The variable X_2, which took part in defining the subset from which the restricted sample r was drawn ("the web users"), is sometimes referred to as "the participation variable" meaning participation in the restricted sample, the only sample providing information on Y.

2.2 Summary of the studied factors

The following factors were included in the study:

1. Covariance structure [denoted COVSTR in the Tables and Figures]: 8 levels (the 8 models presented in Table 1),

2. Sample sizes [SSIZE]: 2 levels ("low", $n_{low} = 1000$, and "high", $n_{high} = 5000$, for the sample s),

3. Ratio of k, the size of the sample r, to n, the size of the sample s [KNRATIO]: 3 levels ($\frac{1}{2}$, $\frac{2}{2}$, and $\frac{3}{2}$, giving the restricted sample's sizes $k_{low} = \{500, 1000, 1500\}$ for the "SSIZE low" condition and $k_{high} = \{2500, 5000, 7500\}$ for the "SSIZE high" condition),

4. Method [METHOD]: 2 levels (logistic regression with logit link and discriminant analysis),

5. Observed covariates [OBSERVED]: 4 levels (an "analytic" level (A), where the known propensity score is used (see the heading "Recorded statistics", below), and three levels where the propensity score is estimated after only X_1 is observed, only X_2 is observed, and both covariates are observed and forced into the model),

6. Number of strata into which the empirical distribution of the propensity score is stratified [NSTRATA]: 2 levels (5 and 7 strata),

7. SITA violation #1 [SITAVIO1]: 3 levels ("yes, negative correlation", $\rho_{\cdot 4,yes-} = -.175$, "no", $\rho_{\cdot 4,no} = 0$, and "yes, positive correlation", $\rho_{\cdot 4,yes+} = .175$),

8. SITA violation #2 [SITAVIO2]: 2 levels ("no", $\forall i : 0 < e(\mathbf{x}_i) < 1$, and "yes", $\exists i : e(x_i) = 0$),

2.3 Procedure

For each of the level combinations of the all the factors except METHOD and OBSERVED, $b = 1000$ independent trials were run, where a trial consisted of generating a simulated population of size $N = 50000$ with the required properties, taking an unrestricted sample s and a restricted sample r, and calculating the required statistics (see next subsection) from them. As comparisons between the two propensity score estimation techniques, and between the effects of observing differing amount of information, were of interest, the required statistics for the levels of the factors METHOD and OBSERVED were calculated on the same sets of data.

For every point estimate, a corresponding estimate of its variance was calculated. For this, the method of Mosteller and Tukey was used. This particular formulation, "the method of Mosteller and Tukey", is the consequence of Rosenbaum and Rubin's (1984) special mention of it; they namely say: "standard errors for the adjusted proportions were calculated following Mosteller and Tukey (1977, Chap. 11c)."

Chapter 11c of Mosteller and Tukey (1977) considers primarily the choice of the standard population when comparing samples from two populations. All the examples in

11c concern proportions, and the usual variance estimators for the estimated proportions, $\hat{p}$, are applied within each stratum l, $\hat{V}_l(\hat{p}_l) = \frac{1}{n_l}\hat{p}_l(1-\hat{p}_l)$, the only specific issue being the weight given to each stratum's variance in building the overall variance.

In their example in the reference above, Rosenbaum and Rubin seem to give equal weights to each stratum; this could not be fully confirmed though, as using the data supplied in their Table 1 did not give an exact replicate of their reported standard errors (equal weights gave though the values closest to those in the article, about 0.01 below, of the several considered weightings; the difference seems though to be too large for a result of rounding errors, why this remains an open issue).

In the present application, each stratum's standard deviation was given equal weight as the strata cutoff points were equidistant:

$$\hat{V}\left(\widehat{E(\bar{Y})}_{\{\cdot\}}\right) = \sum_{l=1}^{L}\left(\frac{N_l}{N}\right)^2 \frac{s_{yl}^2}{k_l} = \sum_{l=1}^{L}\left(\frac{\frac{1}{L}N}{N}\right)^2 \frac{s_{yl}^2}{k_l} = \frac{1}{L^2}\sum_{l=1}^{L}\frac{s_{yl}^2}{k_l}, \tag{2}$$

where k_l denotes the number of units in r falling into stratum l of the quantized distribution of the estimated propensity score in the population, and s_{yl}^2 denotes the variance of the observed values on Y for these units.

The simulation was performed in Matlab.

2.4 Recorded statistics

The following statistics were recorded for every simulated population:

1. the propensity score adjusted estimates of the population mean for Y based on the restricted sample r:
   - one estimate based on the true propensity score, $\hat{\bar{Y}}_{\{r,PS\}}$, (*i.e.*, it was taken as known that $e(\mathbf{X}) = \Phi(X_2)$, the cumulative distribution function of X_2, as in the demonstration example of (Lorenc, 2003), subsection "Reducing the bias of $\bar{Y}_r$ as an estimator of $E(Y)$ by stratification on the propensity score")[5]; the cutoff points were estimated from the empirical distribution of the propensity score in the unrestricted sample s rather than found in the table of $\Phi(\cdot)$; this estimate corresponds to the level A of the factor OBSERVED,
   - three estimates based on the estimated propensity score obtained by the current method (either logistic regression or discriminant analysis), where the information observed and available for estimation of the propensity score varied: it could be only X_1, which gave the point estimator $\hat{\bar{Y}}_{\{r,\widehat{PS}_{X_1}\}}$, only X_2, which gave $\hat{\bar{Y}}_{\{r,\widehat{PS}_{X_2}\}}$, and (X_1, X_2) forcing both variables in the model, which gave $\hat{\bar{Y}}_{\{r,\widehat{PS}_{X_1X_2}\}}$; the cutoff points were estimated from the empirical distribution of $\widehat{PS}_{\mathbf{X}} = \widehat{e(\mathbf{X})}$ in the unrestricted sample s, with $\mathbf{X}$ replaced by the currently observed $\mathbf{X}$-values (X_1, X_2, or X_1 and X_2).

[5] In the case SITAVIO2=YES (i.e. $Z = I_{\max(V,0)<x_2}$) the "usual" true propensity score $e(\mathbf{X}) = \Phi(X_2)$ was somewhat inappropriately used.

2. the bias of the estimates in item 1 with respect to μ_Y, the mean of the variable Y in the current population,

3. variance estimates for the estimates in item 1 calculated using (2),

4. whether the population mean of the current population, μ_Y, was contained in the estimated nominal 95% confidence interval built around the point estimates in item 1 by subtracting and adding 1.96 times the root of the corresponding variance estimates in item 3.

As $b = 1000$ trials were performed at each combination of the factor levels, some summary statistics could be generated:

I. mean bias across the b trials (*MeanBias* in the reported Figures and Tables),

II. empirical confidence level: proportion of confidence interval "hits"—the mean of the statistics in item 4 above across the b trials (*Clevel*),

III. difference between the mean across the b trials of the root of the variance estimate in item 3 above and the observed simulation standard deviation across the b trials of the corresponding point estimate in item 1 above (*StDiff*).

The statistics I-III are presented as results in the next section. The statistics were analysed using the design-of-experiments module in the statistical package Minitab. When percentage reduction in bias for the compound simulation statistics *MeanBias* is presented, it was calculated using

$$prb\left(\hat{\theta}_{\{\cdot\}}\right) = 100\left(1 - \frac{\left|\frac{1}{b}\sum_{j=1}^{b}\hat{\theta}_{\{\cdot\},j} - \theta\right|}{\left|\hat{\theta}_r - \theta\right|}\right),$$

where $\hat{\theta}_{\{\cdot\}}$, $\hat{\theta}_r$, and θ are the estimator adjusted using the technique $\{\cdot\}$, the unadjusted estimator (based on the r sample only), and the parameter they aim to estimate, respectively. Thus, prb was calculated from the summary data, and not for each generated population separately.

3 Results

The results of the simulation are presented in tabular and graphical form. The main table of results[6] consists of percentages reduction in bias and empirical confidence levels of the propensity score weighted estimator under conformance and the deviations from the assumptions. Second-order interaction plots of the studied factors are added with the aim to give the reader an impression about the individual contributions of the studied factors on the simulation statistics, as well as about the contributions of their interactions. Two additional kinds of tables, containing more detailed information, also exist: ANOVA tables for each of the summary statistics, up to second order effects, and tables of means

[6]Table 4 on p. 17.

Table 3: The eight cases of assumption violations.

Case	Only X_1 observed	$\rho_{.4} \neq 0$	$Z = I_{\max(V,0)<X_2}$
0	no	no	no
1	yes	no	no
2	no	yes	no
3	no	no	yes
4	yes	yes	no
5	yes	no	yes
6	no	yes	yes
7	yes	yes	yes

of the first and second order effects, across all the levels partaking in the current analysis. These two kinds of Tables—too large and detailed to constitute a part of the text—are given in the Appendix.

The factors that proved to have a dominating effect on the observed simulation statistics were those related to violations of the assumptions for the propensity score technique. In order to give a clear picture of the contributions of all the factors investigated, first presented is the case where all the assumptions held, followed by the cases where they were violated in various ways. There are 8 such cases all in all (including the one where all the assumptions held), as the Table 3 illustrates. The results are presented in this order.

Within cases, the results are presented first for the point estimation (i.e., the simulation statistic *MeanBias*), followed by those regarding variance estimation (i.e., the statistics *StDiff* and *Clevel*). But, as variance estimates are of little use for the production of correct confidence intervals if the point estimates are seriously biased, which in general turned out to be the case when the SITA assumptions did not hold, the variance estimates are not always presented for such cases (but can always be found in the Tables in the Appendix).

3.1 Case 0: SITA assumptions hold

Besides the two factors explicitly named so, SITAVIO1 and SITAVIO2, even not observing an important covariate constitutes a violation of a SITA assumption. Specifically, observing only X_1 would amount to observing incomplete information as it does not hod that $(Y \perp Z) \mid X_1$. So, in presenting here the results where the SITA assumptions held, the estimates obtained using the true propensity score, the information in X_2, and the information in X_1 and X_2 together are included. Thus, the effects of the factors COVSTR, SSIZE, KNRATIO, METHOD, NSTRATA, and OBSERVED, excluding OBSERVED=X1, are analysed here.

3.1.1 Case 0: Point estimation

When SITA assumptions held, major factors that influenced the remaining bias in the propensity score adjusted point estimates of the mean of Y in the population were COVSTR and NSTRATA (Figure 1). Inspection of the ANOVA table (Table I in the Appendix)

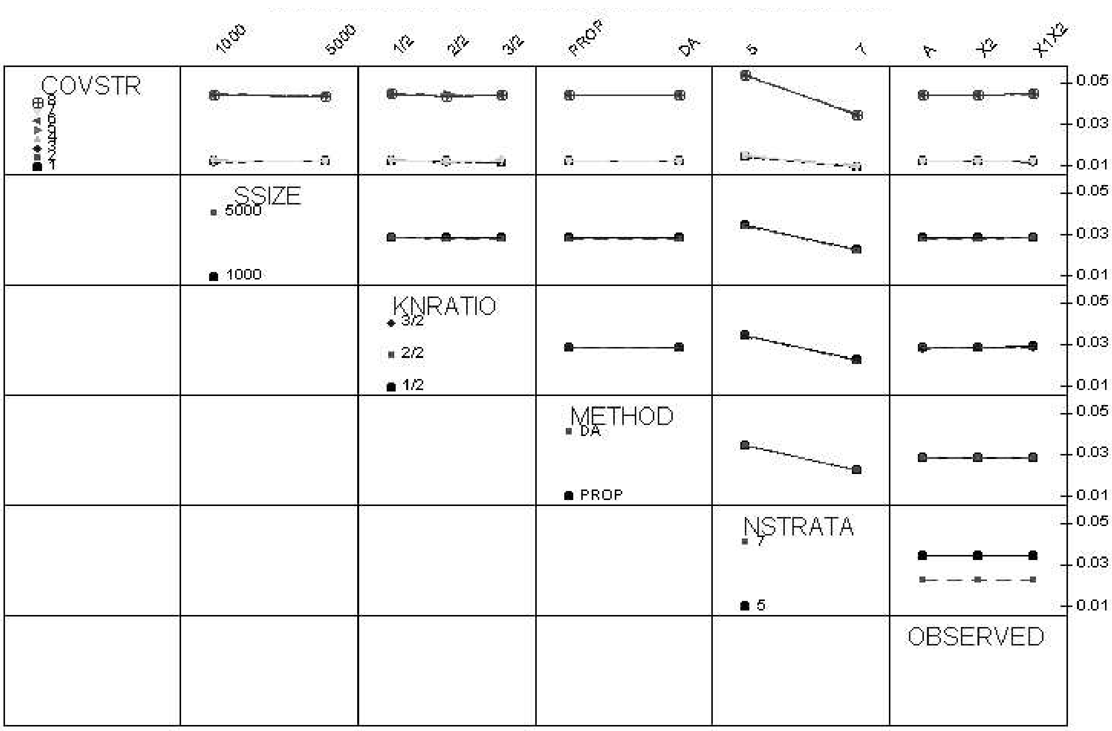

Figure 1: Case 0, interaction plot for *MeanBias*. (Identification of the COVSTR levels given in the text.)

showed that all the main effects except METHOD had a statistically significant contribution ($p \leqslant .001$), but that the dominating ones were those two mentioned. In addition, all the two-way interactions involving COVSTR except that with METHOD plus the interaction KNRATIO×NSTRATA were the significant ones among the two-way interactions ($p \leqslant .005$).

The covariance structures whose point estimates had the higher mean level of the bias in the first row of plates in Figure 1 (about .044 on the average) were those denoted by the numbers 2, 5, 6, and 8, that is, those where the correlation between the participation variable and the study variable was high (i.e. $\rho_{23} = .78$). This confirmed the analytically derived values of the adjusted point estimates for the same situation (Lorenc, 2003): the values of the bias of these point estimates falling under "5" and "7" in the pane for the interaction COVSTR×NSTRATA in Figure 1—the means across the structures 2, 5, 6, and 8—were .0537 and .0352 respectively, deviating only in the last decimal from the theoretically derived ones, .0532 and .0351 (also, see Table IV in the Appendix).

3.1.2 Case 0: Variance estimation

When the point estimates were based on the true propensity scores, that is, when the estimator $\widehat{\widehat{Y}}_{\{r,PS\}}$ was used, the corresponding variance estimates, calculated applying the suggested method ("the method of Mosteller and Tukey"), were approximately correct irrespective of the covariance structure (Figure 2; the estimator $\widehat{\widehat{Y}}_{\{r,PS\}}$ is represented as METHOD=A). But, when the point estimates were based on the estimated propensity

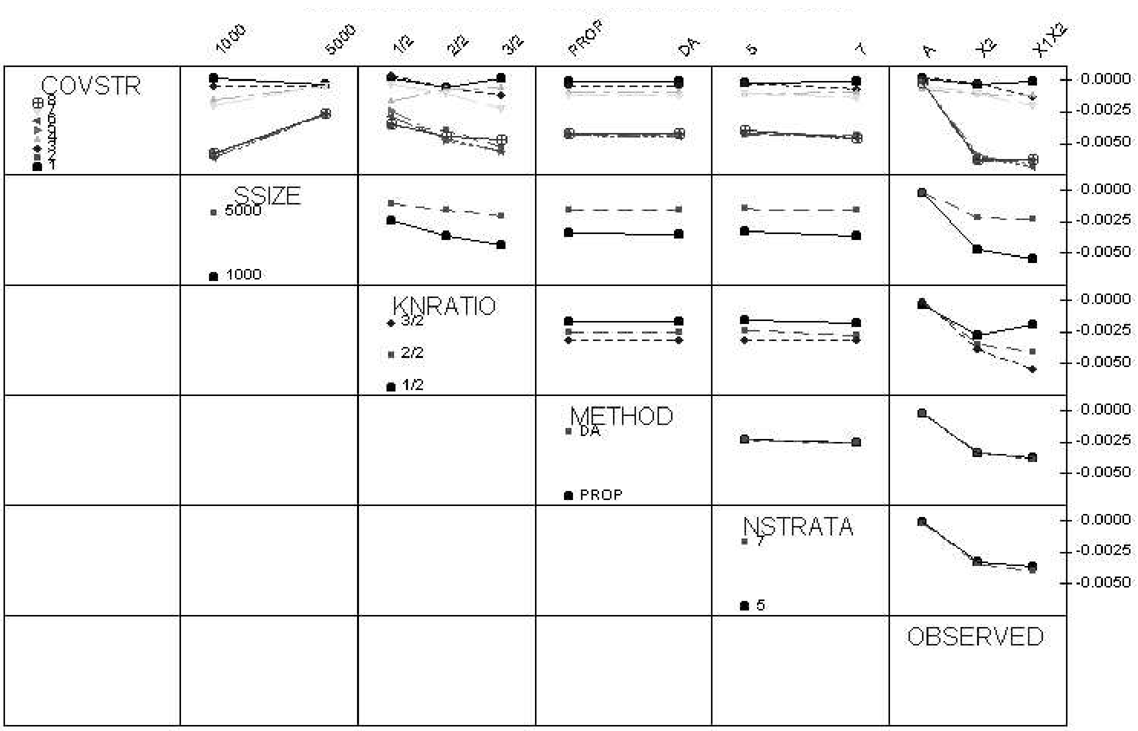

Figure 2: Case 0, interaction plot for *StDiff*. (Identification of the COVSTR levels given in the text.)

scores instead, resulting in the estimators $\widehat{\widehat{Y}}_{\{r,\widehat{PS}.\}}$, the accuracy of the variance estimates depended on the covariance structure: less underestimating or approximately correct were those where the original bias was low (that is, those with the low correlation between X_2 and Y, denoted by 1, 3, 4, and 7), while more underestimating were those where the original bias was high (that is, those where the correlation between X_2 and Y was high, denoted by 2, 5, 6, and 8).

But, that the variance estimates of the point estimates were eventually correct did not necessarily result in correct confidence intervals, those where the parameter of interest would be found in the interval in a prespecified proportion of trials. The reason for this could be found in the biasedness of the point estimators, where intervals of the eventually correct lengths were built around wrong point estimates, thus performing below the required coverage level. Thus, for the estimator $\widehat{\widehat{Y}}_{\{r,PS\}}$, whose variance was estimated approximately correctly irrespective of the covariance structure, the attained confidence level was nevertheless much below the required one when the correlation between the participation variable X_2 and the study variable Y was high (i.e., the covariance structures 2, 5, 6, and 8, that gave rise to the more biased point estimates—Figure 3).

It can be noted that the levels corresponding to the smaller amounts of data (SSIZE=1000 and KNRATIO=$\frac{1}{2}$) led to confidence intervals with somewhat better coverages than those with the larger amounts of data.

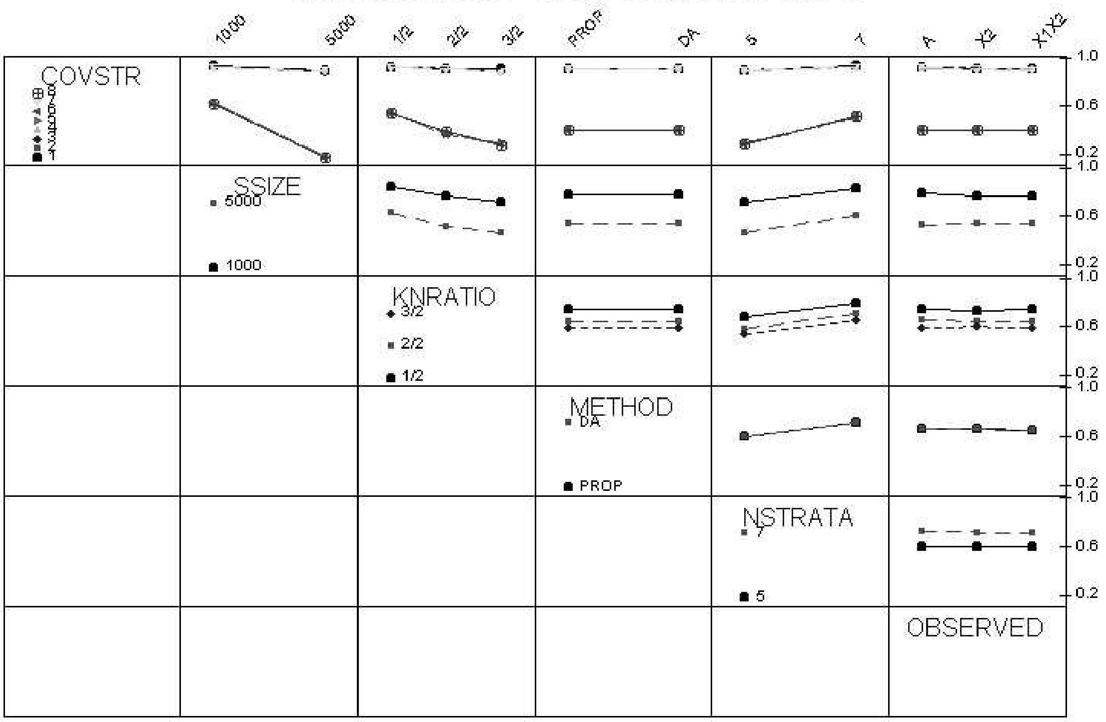

Figure 3: Case 0, interaction plot for *Clevel.* (Identification of the COVSTR levels given in the text.)

3.2 Case 1: SITA violated, not all the relevant information observed

The results presented thus far had not included the estimates that were based on just the auxiliary variable X_1 being observed (i.e., OBSERVED=X1). Observing only X_1 would amount to observing incomplete information: the participation variable X_2 is required instead in order to 'explain' Z. Only insofar as X_1 and X_2 would be correlated would the observation of X_1 help when X_2 ought to have been observed instead. So, here even the condition OBSERVED=X1 is added into the analysis besides the 6 factors and levels explored previously.

3.2.1 Case 1: Point estimation

The estimates of the mean of Y in the population based on only X_1 were considerably more biased than those derived using the true propensity score or when X_2 was amongst the variables observed (Figure 4). And, an interesting pattern arose: a comparison of the unadjusted estimates ($\bar{Y}_r$, the means of Y in the restricted sample r) with those adjusted on the estimated propensity scores after observing only X_1, across all the other factors, is given in Table 4 together with the corresponding correlation coefficients in the covariance matrix.

The bias of the unadjusted estimator $\bar{Y}_r$ was a function of ρ_{23}, which is the correlation between the participation variable X_2 and the study variable Y. When the participation variable X_2 was observed, the bias was reduced to approximately 10% of its original value,

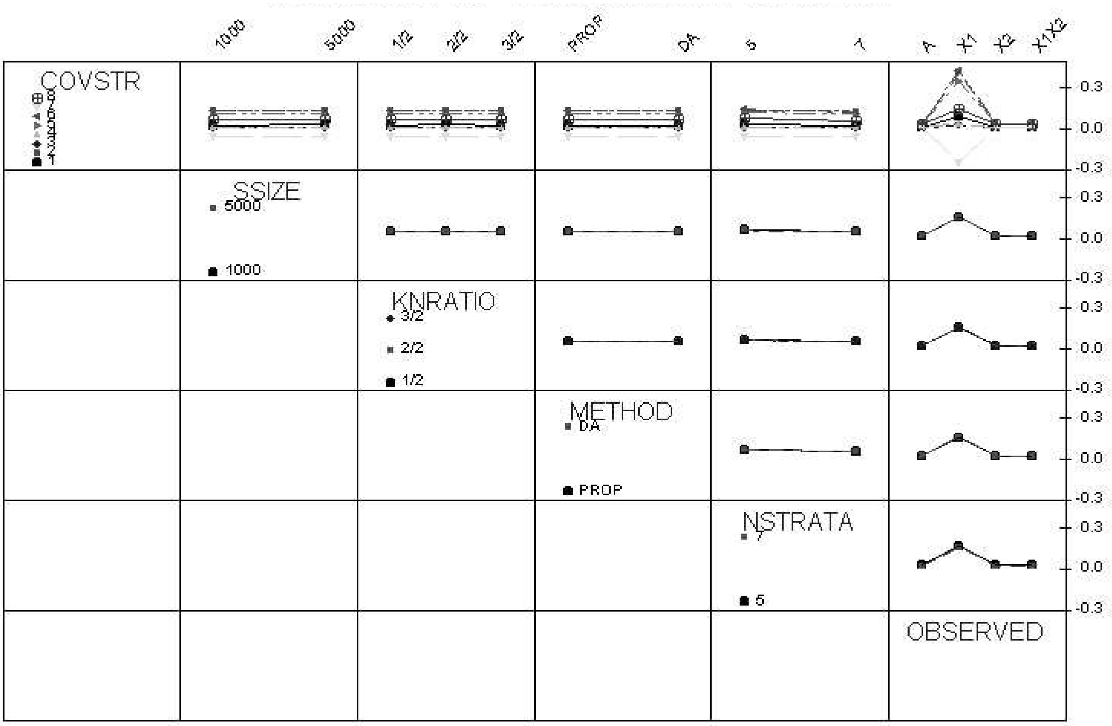

Figure 4: Case 1, interaction plot for *MeanBias*. (Identification of the COVSTR levels given in the text and Table 4.)

as reported in the preceding section of the results.

When X_2 was not observed but X_1 was, adjustment for the bias could be attempted using the information contained in the correlation between X_1 and X_2 (i.e., ρ_{12}) and the correlation between X_1 and Y (i.e., ρ_{13}). When information in both ρ_{12} and ρ_{13} was low, then the adjustment attempts in general resulted in small percentage reduction in bias, though smaller when ρ_{23} was high then when it was low (rows 1 and 2 corresponding to the estimator $\widehat{\widehat{Y}}_{\{r,\widehat{PS}_{X_1}\}}$—denoted for short $\widehat{\widehat{Y}}_1$— in Table 4). When the original bias was low (i.e., ρ_{23} was low), it took one of ρ_{12} and ρ_{13} to be high in order to produce a considerable reduction in bias (rows 3 and 4 corresponding to $\widehat{\widehat{Y}}_1$ in Table 4). But, when the original bias was high (i.e., ρ_{23} was high), it did not suffice that just one of ρ_{12} and ρ_{13} was high to produce a large reduction in bias (rows 5 and 6 corresponding to $\widehat{\widehat{Y}}_1$ in Table 4). Both needed to be high, and yet the percentage reduction in bias could only be moderate (row 8 corresponding to $\widehat{\widehat{Y}}_1$ in Table 4). But, when both the information contained in ρ_{12} and in ρ_{13} was at the high level but when the original bias was low, then the estimator "overadjusted" for the bias, actually almost doubling it (row 7 corresponding to $\widehat{\widehat{Y}}_1$ in Table 4).

The factor OBSERVED (including the level OBSERVED=X1) was by far the strongest among those included (Table V in the Appendix).

Table 4: The unadjusted estimators $\bar{Y}_r$ (the means across all drawn populations), and the adjusted estimators $\widehat{\widehat{Y}}_{MI,\cdot}$ with their corresponding percentages reduction in bias (*prb*) and empirical confidence levels of the nominal 95% confidence intervals (*Clevel*) for the 8 treated cases and, within each, for the 8 covariance structures across all the levels not defining a case.

Note: As the factor SITAVIO1 consists of three levels that generate different population and subset properties and have a different effect on the adjusted estimators, the component tables of Table 4 that correspond to negative values of $\rho_{.4}$ have a negative sign before their indices (in the lower part of the table), while the component tables that correspond to positive values of $\rho_{.4}$ do not have this sign (in the upper part of the table). The neutral case (case 0, no assumption violations) is placed in the middle of the table, just below the component tables refering to just SITA violation #2 (i.e., cases 3 and 5).

COVSTR	ρ_{12}	ρ_{13}	ρ_{23}	$\bar{Y}_r$	$\widehat{\widehat{Y}}_6$	*prb*	*Clevel*	$\widehat{\widehat{Y}}_7$	*prb*	*Clevel*
1	.22	.22	.22	.141	.096	32	.06	.116	18	.05
2	.22	.22	.78	.691	.546	21	0	.675	2	0
3	.22	.78	.22	.141	.114	19	.04	.041	71	.30
4	.78	.22	.22	.141	.092	35	.06	.028	80	.84
5	.22	.78	.78	.691	.563	19	0	.600	13	0
6	.78	.22	.78	.691	.539	22	0	.938	−36	0
7	.78	.78	.22	.141	.101	28	.04	−.594	−321	0
8	.78	.78	.78	.691	.549	21	0	.317	54	0
COVSTR	ρ_{12}	ρ_{13}	ρ_{23}	$\bar{Y}_r$	$\widehat{\widehat{Y}}_2$	*prb*	*Clevel*	$\widehat{\widehat{Y}}_4$	*prb*	*Clevel*
1	.22	.22	.22	.028	−.100	−258	.17	.022	21	.77
2	.22	.22	.78	.376	.008	98	.83	.371	1	0
3	.22	.78	.22	.028	−.078	−180	.37	.008	72	.79
4	.78	.22	.22	.028	−.105	−275	.15	−.056	−100	.36
5	.22	.78	.78	.376	.029	92	.63	.356	5	0
6	.78	.22	.78	.376	−.004	99	.76	.348	7	0
7	.78	.78	.22	.028	−.091	−224	.23	−.281	−904	0
8	.78	.78	.78	.376	.010	97	.80	.122	68	.01
COVSTR	ρ_{12}	ρ_{13}	ρ_{23}	$\bar{Y}_r$	$\widehat{\widehat{Y}}_3$	*prb*	*Clevel*	$\widehat{\widehat{Y}}_5$	*prb*	*Clevel*
1	.22	.22	.22	.200	.156	22	0	.164	18	0
2	.22	.22	.78	.708	.553	22	0	.686	3	0
3	.22	.78	.22	.200	.156	22	0	.058	71	.18
4	.78	.22	.22	.200	.156	22	0	.093	54	.34
5	.22	.78	.78	.708	.553	22	0	.581	18	0
6	.78	.22	.78	.708	.553	22	0	.972	−37	0
7	.78	.78	.22	.200	.156	22	0	−.553	−177	0
8	.78	.78	.78	.708	.553	22	0	.327	54	0
COVSTR	ρ_{12}	ρ_{13}	ρ_{23}	$\bar{Y}_r$	$\widehat{\widehat{Y}}_0$	*prb*	*Clevel*	$\widehat{\widehat{Y}}_1$	*prb*	*Clevel*
1	.22	.22	.22	.124	.013	90	.92	.101	19	.09
2	.22	.22	.78	.440	.045	90	.41	.421	4	0
3	.22	.78	.22	.124	.012	90	.92	.036	71	.37
4	.78	.22	.22	.124	.013	90	.91	.043	65	.52
5	.22	.78	.78	.440	.044	90	.41	.357	19	0
6	.78	.22	.78	.440	.044	90	.40	.435	1	0
7	.78	.78	.22	.124	.013	90	.91	−.240	−93	0
8	.78	.78	.78	.440	.044	90	.40	.152	66	0
COVSTR	ρ_{12}	ρ_{13}	ρ_{23}	$\bar{Y}_r$	$\widehat{\widehat{Y}}_{-2}$	*prb*	*Clevel*	$\widehat{\widehat{Y}}_{-4}$	*prb*	*Clevel*
1	.22	.22	.22	.206	.123	37	.14	.171	17	0
2	.22	.22	.78	.497	.083	83	.17	.474	5	0
3	.22	.78	.22	.206	.107	48	.28	.061	70	.16
4	.78	.22	.22	.206	.134	35	.13	.139	32	.05
5	.22	.78	.78	.497	.060	88	.35	.364	27	0
6	.78	.22	.78	.497	.096	81	.14	.531	−7	0
7	.78	.78	.22	.206	.120	42	.18	−.207	−1	0
8	.78	.78	.78	.497	.080	84	.18	.184	63	0
COVSTR	ρ_{12}	ρ_{13}	ρ_{23}	$\bar{Y}_r$	$\widehat{\widehat{Y}}_{-6}$	*prb*	*Clevel*	$\widehat{\widehat{Y}}_{-7}$	*prb*	*Clevel*
1	.22	.22	.22	.245	.207	15	0	.203	17	0
2	.22	.22	.78	.719	.556	23	0	.697	3	0
3	.22	.78	.22	.245	.194	21	0	.072	70	.11
4	.78	.22	.22	.245	.212	14	0	.152	38	.15
5	.22	.78	.78	.719	.543	25	0	.566	21	0
6	.78	.22	.78	.719	.564	22	0	1.005	−40	0
7	.78	.78	.22	.245	.204	17	0	−.516	−110	0
8	.78	.78	.78	.719	.557	23	0	.337	53	0

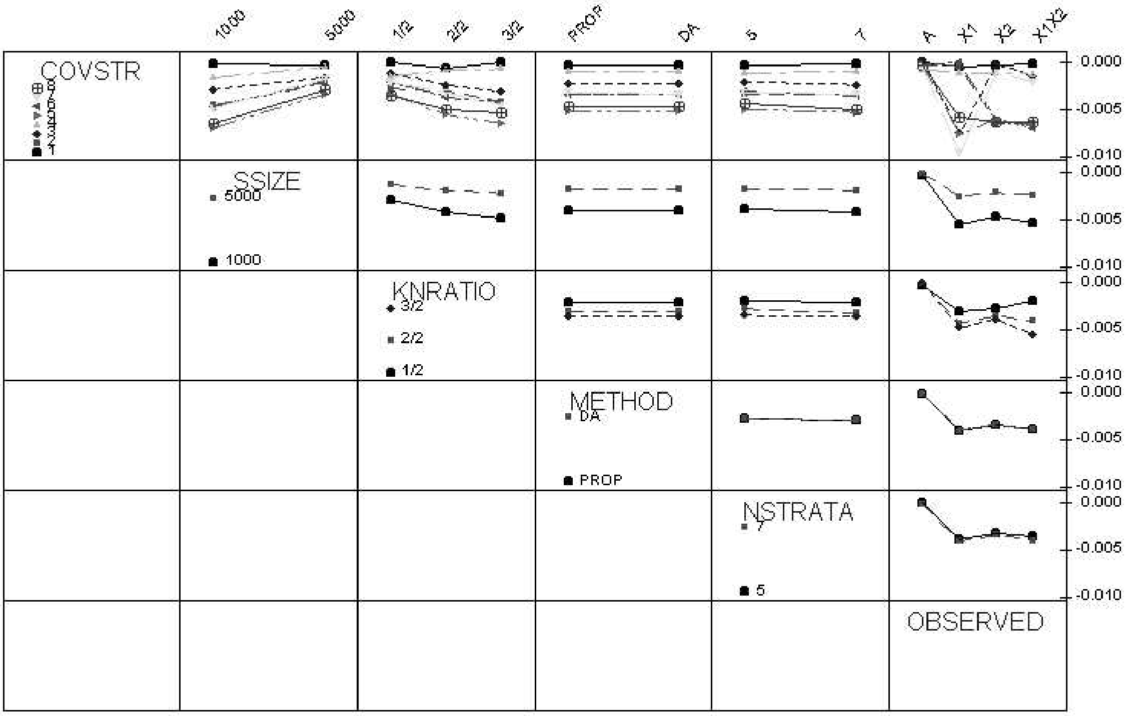

Figure 5: Case 1, interaction plot for *StDiff*. (Identification of the COVSTR levels given in the text.)

3.2.2 Case 1: Variance estimation

The accuracy of the variance estimation for the estimator involving only X_1 followed in a sense the same pattern as for those reported for the corresponding results for Case 0. It was less biased or practically unbiased for some covariance structures, here those where the correlation between X_1 and Y was low ($\rho_{13} = .22$): that is, the structures denoted by the numbers 1, 2, 4, and 6. And it was more biased for the covariance structures where the correlation between X_1 and Y was high ($\rho_{13} = .78$): that is, those denoted by the numbers 3, 5, 7, and 8 (Figure 5, the pane COVSTR × OBSERVED). But, as previously, that the variance estimate was correct did not help to achieve the desired significance level of the confidence intervals: the biased point estimate prevented this (Figure 6).

3.3 Case 2: SITA violated, Y and Z correlated after all the relevant information observed

A dependence between the study variable Y and the indicator of the subset membership Z that remains after conditioning their joint distribution on the auxiliary information, symbolically represented as $(Y \angle Z) \mid \mathbf{X}$, violates one of the assumptions of SITA. In such a situation, in words, there exists information in the subset membership Z about Y that is not available for adjustment by the propensity score technique. This factor, named SITAVIO1, was now added to the 6 previously analysed ones: COVSTR, SSIZE, KNRATIO, METHOD, NSTRATA, and OBSERVED (excluding OBSERVED=X1).

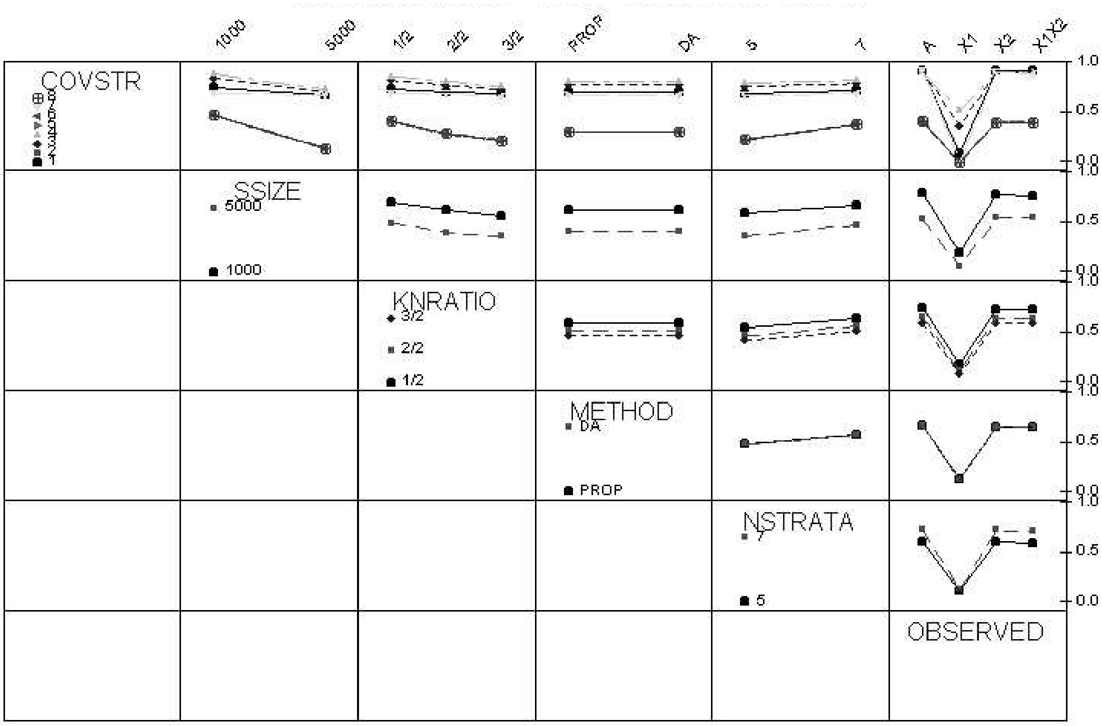

Figure 6: Case 1, interaction plot for *Clevel*. (Identification of the COVSTR levels given in the text.)

3.3.1 Case 2: Point estimation

The direction of influence of a remaining conditional dependence, $(Y \angle Z) \mid \mathbf{X}$, on the estimate of the mean of Y in the population was a function of the sign of the correlation coefficient $\rho_{.4}$ between $\mathbf{X}$ and Y. Negative correlations increased the point estimate and positive ones decreased it (Figure 7). If with $\rho_{.4} = 0$ the point estimate was an overestimate, then a change in the covariance structure to a negative $\rho_{.4}$ would increase the bias, while a change to a positive $\rho_{.4}$, for an appropriate range of small values of $\rho_{.4}$, would decrease the bias but for a large value of $\rho_{.4}$ again increase it. The reverse would hold if, with $\rho_{.4} = 0$, the point estimate was an underestimate.

The factor SITAVIO1 was by far the strongest among those included (Table IX in the Appendix).

The covariance structures differed in how much they were affected by the departures of $\rho_{.4}$ from zero. More resistant were those where the correlation between the participation variable X_2 and the study variable Y was high (the structures 2, 5, 6, and 8), while less resistant were those where the correlation between X_2 and Y was low (the structures 1, 3, 4, and 7).

3.3.2 Case 2: Variance estimation

The simulation statistics related to variance estimation and confidence levels, *StDiff* and *Clevel*, followed in general the patterns detected for the corresponding results for the Cases 0 and 1.

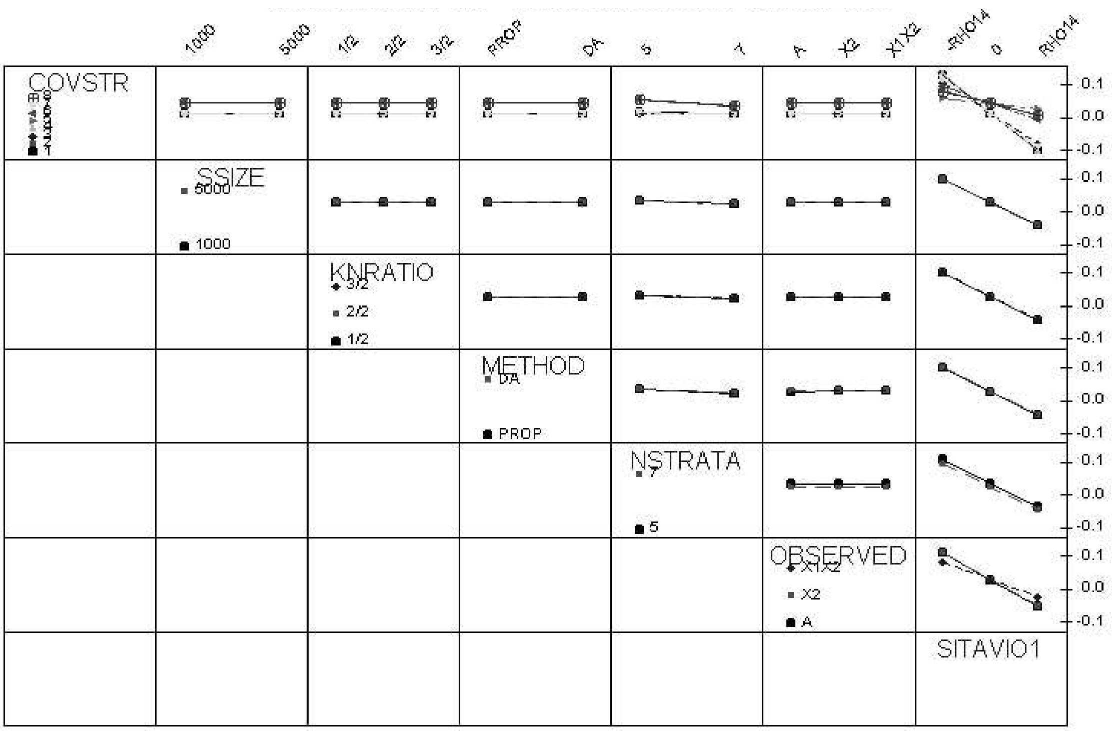

Figure 7: Case 2, interaction plot for *MeanBias*. (Identification of the COVSTR levels given in the text.)

For the level METHOD=A, *StDiff* was almost correct irrespective of the covariance structure and of the $\rho_{.4}$, but the confidence level was approximately correct in only two of the six cases: it was approximately correct when $\rho_{.4} = 0$ for the covariance structures with low correlation between the participation variable X_2 and the study variable Y (the structures 1, 3, 4, and 7), and it was approximately correct when $\rho_{.4} = .175$ for the covariance structures with high correlation of the two variables (the structures 2, 5, 6, and 8). The latter is result due to the point estimate having been "drawn" towards the correct value by the positive $\rho_{.4}$, as mentioned under the preceding heading, "Point estimation". For all the other combinations of ρ_{23} and $\rho_{.4}$ the confidence level was quite low, between .1 and .4.

When the propensity score was estimated (i.e. METHOD$\neq$A), the variance estimates for the covariance structures 1, 3, 4, and 7 (those with low correlation ρ_{23} between the participation variable X_2 and the study variable Y) were approximately correct for all the three levels of $\rho_{.4}$, while the variance estimates for the structures 2, 5, 6, and 8 (those with high ρ_{23}) were considerably underestimating the true variances for all the three levels of $\rho_{.4}$. The effect on confidence level was even here that the positive $\rho_{.4}$ "drew" the point estimate towards the correct value, enabling even underestimated confidence intervals to cover the true parameter in a somewhat higher proportion of outcomes then when $\rho_{.4} = 0$.

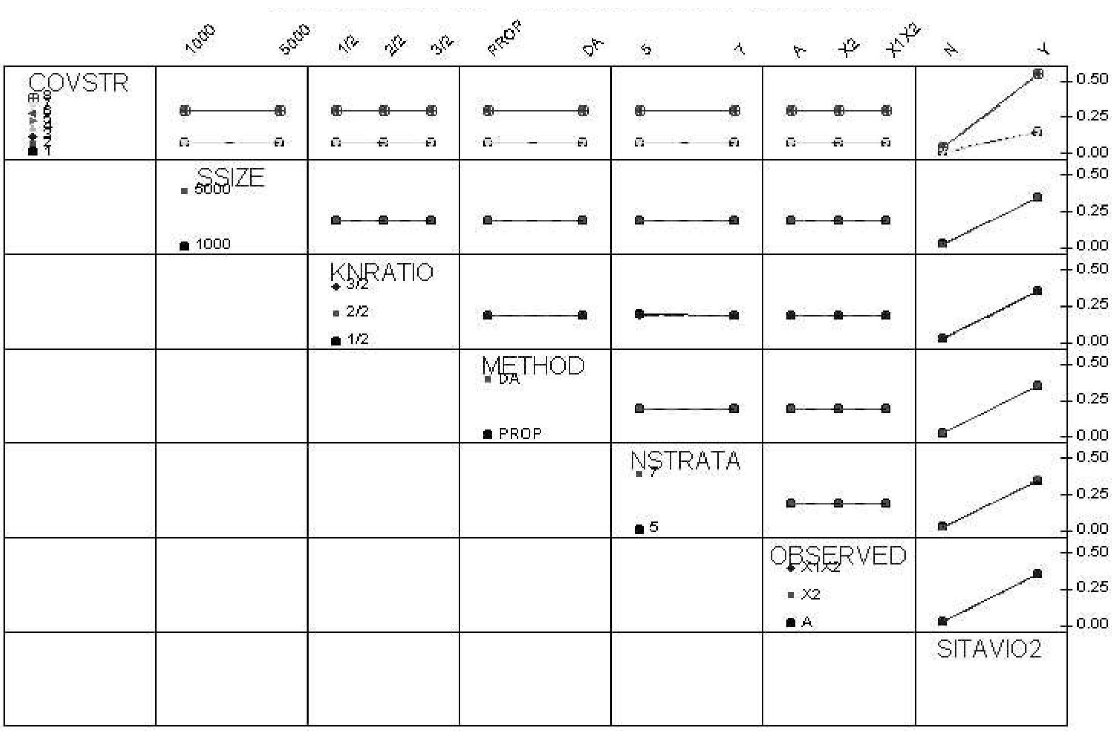

Figure 8: Case 3, interaction plot for *MeanBias*. (Identification of the COVSTR levels given in the text.)

3.4 Case 3: SITA violated, not all units given a positive probability to appear in r

When the determining property of the subset was $Z = I_{V<X_2}$, a unit in the subset may have taken on any value of X_2, it was only more probable that it would have taken on a higher X_2 value then what a unit in the population would, on the average. When, on the other hand, the determining property of the subset was $Z = I_{\max(V,0)<X_2}$—as in the alternative termed "SITA violation #2"—no unit in the subset may have taken on a negative value of X_2. In other words, units with the negative X_2 had no chance to appear in the sample from the subset, r. While far from the only such rule, in what follows the effects of just the rule $I_{\max(V,0)<X_2}$ were investigated.

3.4.1 Case 3: Point estimation

That only the units with positive X_2 values could appear in the restricted sample r had a big effect on the adjusted point estimates of the mean of Y in the population, which was due to the correlation between X_2 and Y. Accordingly, the covariance structures with high ρ_{23} (i.e., the structures 2, 5, 6, and 8) were more biased than those with low ρ_{23}.(Figure 8).

It is interesting to note that not much of the unadjusted bias could in this case of SITA violation be corrected by the propensity score technique. For the covariance structures with high ρ_{23}, the reduction was from .622 to .553, that is, 11%, and for the covariance structures with low ρ_{23}, it was from .175 to .156, again 11%. This held irrespective of

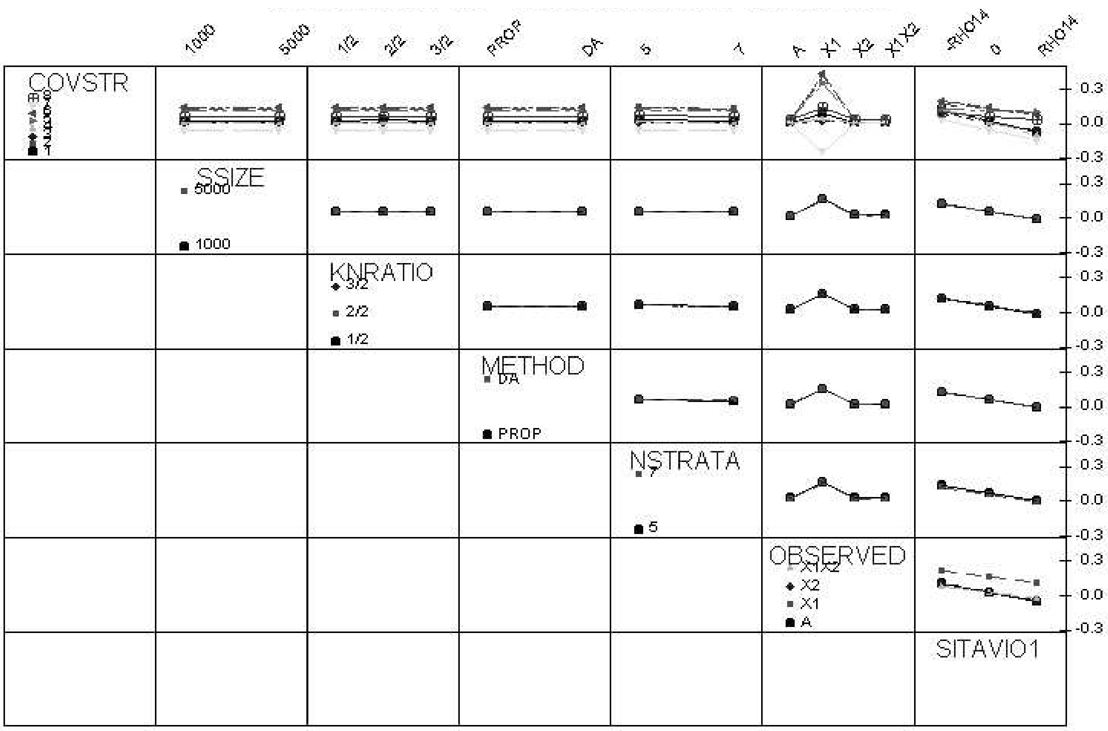

Figure 9: Case 4, interaction plot for *MeanBias*.

whether the true or the estimated propensity score was used.

The factor SITAVIO2 was by far the dominating one in the ANOVA decomposition for *MeanBias* (Table XIII in the Appendix).

3.4.2 Case 3: Variance estimation

With the current violation of SITA, variance estimates underestimated the true variance of the point estimators: the mean of *StDiff* for SITAVIO2=YES, across all the other factors, was $-.0145$ (Table XVI in the Appendix). This, coupled to grossly biased point estimates, yielded empirical confidence levels that were off the mark practically all the time.

3.5 Case 4–Case 6: Pairwise combinations of the SITA violations

The cases 4-6 present pairwise combinations of the SITA violations investigated under Case 1 – Case 3. The results are reported only for *MeanBias*, in Figures 9–11 (but the details concerning all the simulation statistics can be found in the Appendix).

The main conclusion could be drawn that also with combinations of the SITA violations, the adjusted point estimates of the mean of Y in the population were in general badly biased. But, in some cases of interaction of the factor levels, these estimates were less biased than without such an interaction. Two identified sources for this were the level RHO14 of the factor SITAVIO1 and the level OBSERVED=X1. Regarding the former, the impact of RHO14 was to“draw” the adjusted point estimates in the negative direction

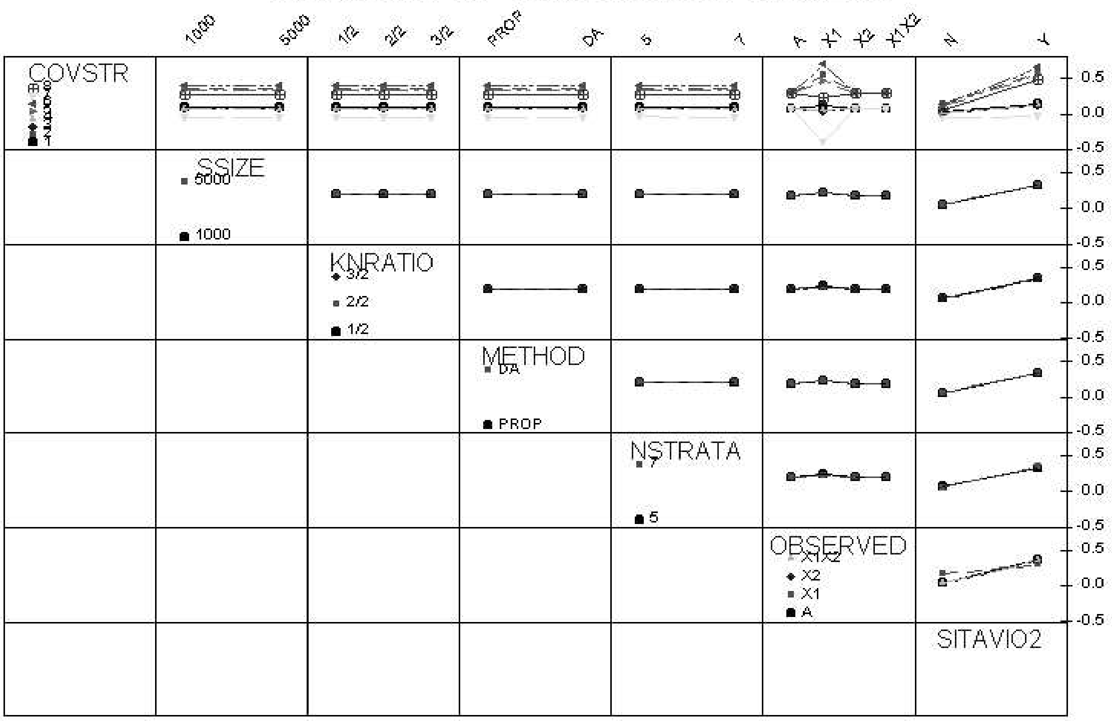

Figure 10: Case 5, interaction plot for *MeanBias*.

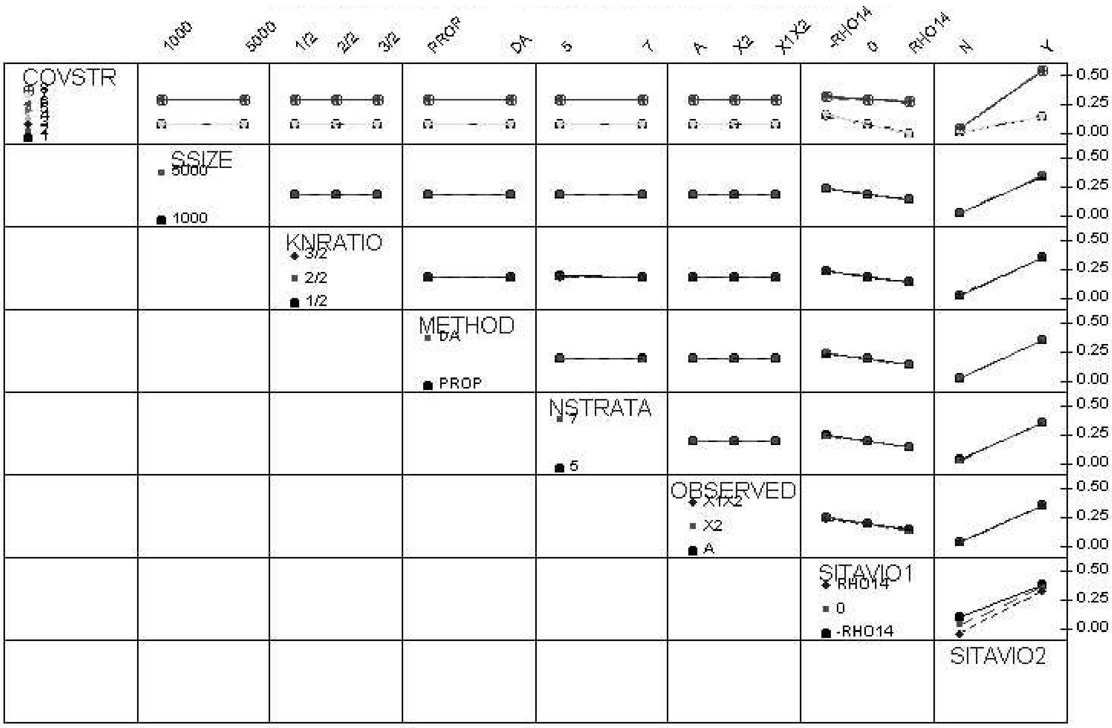

Figure 11: Case 6, interaction plot for *MeanBias*.

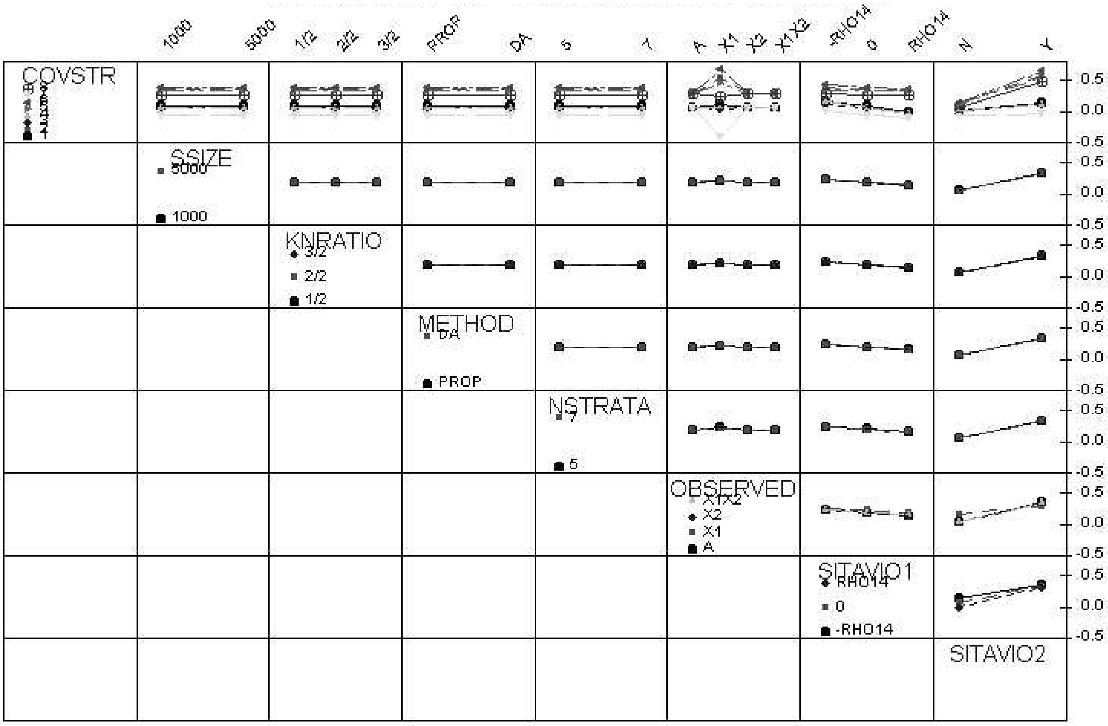

Figure 12: Case 7, interaction plot for *MeanBias*. (Identification of the COVSTR levels given in the text.)

thus having the potential to reduce the remaining bias of any overestimating adjusted point estimate. Regarding the latter, OBSERVED=X1 coupled with covariance structure 7 led to major underestimation and thus it too had the potential to reduce the bias of an overestimating point estimate.

How beneficial would the effect of these sources together be is something predictable only provided all the relevant information on the exact nature of the SITA violations is known in advance—which is difficult to achieve in practice. In other words, while under some fortuitous occasions violation of the SITA assumptions could actually reduce the bias, it is difficult to determine, without the complete knowledge, for some situation at hand whether it is such an occasion or not.

3.6 Case 7: All the violations at the same time

The preceding remarks concerning the influence of the pairwise violations of the SITA assumptions on the point estimates were applicable also when all the violations were introduced into the same experiment (Figure 12). Of interest remained to compare the relative contributions of the studied factors in this case when they all were present.

The comparison was done using the ANOVA decomposition for *MeanBias* (Table XXIX in the Appendix). In Table 5, the 11 most important effects from this table are presented in the descending order of their F-statistics values; together, these effects accounted for the 98% of the observed sums of squares.

The two factors with the greatest impact on the bias of the adjusted point estimate were SITAVIO2 and COVSTR, in this order, while their interaction had the third largest

Table 5: Case 7, partial reproduction of the ANOVA decomposition for *MeanBias* (Table XXIX in the Appendix): the effects with P<.05 presented in an approximate increasing order of magnitude (the first 9 P-values were evaluated as 0 by the *F cdf* function of a mathematical program with precise calculation (Maple), why they are given in the order where main effects come first, followed by their interactions).

Source	DF	Seq SS	Adj SS	Adj MS	F	P
SITAVIO2	1	86.8276	86.8276	86.8276	62000	0
COVSTR	7	110.0035	110.0035	15.7148	11000	0
SITAVIO1	2	6.6733	6.6733	3.3366	2387.23	0
OBSERVED	3	1.0825	1.0825	0.3608	258.15	0
COVSTR*SITAVIO2	7	39.2281	39.2281	5.604	4009.44	0
OBSERVED*SITAVIO2	3	8.3244	8.3244	2.7748	1985.26	0
COVSTR*OBSERVED	21	52.8658	52.8658	2.5174	1801.11	0
SITAVIO1*SITAVIO2	2	1.2206	1.2206	0.6103	436.65	0
COVSTR*SITAVIO1	14	2.5494	2.5494	0.1821	130.28	0
OBSERVED*SITAVIO1	6	0.2637	0.2637	0.044	31.45	0
NSTRATA*SITAVIO2	1	0.0592	0.0592	0.0592	42.36	0
METHOD*SITAVIO1	2	0.0197	0.0197	0.0099	7.06	0.001
NSTRATA	1	0.0078	0.0078	0.0078	5.57	0.018

impact. SITAVIO1 had the next largest impact, followed by some of the interactions of the factor OBSERVED and then this factor by itself together with some other of the pairwise interactions.

It is noteworthy that two of the "regular" factors—not involving violations of the assumptions for the propensity score technique—showed a large influence on the adjusted point estimate even when the assumptions were not fulfilled. These were COVSTR and OBSERVED, emphasizing the two facts: (a) that the true (and not known beforehand) covariance structure of the data at hand may have a profound effect on the adjusted point estimate, and (b) that failure to observe all the relevant information may too have a profound effect on this estimate.

4 Conclusions

This simulation of the propensity score adjustment technique partially demonstrated the practical viability of the approach and partially investigated the effects of certain factors whose influence it was not possible to express in a closed statement. An important aspect concerning the latter goal was the behaviour of the propensity score adjusted point estimate under violations of the assumptions required for the technique to work optimally. The following summary of the results starts with the situation when the assumptions held.

4.1 The factors conforming to the SITA assumptions

4.1.1 Method

The only factor that in the present study had no significant effect on the remaining bias of the adjusted point estimate was the method for estimation of the propensity score: applying logistic regression versus discriminant analysis resulted in only negligible differences between the point estimates. It was already noted that the two methods yield theoretically the same results under the models chosen for this study: only the differences related to the estimation algorithms were eventually expected to show up—these turned out to be practically nonexistent. With other models, the outcome might have been different.

4.1.2 Observed variables

The rest of the factors did have a significant effect. Whether the distribution of the true propensity score was known, or estimated using the variable that "really" determined the participation, or using this variable plus another variable, did have an increasing effect on the remaining bias of the resulting point estimate.

Even interaction of this factor with the sample size was significant: the aforementioned effect was noticeable with the smaller sample size but had practically vanished with the larger sample size.

4.1.3 Balance of the samples

Next, the ratio of the sizes of the samples s and r did have an effect on the remaining bias of the adjusted point estimate. Increasing this factor—from the restricted sample r being half the size of s, to being as large as s, to being one and a half the size of s—led to the reduction of the bias of the point estimate. An increase in this factor always implied access to more data, which resulted in more accurate point estimates. Another candidate explanation, needing further exploration, would be that with more data available, the chances for a stratum being empty in the restricted sample were smaller, leading to a smaller bias of the resulting estimate: the significant interaction between this factor and the sample size, with much smaller effect on the high sample size level, possibly gives support to this interpretation.

4.1.4 Sizes of the samples

The sample size was a factor whose increase led to a smaller bias of the resulting point estimates, with the straightforward interpretation that with more data the estimates became more precise, as well as that the chance of a stratum being empty in the restricted sample was smaller with larger sample sizes.

4.1.5 Number of strata

Finally, the two factors with the largest impact on the remaining bias of the adjusted point estimate were the number of strata into which to classify the observations and the covariance structure of the data at hand. Both were theoretically expected, as it was demonstrated in for instance (Lorenc, 2003). Interestingly, the interaction NSTRATA×SSIZE proved to be insignificant contrary to the expectation that with the small sample size the larger number of strata would more frequently lead to empty strata in the restricted sample and thus to larger bias of the resulting point estimates, compared to the large sample size. Possibly, with a further reduction of the sample size, the effect would eventually show up.

4.1.6 Covariance structure

The remaining bias of the point estimate for the 8 covariance structures was dependent on the correlation between the "participation" variable and the study variable. But, this correlation also determined the original bias: it was higher for the structures with the higher correlation, and lower for those with the lower correlation. So, the propensity score adjustment did in fact have in both cases (i.e., with both high and low ρ_{23}) the same percentage reduction in bias.

4.2 The factors violating the SITA assumptions

The remaining three factors—whether all the relevant auxiliary information was observed, whether the study variable Y could be "untangled" from the subset indicator Z, and whether all the units in the population had a positive chance to appear in the restricted sample r—had substantial effects on the remaining bias of the adjusted point estimator. As the levels of particularly the latter two of the factors (SITAVIO1 and SITAVIO2, respectively) were set rather arbitrarily, their impact in the present study should be taken as an illustration of their potential rather than as something to directly generalize to other situations.

4.2.1 Not all relevant information observed

The effect of not observing all relevant auxiliary information—more precisely, of missing the participation variable—proved particularly interesting in the case when the available auxiliary information was highly correlated with both the participation variable and the study variable but the correlation of the latter two was poor. In this case, a strong overadjustment occurred, resulting in almost doubling the original bias.

4.2.2 Y and Z correlated after all relevant information observed

Peculiar to the case of a remaining correlation between the study variable and the subset indicator after conditioning on the auxiliary information was that, dependent on the sign of the correlation, this could increase or decrease the remaining bias of the adjusted point estimator. If there was a remaining bias in this estimator, as in general is the case with the propensity score adjusted estimates, then under "lucky" occasions the remaining correlation may have reduced the bias of the adjusted estimator, compared to the case with no remaining correlation. Unfortunately, the researcher in real applications has no such deep knowledge of the variables of relevance (and in particular of the study variables) to be able to count on this: had this knowledge existed, no study would have been needed in the first place. Thus, counting on this effect would in general be like “shooting in the dark”.

4.2.3 Not all units had a positive chance to appear in r

That the factor SITAVIO2 had a profound effect in the study depended to a large degree on the rough alternative inclusion function chosen, $Z = I_{\max(V,0)<X_2}$. There are infinitely many other functions that could be conceived, with a varying effect on the remaining bias of the point estimate.

4.3 Summary

This study demonstrated the effectiveness of the propensity score weighting technique in the situation with known properties of the underlying population, and investigated the effect of some of the factors plausibly in effect even in real-life studies, thus providing some impression of what might be expected in practical applications of this same technique. The study proved practically that the propensity score weighting works, reducing most of the bias in the situation when the assumptions that pertain to the technique hold. It further demonstrated the relative sensitivity of the resulting estimates to variation of both the factors internal to the technique (like sample sizes, ratio of the sample sizes, number of strata, etc.) and the factors that determine the nature of data to which the technique is applied (like covariance structure and the violations of the assumptions).

Acknowledgement

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Appendix to: "Propensity Score Weighting with Double Samples: a Simulation Study"

Table I: Case 0: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.14577	0.14577	0.020825	33000	0
SSIZE	1	1.43e-005	1.43e-005	1.43e-005	22.74	0
KNRATIO	2	1.95e- 005	1.95e-005	9.8e-006	15.52	0
METHOD	1	0	0	0	0.01	0.936
NSTRATA	1	0.019877	0.019877	0.019877	32000	0
OBSERVED	2	9.4e- 006	9.4e-006	4.7e-006	7.44	0.001
COVSTR*SSIZE	7	2.36e-005	2.36e- 005	3.4e-006	5.37	0
COVSTR*KNRATIO	14	4.56e-005	4.56e-005	3.3e- 006	5.17	0
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.0066643	0.0066643	0.000952	1513.65	0
COVSTR*OBSERVED	14	1.3e-005	1.3e-005	9e-007	1.48	0.116
SSIZE*KNRATIO	2	5.7e- 006	5.7e-006	2.8e-006	4.5	0.012
SSIZE*METHOD	1	0	0	0	0	0.956
SSIZE*NSTRATA	1	1e-007	1e-007	1e-007	0.1	0.749
SSIZE*OBSERVED	2	4e- 006	4e-006	2e-006	3.16	0.043
KNRATIO*METHOD	2	0	0	0	0	0.999
KNRATIO*NSTRATA	2	6.8e-006	6.8e-006	3.4e-006	5.37	0.005
KNRATIO*OBSERVED	4	1.4e-006	1.4e-006	4e-007	0.57	0.688
METHOD*NSTRATA	1	0	0	0	0	0.981
METHOD*OBSERVED	2	0	0	0	0.01	0.993
NSTRATA*OBSERVED	2	9e- 007	9e-007	5e-007	0.73	0.48
Error	493	0.0003101	0.0003101	6e- 007		
Total	575	0.17277				

Table II: Case 0: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	37.2582	37.2582	5.3226	6062.92	0
SSIZE	1	8.2455	8.2455	8.2455	9392.37	0
KNRATIO	2	2.0371	2.0371	1.0186	1160.24	0
METHOD	1	0	0	0	0	0.944
NSTRATA	1	2.1805	2.1805	2.1805	2483.83	0
OBSERVED	2	0.00458	0.00458	0.00229	2.61	0.075
COVSTR*SSIZE	7	5.9219	5.9219	0.84598	963.65	0
COVSTR*KNRATIO	14	1.216	1.216	0.08686	98.94	0
COVSTR*METHOD	7	2e- 005	2e-005	0	0	1
COVSTR*NSTRATA	7	1.3157	1.3157	0.18796	214.1	0
COVSTR*OBSERVED	14	0.00756	0.00756	0.00054	0.62	0.853
SSIZE*KNRATIO	2	0.01936	0.01936	0.00968	11.02	0
SSIZE*METHOD	1	0	0	0	0	0.991
SSIZE*NSTRATA	1	0.03878	0.03878	0.03878	44.17	0
SSIZE*OBSERVED	2	0.03245	0.03245	0.01622	18.48	0
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	0.00476	0.00476	0.00238	2.71	0.068
KNRATIO*OBSERVED	4	0.00546	0.00546	0.00136	1.55	0.186
METHOD*NSTRATA	1	0	0	0	0	0.978
METHOD*OBSERVED	2	1e- 005	1e-005	0	0	0.995
NSTRATA*OBSERVED	2	0.00212	0.00212	0.00106	1.21	0.3
Error	493	0.4328	0.4328	0.00088		
Total	575	58.7229				

Table III: Case 0: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.0019646	0.0019646	0.0002807	229.97	0
SSIZE	1	0.0005142	0.0005142	0.0005142	421.3	0
KNRATIO	2	0.0002038	0.0002038	0.0001019	83.51	0
METHOD	1	0	0	0	0.03	0.858
NSTRATA	1	7.8e- 006	7.8e-006	7.8e-006	6.39	0.012
OBSERVED	2	0.0015392	0.0015392	0.0007696	630.63	0
COVSTR*SSIZE	7	0.0003067	0.0003067	4.38e-005	35.9	0
COVSTR*KNRATIO	14	0.0001972	0.0001972	1.41e-005	11.54	0
COVSTR*METHOD	7	1e- 007	1e-007	0	0.01	1
COVSTR*NSTRATA	7	9e-006	9e-006	1.3e- 006	1.05	0.397
COVSTR*OBSERVED	14	0.0009991	0.0009991	7.14e- 005	58.47	0
SSIZE*KNRATIO	2	2.12e-005	2.12e-005	1.06e-005	8.71	0
SSIZE*METHOD	1	0	0	0	0	0.961
SSIZE*NSTRATA	1	1.5e- 006	1.5e-006	1.5e-006	1.26	0.262
SSIZE*OBSERVED	2	0.0002533	0.0002533	0.0001267	103.79	0
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	3.5e-006	3.5e-006	1.7e-006	1.42	0.243
KNRATIO*OBSERVED	4	0.0002409	0.0002409	6.02e- 005	49.36	0
METHOD*NSTRATA	1	0	0	0	0	0.982
METHOD*OBSERVED	2	1e-007	1e-007	0	0.03	0.969
NSTRATA*OBSERVED	2	1.7e-006	1.7e-006	9e-007	0.7	0.497
Error	493	0.0006017	0.0006017	1.2e-006		
Total	575	0.0068655				

Table IV: Case 0: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.012504	9.3e- 005	0.91742	0.003492	-2.7e-005	0.00013
2	0.044552	9.3e- 005	0.40747	0.003492	-0.004258	0.00013
3	0.012422	9.3e- 005	0.91565	0.003492	-0.000376	0.00013
4	0.012845	9.3e- 005	0.91119	0.003492	-0.000919	0.00013
5	0.044397	9.3e- 005	0.4065	0.003492	-0.004215	0.00013
6	0.04449	9.3e- 005	0.40218	0.003492	-0.004346	0.00013
7	0.012695	9.3e- 005	0.91086	0.003492	-0.001132	0.00013
8	0.044288	9.3e- 005	0.40442	0.003492	-0.004197	0.00013
SSIZE						
1000	0.028682	4.7e-005	0.77911	0.001746	-0.003379	6.5e-005
5000	0.028367	4.7e-005	0.53982	0.001746	-0.001489	6.5e-005
KNRATIO						
1/2	0.028784	5.7e- 005	0.73776	0.002138	-0.001657	8e-005
2/2	0.028396	5.7e- 005	0.64692	0.002138	-0.002542	8e-005
3/2	0.028392	5.7e- 005	0.59371	0.002138	-0.003102	8e-005
METHOD						
PROP	0.028521	4.7e-005	0.65955	0.001746	-0.002426	6.5e-005
DA	0.028527	4.7e-005	0.65938	0.001746	-0.002442	6.5e-005
NSTRATA						
5	0.034399	4.7e- 005	0.59793	0.001746	-0.002318	6.5e-005
7	0.02265	4.7e- 005	0.72099	0.001746	-0.00255	6.5e-005
OBSERVED						
A	0.028376	5.7e-005	0.6625	0.002138	-0.000138	8e-005
X2	0.028509	5.7e-005	0.66018	0.002138	-0.003349	8e-005
X1X2	0.028687	5.7e-005	0.65571	0.002138	-0.003816	8e-005
COVSTR*SSIZE						
1 1000	0.012424	0.000132	0.93803	0.004938	0.000201	0.000184
1 5000	0.012584	0.000132	0.89681	0.004938	-0.000255	0.000184
2 1000	0.044917	0.000132	0.62722	0.004938	-0.005846	0.000184
2 5000	0.044188	0.000132	0.18772	0.004938	-0.002671	0.000184
3 1000	0.012219	0.000132	0.93775	0.004938	-0.000355	0.000184
3 5000	0.012625	0.000132	0.89356	0.004938	-0.000398	0.000184
4 1000	0.013224	0.000132	0.92825	0.004938	-0.001487	0.000184
4 5000	0.012465	0.000132	0.89414	0.004938	-0.000351	0.000184
5 1000	0.04462	0.000132	0.62761	0.004938	-0.00571	0.000184
5 5000	0.044175	0.000132	0.18539	0.004938	-0.002721	0.000184
6 1000	0.044579	0.000132	0.62478	0.004938	-0.006094	0.000184
6 5000	0.044401	0.000132	0.17958	0.004938	-0.002599	0.000184
7 1000	0.012826	0.000132	0.92422	0.004938	-0.001942	0.000184
7 5000	0.012564	0.000132	0.8975	0.004938	-0.000323	0.000184
8 1000	0.044644	0.000132	0.625	0.004938	-0.005797	0.000184
8 5000	0.043931	0.000132	0.18383	0.004938	-0.002597	0.000184
COVSTR*KNRATIO						
1 1/2	0.012528	0.000162	0.93125	0.006048	0.000259	0.000225
1 2/2	0.012739	0.000162	0.91321	0.006048	-0.000521	0.000225
1 3/2	0.012244	0.000162	0.90779	0.006048	0.000181	0.000225
2 1/2	0.045094	0.000162	0.54325	0.006048	-0.003564	0.000225
2 2/2	0.044253	0.000162	0.38554	0.006048	-0.003895	0.000225
2 3/2	0.04431	0.000162	0.29363	0.006048	-0.005316	0.000225
3 1/2	0.013035	0.000162	0.93358	0.006048	0.000478	0.000225
3 2/2	0.012081	0.000162	0.91908	0.006048	-0.000521	0.000225
3 3/2	0.01215	0.000162	0.89429	0.006048	-0.001086	0.000225
4 1/2	0.013172	0.000162	0.92579	0.006048	-0.0016	0.000225
4 2/2	0.012186	0.000162	0.91542	0.006048	-0.000619	0.000225
4 3/2	0.013175	0.000162	0.89238	0.006048	-0.000537	0.000225
5 1/2	0.044342	0.000162	0.55033	0.006048	-0.002275	0.000225
5 2/2	0.044786	0.000162	0.36946	0.006048	-0.004774	0.000225
5 3/2	0.044064	0.000162	0.29971	0.006048	-0.005597	0.000225
6 1/2	0.044349	0.000162	0.54538	0.006048	-0.002855	0.000225
6 2/2	0.044478	0.000162	0.37288	0.006048	-0.004606	0.000225
6 3/2	0.044644	0.000162	0.28829	0.006048	-0.005578	0.000225
7 1/2	0.012964	0.000162	0.93129	0.006048	-0.000228	0.000225
7 2/2	0.012764	0.000162	0.91254	0.006048	-0.000942	0.000225
7 3/2	0.012356	0.000162	0.88875	0.006048	-0.002228	0.000225
8 1/2	0.044791	0.000162	0.54117	0.006048	-0.003474	0.000225
8 2/2	0.043881	0.000162	0.38721	0.006048	-0.004459	0.000225
8 3/2	0.044191	0.000162	0.28487	0.006048	-0.004658	0.000225

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*METHOD						
1 PROP	0.012501	0.000132	0.91742	0.004938	-2.8e-005	0.000184
1 DA	0.012507	0.000132	0.91742	0.004938	-2.6e-005	0.000184
2 PROP	0.044552	0.000132	0.40736	0.004938	-0.004259	0.000184
2 DA	0.044553	0.000132	0.40758	0.004938	-0.004257	0.000184
3 PROP	0.012416	0.000132	0.91592	0.004938	-0.000368	0.000184
3 DA	0.012428	0.000132	0.91539	0.004938	-0.000385	0.000184
4 PROP	0.012841	0.000132	0.91122	0.004938	-0.000914	0.000184
4 DA	0.012848	0.000132	0.91117	0.004938	-0.000923	0.000184
5 PROP	0.044395	0.000132	0.40642	0.004938	-0.004205	0.000184
5 DA	0.0444	0.000132	0.40658	0.004938	-0.004225	0.000184
6 PROP	0.044488	0.000132	0.40217	0.004938	-0.004332	0.000184
6 DA	0.044493	0.000132	0.40219	0.004938	-0.004361	0.000184
7 PROP	0.012694	0.000132	0.91122	0.004938	-0.001102	0.000184
7 DA	0.012696	0.000132	0.9105	0.004938	-0.001163	0.000184
8 PROP	0.044285	0.000132	0.40467	0.004938	-0.004197	0.000184
8 DA	0.04429	0.000132	0.40417	0.004938	-0.004197	0.000184
COVSTR*NSTRATA						
1 5	0.015119	0.000132	0.90239	0.004938	-9.2e-005	0.000184
1 7	0.009888	0.000132	0.93244	0.004938	3.9e-005	0.000184
2 5	0.053656	0.000132	0.29997	0.004938	-0.004221	0.000184
2 7	0.035449	0.000132	0.51497	0.004938	-0.004296	0.000184
3 5	0.014596	0.000132	0.9025	0.004938	-0.000168	0.000184
3 7	0.010248	0.000132	0.92881	0.004938	-0.000584	0.000184
4 5	0.015224	0.000132	0.89869	0.004938	-0.000974	0.000184
4 7	0.010465	0.000132	0.92369	0.004938	-0.000863	0.000184
5 5	0.053763	0.000132	0.29578	0.004938	-0.004108	0.000184
5 7	0.035032	0.000132	0.51722	0.004938	-0.004323	0.000184
6 5	0.053878	0.000132	0.29239	0.004938	-0.004118	0.000184
6 7	0.035103	0.000132	0.51197	0.004938	-0.004575	0.000184
7 5	0.015435	0.000132	0.89656	0.004938	-0.000954	0.000184
7 7	0.009955	0.000132	0.92517	0.004938	-0.001311	0.000184
8 5	0.053516	0.000132	0.29519	0.004938	-0.003905	0.000184
8 7	0.035059	0.000132	0.51364	0.004938	-0.004489	0.000184
COVSTR*OBSERVED						
1 A	0.012364	0.000162	0.91983	0.006048	0.000179	0.000225
1 X2	0.012548	0.000162	0.916	0.006048	-0.000198	0.000225
1 X1X2	0.012599	0.000162	0.91642	0.006048	-6.1e-005	0.000225
2 A	0.044349	0.000162	0.40817	0.006048	-8.1e-005	0.000225
2 X2	0.044401	0.000162	0.40792	0.006048	-0.006344	0.000225
2 X1X2	0.044907	0.000162	0.40633	0.006048	-0.00635	0.000225
3 A	0.012458	0.000162	0.9225	0.006048	0.00028	0.000225
3 X2	0.012535	0.000162	0.91958	0.006048	-0.000142	0.000225
3 X1X2	0.012273	0.000162	0.90487	0.006048	-0.001267	0.000225
4 A	0.012766	0.000162	0.91267	0.006048	-0.000633	0.000225
4 X2	0.012778	0.000162	0.91	0.006048	-0.001002	0.000225
4 X1X2	0.012989	0.000162	0.91092	0.006048	-0.001121	0.000225
5 A	0.044294	0.000162	0.40517	0.006048	-0.000106	0.000225
5 X2	0.0444	0.000162	0.41167	0.006048	-0.005886	0.000225
5 X1X2	0.044498	0.000162	0.40267	0.006048	-0.006655	0.000225
6 A	0.04408	0.000162	0.40275	0.006048	-0.000162	0.000225
6 X2	0.044505	0.000162	0.401	0.006048	-0.006055	0.000225
6 X1X2	0.044886	0.000162	0.40279	0.006048	-0.006822	0.000225
7 A	0.012685	0.000162	0.92017	0.006048	-0.000433	0.000225
7 X2	0.012773	0.000162	0.91358	0.006048	-0.000944	0.000225
7 X1X2	0.012627	0.000162	0.89883	0.006048	-0.00202	0.000225
8 A	0.044013	0.000162	0.40875	0.006048	-0.000147	0.000225
8 X2	0.044131	0.000162	0.40167	0.006048	-0.006216	0.000225
8 X1X2	0.044719	0.000162	0.40283	0.006048	-0.006228	0.000225
SSIZE*KNRATIO						
1000 1/2	0.029077	8.1e- 005	0.8495	0.003024	-0.002343	0.000113
1000 2/2	0.028454	8.1e- 005	0.77241	0.003024	-0.003546	0.000113
1000 3/2	0.028514	8.1e- 005	0.71542	0.003024	-0.004247	0.000113
5000 1/2	0.028492	8.1e- 005	0.62601	0.003024	-0.000972	0.000113
5000 2/2	0.028338	8.1e- 005	0.52143	0.003024	-0.001539	0.000113
5000 3/2	0.02827	8.1e- 005	0.47201	0.003024	-0.001957	0.000113

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
SSIZE*METHOD						
1000 PROP	0.028677	6.6e-005	0.77921	0.002469	-0.003368	9.2e-005
1000 DA	0.028686	6.6e-005	0.77901	0.002469	-0.003389	9.2e-005
5000 PROP	0.028366	6.6e-005	0.53989	0.002469	-0.001483	9.2e-005
5000 DA	0.028367	6.6e-005	0.53974	0.002469	-0.001495	9.2e-005
SSIZE*NSTRATA						
1000 5	0.034567	6.6e-005	0.72579	0.002469	-0.003211	9.2e-005
1000 7	0.022797	6.6e-005	0.83243	0.002469	-0.003547	9.2e-005
5000 5	0.03423	6.6e-005	0.47008	0.002469	-0.001424	9.2e-005
5000 7	0.022503	6.6e-005	0.60955	0.002469	-0.001554	9.2e-005
SSIZE*OBSERVED						
1000 A	0.028446	8.1e-005	0.79269	0.003024	-0.000157	0.000113
1000 X2	0.028642	8.1e-005	0.77563	0.003024	-0.004626	0.000113
1000 X1X2	0.028957	8.1e-005	0.76901	0.003024	-0.005353	0.000113
5000 A	0.028306	8.1e-005	0.53231	0.003024	-0.000119	0.000113
5000 X2	0.028376	8.1e-005	0.54473	0.003024	-0.002071	0.000113
5000 X1X2	0.028418	8.1e-005	0.54241	0.003024	-0.002278	0.000113
KNRATIO*METHOD						
1/2 PROP	0.02878	8.1e-005	0.73789	0.003024	-0.001651	0.000113
1/2 DA	0.028789	8.1e-005	0.73762	0.003024	-0.001664	0.000113
2/2 PROP	0.028394	8.1e-005	0.64698	0.003024	-0.002533	0.000113
2/2 DA	0.028398	8.1e-005	0.64685	0.003024	-0.002552	0.000113
3/2 PROP	0.02839	8.1e-005	0.59378	0.003024	-0.003093	0.000113
3/2 DA	0.028393	8.1e-005	0.59365	0.003024	-0.003111	0.000113
KNRATIO*NSTRATA						
1/2 5	0.034602	8.1e-005	0.67598	0.003024	-0.001539	0.000113
1/2 7	0.022966	8.1e-005	0.79953	0.003024	-0.001776	0.000113
2/2 5	0.034422	8.1e-005	0.582	0.003024	-0.002332	0.000113
2/2 7	0.02237	8.1e-005	0.71183	0.003024	-0.002752	0.000113
3/2 5	0.034171	8.1e-005	0.53582	0.003024	-0.003082	0.000113
3/2 7	0.022613	8.1e-005	0.6516	0.003024	-0.003123	0.000113
KNRATIO*OBSERVED						
1/2 A	0.028582	9.9e-005	0.74162	0.003704	-0.000313	0.000138
1/2 X2	0.028731	9.9e-005	0.73353	0.003704	-0.00272	0.000138
1/2 X1X2	0.02904	9.9e-005	0.73811	0.003704	-0.001939	0.000138
2/2 A	0.028306	9.9e-005	0.65138	0.003704	-0.00011	0.000138
2/2 X2	0.028389	9.9e-005	0.64744	0.003704	-0.003443	0.000138
2/2 X1X2	0.028493	9.9e-005	0.64194	0.003704	-0.004074	0.000138
3/2 A	0.028241	9.9e-005	0.5945	0.003704	9e-006	0.000138
3/2 X2	0.028406	9.9e-005	0.59956	0.003704	-0.003883	0.000138
3/2 X1X2	0.028529	9.9e-005	0.58708	0.003704	-0.005433	0.000138
METHOD*NSTRATA						
PROP 5	0.034397	6.6e- 005	0.59799	0.002469	-0.002308	9.2e-005
PROP 7	0.022646	6.6e- 005	0.72111	0.002469	-0.002543	9.2e-005
DA 5	0.0344	6.6e- 005	0.59788	0.002469	-0.002327	9.2e-005
DA 7	0.022653	6.6e- 005	0.72087	0.002469	-0.002558	9.2e-005
METHOD*OBSERVED						
PROP A	0.028376	8.1e-005	0.6625	0.003024	-0.000138	0.000113
PROP X2	0.028509	8.1e-005	0.66018	0.003024	-0.003349	0.000113
PROP X1X2	0.028679	8.1e-005	0.65597	0.003024	-0.003791	0.000113
DA A	0.028376	8.1e-005	0.6625	0.003024	-0.000138	0.000113
DA X2	0.028509	8.1e-005	0.66018	0.003024	-0.003348	0.000113
DA X1X2	0.028695	8.1e-005	0.65545	0.003024	-0.00384	0.000113
NSTRATA*OBSERVED						
5 A	0.034205	8.1e-005	0.59829	0.003024	-6.4e-005	0.000113
5 X2	0.034435	8.1e-005	0.60035	0.003024	-0.003267	0.000113
5 X1X2	0.034556	8.1e-005	0.59516	0.003024	-0.003622	0.000113
7 A	0.022547	8.1e-005	0.72671	0.003024	-0.000212	0.000113
7 X2	0.022583	8.1e-005	0.72	0.003024	-0.00343	0.000113
7 X1X2	0.022819	8.1e-005	0.71626	0.003024	-0.004009	0.000113

Table V: Case 1: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	3.1753	3.1753	0.45361	87000	0
SSIZE	1	1e-005	1e-005	1e-005	2.17	0.142
KNRATIO	2	2e-005	2e- 005	1e-005	2.29	0.102
METHOD	1	0	0	0	0	0.981
NSTRATA	1	0.01969	0.01969	0.01969	3761.55	0
OBSERVED	3	2.6038	2.6038	0.86794	170000	0
COVSTR*SSIZE	7	3e- 005	3e-005	0	0.82	0.57
COVSTR*KNRATIO	14	4e-005	4e- 005	0	0.61	0.856
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.00509	0.00509	0.00073	139.04	0
COVSTR*OBSERVED	21	5.9685	5.9685	0.28422	54000	0
SSIZE*KNRATIO	2	1e- 005	1e-005	1e-005	1.05	0.352
SSIZE*METHOD	1	0	0	0	0	0.987
SSIZE*NSTRATA	1	0	0	0	0.01	0.934
SSIZE*OBSERVED	3	1e- 005	1e-005	0	0.44	0.721
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	1e-005	1e-005	0	0.8	0.45
KNRATIO*OBSERVED	6	0	0	0	0.06	0.999
METHOD*NSTRATA	1	0	0	0	0	0.994
METHOD*OBSERVED	3	0	0	0	0	1
NSTRATA*OBSERVED	3	0.00152	0.00152	0.00051	96.7	0
Error	672	0.00352	0.00352	1e-005		
Total	767	11.7776				

Table VI: Case 1: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	38.5594	38.5594	5.5085	522.15	0
SSIZE	1	8.816	8.816	8.816	835.66	0
KNRATIO	2	2.2417	2.2417	1.1209	106.25	0
METHOD	1	0	0	0	0	0.986
NSTRATA	1	1.7282	1.7282	1.7282	163.82	0
OBSERVED	3	41.627	41.627	13.8757	1315.27	0
COVSTR*SSIZE	7	2.9284	2.9284	0.4183	39.65	0
COVSTR*KNRATIO	14	0.5403	0.5403	0.0386	3.66	0
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.9245	0.9245	0.1321	12.52	0
COVSTR*OBSERVED	21	5.7252	5.7252	0.2726	25.84	0
SSIZE*KNRATIO	2	0.0121	0.0121	0.0061	0.57	0.564
SSIZE*METHOD	1	0	0	0	0	0.998
SSIZE*NSTRATA	1	0.0324	0.0324	0.0324	3.07	0.08
SSIZE*OBSERVED	3	0.3927	0.3927	0.1309	12.41	0
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	0.0036	0.0036	0.0018	0.17	0.844
KNRATIO*OBSERVED	6	0.0737	0.0737	0.0123	1.16	0.323
METHOD*NSTRATA	1	0	0	0	0	0.994
METHOD*OBSERVED	3	0	0	0	0	1
NSTRATA*OBSERVED	3	0.4595	0.4595	0.1532	14.52	0
Error	672	7.0894	7.0894	0.0105		
Total	767	111.1541				

Table VII: Case 1: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.0019104	0.0019104	0.0002729	166.81	0
SSIZE	1	0.0009028	0.0009028	0.0009028	551.8	0
KNRATIO	2	0.000298	0.000298	0.000149	91.06	0
METHOD	1	0	0	0	0.02	0.894
NSTRATA	1	1e-005	1e- 005	1e-005	6.13	0.014
OBSERVED	3	0.001875	0.001875	0.000625	382.01	0
COVSTR*SSIZE	7	0.0003108	0.0003108	4.44e-005	27.14	0
COVSTR*KNRATIO	14	0.0002183	0.0002183	1.56e-005	9.53	0
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	9.8e-006	9.8e-006	1.4e-006	0.85	0.543
COVSTR*OBSERVED	21	0.0036609	0.0036609	0.0001743	106.55	0
SSIZE*KNRATIO	2	3.77e -005	3.77e-005	1.89e-005	11.52	0
SSIZE*METHOD	1	0	0	0	0	0.971
SSIZE*NSTRATA	1	1.5e-006	1.5e-006	1.5e-006	0.93	0.335
SSIZE*OBSERVED	3	0.0002981	0.0002981	9.94e-005	60.74	0
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	2.5e-006	2.5e-006	1.2e-006	0.75	0.471
KNRATIO*OBSERVED	6	0.0002447	0.0002447	4.08e-005	24.92	0
METHOD*NSTRATA	1	0	0	0	0	0.987
METHOD*OBSERVED	3	1e- 007	1e-007	0	0.02	0.997
NSTRATA*OBSERVED	3	1.7e-006	1.7e-006	6e- 007	0.35	0.789
Error	672	0.0010994	0.0010994	1.6e-006		
Total	767	0.010882				

Table VIII: Case 1: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.0345	0.000233	0.7094	0.010483	-0.0001	0.000131
2	0.1387	0.000233	0.3056	0.010483	-0.0033	0.000131
3	0.0183	0.000233	0.7791	0.010483	-0.0021	0.000131
4	0.0204	0.000233	0.8127	0.010483	-0.0009	0.000131
5	0.1225	0.000233	0.3049	0.010483	-0.005	0.000131
6	0.1421	0.000233	0.3016	0.010483	-0.0032	0.000131
7	- 0.0505	0.000233	0.6831	0.010483	-0.0032	0.000131
8	0.0712	0.000233	0.304	0.010483	-0.0046	0.000131
SSIZE						
1000	0.0623	0.000117	0.6322	0.005241	-0.0039	6.5e-005
5000	0.062	0.000117	0.4179	0.005241	-0.0017	6.5e-005
KNRATIO						
1/2	0.0624	0.000143	0.5962	0.006419	-0.002	8e-005
2/2	0.062	0.000143	0.5135	0.006419	-0.003	8e-005
3/2	0.062	0.000143	0.4654	0.006419	-0.0035	8e-005
METHOD						
PROP	0.0621	0.000117	0.5251	0.005241	-0.0028	6.5e-005
DA	0.0621	0.000117	0.525	0.005241	-0.0028	6.5e-005
NSTRATA						
5	0.0672	0.000117	0.4776	0.005241	-0.0027	6.5e-005
7	0.0571	0.000117	0.5725	0.005241	-0.0029	6.5e-005
OBSERVED						
A	0.0284	0.000165	0.6625	0.007413	-0.0001	9.2e-005
X1	0.163	0.000165	0.1218	0.007413	-0.004	9.2e-005
X2	0.0285	0.000165	0.6602	0.007413	-0.0033	9.2e-005
X1X2	0.0287	0.000165	0.6557	0.007413	-0.0038	9.2e-005
COVSTR*SSIZE						
1 1000	0.0345	0.00033	0.7462	0.014825	0	0.000185
1 5000	0.0346	0.00033	0.6726	0.014825	-0.0003	0.000185
2 1000	0.1389	0.00033	0.4704	0.014825	-0.0045	0.000185
2 5000	0.1384	0.00033	0.1408	0.014825	-0.0021	0.000185
3 1000	0.018	0.00033	0.851	0.014825	-0.0027	0.000185
3 5000	0.0185	0.00033	0.7071	0.014825	-0.0015	0.000185
4 1000	0.0208	0.00033	0.8874	0.014825	-0.0015	0.000185
4 5000	0.0201	0.00033	0.738	0.014825	-0.0004	0.000185
5 1000	0.1227	0.00033	0.4707	0.014825	-0.0068	0.000185
5 5000	0.1222	0.00033	0.139	0.014825	-0.0033	0.000185
6 1000	0.1421	0.00033	0.4686	0.014825	-0.0045	0.000185
6 5000	0.1421	0.00033	0.1347	0.014825	-0.0019	0.000185
7 1000	- 0.0504	0.00033	0.6932	0.014825	-0.0048	0.000185
7 5000	- 0.0505	0.00033	0.6731	0.014825	-0.0016	0.000185
8 1000	0.0715	0.00033	0.4701	0.014825	-0.0063	0.000185
8 5000	0.0708	0.00033	0.1379	0.014825	-0.0028	0.000185

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*KNRATIO						
1 1/2	0.0345	0.000404	0.7443	0.018157	0.0001	0.000226
1 2/2	0.0347	0.000404	0.7	0.018157	-0.0006	0.000226
1 3/2	0.0343	0.000404	0.684	0.018157	0.0001	0.000226
2 1/2	0.1391	0.000404	0.4074	0.018157	-0.0027	0.000226
2 2/2	0.1384	0.000404	0.2892	0.018157	-0.003	0.000226
2 3/2	0.1384	0.000404	0.2202	0.018157	-0.0041	0.000226
3 1/2	0.0188	0.000404	0.8264	0.018157	-0.001	0.000226
3 2/2	0.0179	0.000404	0.7749	0.018157	-0.0023	0.000226
3 3/2	0.018	0.000404	0.7358	0.018157	-0.003	0.000226
4 1/2	0.0208	0.000404	0.8637	0.018157	-0.0014	0.000226
4 2/2	0.0198	0.000404	0.8126	0.018157	-0.0008	0.000226
4 3/2	0.0207	0.000404	0.7618	0.018157	-0.0006	0.000226
5 1/2	0.1226	0.000404	0.4127	0.018157	-0.0033	0.000226
5 2/2	0.1228	0.000404	0.2771	0.018157	-0.0055	0.000226
5 3/2	0.1221	0.000404	0.2248	0.018157	-0.0064	0.000226
6 1/2	0.142	0.000404	0.409	0.018157	-0.002	0.000226
6 2/2	0.142	0.000404	0.2797	0.018157	-0.0035	0.000226
6 3/2	0.1423	0.000404	0.2162	0.018157	-0.0041	0.000226
7 1/2	- 0.0503	0.000404	0.6985	0.018157	-0.0021	0.000226
7 2/2	- 0.0504	0.000404	0.6844	0.018157	-0.0031	0.000226
7 3/2	- 0.0507	0.000404	0.6666	0.018157	-0.0045	0.000226
8 1/2	0.0715	0.000404	0.4077	0.018157	-0.0035	0.000226
8 2/2	0.0709	0.000404	0.2907	0.018157	-0.005	0.000226
8 3/2	0.0711	0.000404	0.2137	0.018157	-0.0053	0.000226
COVSTR*METHOD						
1 PROP	0.0345	0.00033	0.7094	0.014825	-0.0001	0.000185
1 DA	0.0345	0.00033	0.7094	0.014825	-0.0001	0.000185
2 PROP	0.1387	0.00033	0.3055	0.014825	-0.0033	0.000185
2 DA	0.1387	0.00033	0.3057	0.014825	-0.0033	0.000185
3 PROP	0.0183	0.00033	0.7793	0.014825	-0.0021	0.000185
3 DA	0.0183	0.00033	0.7789	0.014825	-0.0021	0.000185
4 PROP	0.0204	0.00033	0.8127	0.014825	-0.0009	0.000185
4 DA	0.0204	0.00033	0.8127	0.014825	-0.0009	0.000185
5 PROP	0.1225	0.00033	0.3048	0.014825	-0.005	0.000185
5 DA	0.1225	0.00033	0.3049	0.014825	-0.005	0.000185
6 PROP	0.1421	0.00033	0.3016	0.014825	-0.0032	0.000185
6 DA	0.1421	0.00033	0.3016	0.014825	-0.0032	0.000185
7 PROP	- 0.0505	0.00033	0.6834	0.014825	-0.0032	0.000185
7 DA	- 0.0505	0.00033	0.6829	0.014825	-0.0032	0.000185
8 PROP	0.0712	0.00033	0.3042	0.014825	-0.0046	0.000185
8 DA	0.0712	0.00033	0.3038	0.014825	-0.0046	0.000185
COVSTR*NSTRATA						
1 5	0.0366	0.00033	0.6983	0.014825	-0.0002	0.000185
1 7	0.0325	0.00033	0.7205	0.014825	-0.0001	0.000185
2 5	0.1456	0.00033	0.225	0.014825	-0.0032	0.000185
2 7	0.1317	0.00033	0.3862	0.014825	-0.0033	0.000185
3 5	0.0204	0.00033	0.7643	0.014825	-0.002	0.000185
3 7	0.0162	0.00033	0.7938	0.014825	-0.0023	0.000185
4 5	0.0226	0.00033	0.7982	0.014825	-0.001	0.000185
4 7	0.0183	0.00033	0.8272	0.014825	-0.0009	0.000185
5 5	0.1299	0.00033	0.2218	0.014825	-0.0049	0.000185
5 7	0.115	0.00033	0.3879	0.014825	-0.0052	0.000185
6 5	0.1492	0.00033	0.2193	0.014825	-0.003	0.000185
6 7	0.135	0.00033	0.384	0.014825	-0.0034	0.000185
7 5	- 0.0463	0.00033	0.6724	0.014825	-0.0031	0.000185
7 7	- 0.0546	0.00033	0.6939	0.014825	-0.0033	0.000185
8 5	0.0797	0.00033	0.2216	0.014825	-0.0043	0.000185
8 7	0.0626	0.00033	0.3864	0.014825	-0.0049	0.000185

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*OBSERVED						
1 A	0.0124	0.000467	0.9198	0.020966	0.0002	0.000261
1 X1	0.1006	0.000467	0.0854	0.020966	-0.0004	0.000261
1 X2	0.0125	0.000467	0.916	0.020966	-0.0002	0.000261
1 X1X2	0.0126	0.000467	0.9164	0.020966	-0.0001	0.000261
2 A	0.0443	0.000467	0.4082	0.020966	-0.0001	0.000261
2 X1	0.4209	0.000467	0	0.020966	-0.0003	0.000261
2 X2	0.0444	0.000467	0.4079	0.020966	-0.0063	0.000261
2 X1X2	0.0449	0.000467	0.4063	0.020966	-0.0064	0.000261
3 A	0.0125	0.000467	0.9225	0.020966	0.0003	0.000261
3 X1	0.0358	0.000467	0.3693	0.020966	-0.0073	0.000261
3 X2	0.0125	0.000467	0.9196	0.020966	-0.0001	0.000261
3 X1X2	0.0123	0.000467	0.9049	0.020966	-0.0013	0.000261
4 A	0.0128	0.000467	0.9127	0.020966	-0.0006	0.000261
4 X1	0.0432	0.000467	0.5173	0.020966	-0.001	0.000261
4 X2	0.0128	0.000467	0.91	0.020966	-0.001	0.000261
4 X1X2	0.013	0.000467	0.9109	0.020966	-0.0011	0.000261
5 A	0.0443	0.000467	0.4052	0.020966	-0.0001	0.000261
5 X1	0.3567	0.000467	0	0.020966	-0.0075	0.000261
5 X2	0.0444	0.000467	0.4117	0.020966	-0.0059	0.000261
5 X1X2	0.0445	0.000467	0.4027	0.020966	-0.0067	0.000261
6 A	0.0441	0.000467	0.4027	0.020966	-0.0002	0.000261
6 X1	0.4348	0.000467	0	0.020966	0.0001	0.000261
6 X2	0.0445	0.000467	0.401	0.020966	-0.0061	0.000261
6 X1X2	0.0449	0.000467	0.4028	0.020966	-0.0068	0.000261
7 A	0.0127	0.000467	0.9202	0.020966	-0.0004	0.000261
7 X1	- 0.24	0.000467	0	0.020966	-0.0094	0.000261
7 X2	0.0128	0.000467	0.9136	0.020966	-0.0009	0.000261
7 X1X2	0.0126	0.000467	0.8988	0.020966	-0.002	0.000261
8 A	0.044	0.000467	0.4087	0.020966	-0.0001	0.000261
8 X1	0.1518	0.000467	0.0027	0.020966	-0.0058	0.000261
8 X2	0.0441	0.000467	0.4017	0.020966	-0.0062	0.000261
8 X1X2	0.0447	0.000467	0.4028	0.020966	-0.0062	0.000261
SSIZE*KNRATIO						
1000 1/2	0.0627	0.000202	0.6983	0.009079	-0.0028	0.000113
1000 2/2	0.062	0.000202	0.6253	0.009079	-0.0041	0.000113
1000 3/2	0.0621	0.000202	0.573	0.009079	-0.0048	0.000113
5000 1/2	0.0621	0.000202	0.4942	0.009079	-0.0012	0.000113
5000 2/2	0.062	0.000202	0.4018	0.009079	-0.0018	0.000113
5000 3/2	0.0619	0.000202	0.3577	0.009079	-0.0022	0.000113
SSIZE*METHOD						
1000 PROP	0.0623	0.000165	0.6323	0.007413	-0.0039	9.2e-005
1000 DA	0.0623	0.000165	0.6321	0.007413	-0.0039	9.2e-005
5000 PROP	0.062	0.000165	0.418	0.007413	-0.0017	9.2e-005
5000 DA	0.062	0.000165	0.4179	0.007413	-0.0017	9.2e-005
SSIZE*NSTRATA						
1000 5	0.0673	0.000165	0.5913	0.007413	-0.0037	9.2e-005
1000 7	0.0572	0.000165	0.6731	0.007413	-0.0041	9.2e-005
5000 5	0.0671	0.000165	0.364	0.007413	-0.0017	9.2e-005
5000 7	0.057	0.000165	0.4718	0.007413	-0.0018	9.2e-005
SSIZE*OBSERVED						
1000 A	0.0284	0.000233	0.7927	0.010483	-0.0002	0.000131
1000 X1	0.163	0.000233	0.1915	0.010483	-0.0055	0.000131
1000 X2	0.0286	0.000233	0.7756	0.010483	-0.0046	0.000131
1000 X1X2	0.029	0.000233	0.769	0.010483	-0.0054	0.000131
5000 A	0.0283	0.000233	0.5323	0.010483	-0.0001	0.000131
5000 X1	0.163	0.000233	0.0522	0.010483	-0.0025	0.000131
5000 X2	0.0284	0.000233	0.5447	0.010483	-0.0021	0.000131
5000 X1X2	0.0284	0.000233	0.5424	0.010483	-0.0023	0.000131
KNRATIO*METHOD						
1/2 PROP	0.0624	0.000202	0.5963	0.009079	-0.002	0.000113
1/2 DA	0.0624	0.000202	0.5961	0.009079	-0.002	0.000113
2/2 PROP	0.062	0.000202	0.5136	0.009079	-0.003	0.000113
2/2 DA	0.062	0.000202	0.5135	0.009079	-0.003	0.000113
3/2 PROP	0.062	0.000202	0.4654	0.009079	-0.0035	0.000113
3/2 DA	0.062	0.000202	0.4653	0.009079	-0.0035	0.000113

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
KNRATIO*NSTRATA						
1/2 5	0.0674	0.000202	0.5491	0.009079	-0.0019	0.000113
1/2 7	0.0574	0.000202	0.6434	0.009079	-0.0021	0.000113
2/2 5	0.0672	0.000202	0.4633	0.009079	-0.0028	0.000113
2/2 7	0.0568	0.000202	0.5638	0.009079	-0.0032	0.000113
3/2 5	0.067	0.000202	0.4204	0.009079	-0.0034	0.000113
3/2 7	0.057	0.000202	0.5104	0.009079	-0.0036	0.000113
KNRATIO*OBSERVED						
1/2 A	0.0286	0.000286	0.7416	0.012839	-0.0003	0.00016
1/2 X1	0.1632	0.000286	0.1716	0.012839	-0.003	0.00016
1/2 X2	0.0287	0.000286	0.7335	0.012839	-0.0027	0.00016
1/2 X1X2	0.029	0.000286	0.7381	0.012839	-0.0019	0.00016
2/2 A	0.0283	0.000286	0.6514	0.012839	-0.0001	0.00016
2/2 X1	0.1628	0.000286	0.1134	0.012839	-0.0043	0.00016
2/2 X2	0.0284	0.000286	0.6474	0.012839	-0.0034	0.00016
2/2 X1X2	0.0285	0.000286	0.6419	0.012839	-0.0041	0.00016
3/2 A	0.0282	0.000286	0.5945	0.012839	0	0.00016
3/2 X1	0.1629	0.000286	0.0804	0.012839	-0.0047	0.00016
3/2 X2	0.0284	0.000286	0.5996	0.012839	-0.0039	0.00016
3/2 X1X2	0.0285	0.000286	0.5871	0.012839	-0.0054	0.00016
METHOD*NSTRATA						
PROP 5	0.0672	0.000165	0.4777	0.007413	-0.0027	9.2e-005
PROP 7	0.0571	0.000165	0.5726	0.007413	-0.0029	9.2e-005
DA 5	0.0672	0.000165	0.4776	0.007413	-0.0027	9.2e-005
DA 7	0.0571	0.000165	0.5724	0.007413	-0.0029	9.2e-005
METHOD*OBSERVED						
PROP A	0.0284	0.000233	0.6625	0.010483	-0.0001	0.000131
PROP X1	0.163	0.000233	0.1218	0.010483	-0.004	0.000131
PROP X2	0.0285	0.000233	0.6602	0.010483	-0.0033	0.000131
PROP X1X2	0.0287	0.000233	0.656	0.010483	-0.0038	0.000131
DA A	0.0284	0.000233	0.6625	0.010483	-0.0001	0.000131
DA X1	0.163	0.000233	0.1218	0.010483	-0.004	0.000131
DA X2	0.0285	0.000233	0.6602	0.010483	-0.0033	0.000131
DA X1X2	0.0287	0.000233	0.6554	0.010483	-0.0038	0.000131
NSTRATA*OBSERVED						
5 A	0.0342	0.000233	0.5983	0.010483	-0.0001	0.000131
5 X1	0.1656	0.000233	0.1167	0.010483	-0.0039	0.000131
5 X2	0.0344	0.000233	0.6004	0.010483	-0.0033	0.000131
5 X1X2	0.0346	0.000233	0.5952	0.010483	-0.0036	0.000131
7 A	0.0225	0.000233	0.7267	0.010483	-0.0002	0.000131
7 X1	0.1604	0.000233	0.127	0.010483	-0.0041	0.000131
7 X2	0.0226	0.000233	0.72	0.010483	-0.0034	0.000131
7 X1X2	0.0228	0.000233	0.7163	0.010483	-0.004	0.000131

Table IX: Case 2: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.41444	0.41444	0.059205	278.6	0
SSIZE	1	3.4e-005	3.4e-005	3.4e-005	0.16	0.688
KNRATIO	2	1e-006	1e- 006	1e-006	0	0.997
METHOD	1	6.3e-005	6.3e-005	6.3e- 005	0.3	0.585
NSTRATA	1	0.056355	0.056355	0.056355	265.19	0
OBSERVED	2	0.000117	0.000117	5.8e-005	0.28	0.759
SITAVIO1	2	5.8796	5.8796	2.9398	14000	0
COVSTR*SSIZE	7	3.1e- 005	3.1e-005	4e-006	0.02	1
COVSTR*KNRATIO	14	0.000105	0.000105	7e- 006	0.04	1
COVSTR*METHOD	7	1.8e-005	1.8e-005	3e-006	0.01	1
COVSTR*NSTRATA	7	0.019874	0.019874	0.002839	13.36	0
COVSTR*OBSERVED	14	0.000251	0.000251	1.8e-005	0.08	1
COVSTR*SITAVIO1	14	1.6995	1.6995	0.1214	571.25	0
SSIZE*KNRATIO	2	5e- 006	5e-006	3e-006	0.01	0.987
SSIZE*METHOD	1	0	0	0	0	0.971
SSIZE*NSTRATA	1	2e-006	2e-006	2e-006	0.01	0.919
SSIZE*OBSERVED	2	1.4e- 005	1.4e-005	7e-006	0.03	0.967
SSIZE*SITAVIO1	2	4.1e-005	4.1e-005	2e- 005	0.1	0.909
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	1.4e-005	1.4e-005	7e-006	0.03	0.969
KNRATIO*OBSERVED	4	7e- 006	7e-006	2e-006	0.01	1
KNRATIO*SITAVIO1	4	4.1e-005	4.1e-005	1e- 005	0.05	0.996
METHOD*NSTRATA	1	2e-006	2e-006	2e-006	0.01	0.93
METHOD*OBSERVED	2	0.000123	0.000123	6.1e-005	0.29	0.749
METHOD*SITAVIO1	2	3.9e-005	3.9e-005	1.9e-005	0.09	0.913
NSTRATA*OBSERVED	2	0	0	0	0	1
NSTRATA*SITAVIO1	2	3.7e-005	3.7e-005	1.8e- 005	0.09	0.917
OBSERVED*SITAVIO1	4	0.18587	0.18587	0.046468	218.66	0
Error	1615	0.3432	0.3432	0.000213		
Total	1727	8.5999				

Table X: Case 2: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	2.4056	2.4056	0.3437	17.32	0
SSIZE	1	25.223	25.223	25.223	1271.44	0
KNRATIO	2	8.6387	8.6387	4.3193	217.73	0
METHOD	1	0.0012	0.0012	0.0012	0.06	0.803
NSTRATA	1	2.498	2.498	2.498	125.92	0
OBSERVED	2	1.0369	1.0369	0.5185	26.13	0
SITAVIO1	2	63.1431	63.1431	31.5716	1591.46	0
COVSTR*SSIZE	7	0.6371	0.6371	0.091	4.59	0
COVSTR*KNRATIO	14	0.0842	0.0842	0.006	0.3	0.994
COVSTR*METHOD	7	0.0025	0.0025	0.0004	0.02	1
COVSTR*NSTRATA	7	1.5013	1.5013	0.2145	10.81	0
COVSTR*OBSERVED	14	7.9161	7.9161	0.5654	28.5	0
COVSTR*SITAVIO1	14	81.8097	81.8097	5.8436	294.56	0
SSIZE*KNRATIO	2	1.3209	1.3209	0.6604	33.29	0
SSIZE*METHOD	1	0.0024	0.0024	0.0024	0.12	0.729
SSIZE*NSTRATA	1	0.0002	0.0002	0.0002	0.01	0.914
SSIZE*OBSERVED	2	0.2219	0.2219	0.1109	5.59	0.004
SSIZE*SITAVIO1	2	0.3422	0.3422	0.1711	8.63	0
KNRATIO*METHOD	2	0.0003	0.0003	0.0001	0.01	0.993
KNRATIO*NSTRATA	2	0.0031	0.0031	0.0016	0.08	0.925
KNRATIO*OBSERVED	4	0.0436	0.0436	0.0109	0.55	0.7
KNRATIO*SITAVIO1	4	0.1668	0.1668	0.0417	2.1	0.078
METHOD*NSTRATA	1	0.001	0.001	0.001	0.05	0.819
METHOD*OBSERVED	2	0.0028	0.0028	0.0014	0.07	0.931
METHOD*SITAVIO1	2	0.0341	0.0341	0.0171	0.86	0.423
NSTRATA*OBSERVED	2	0.0003	0.0003	0.0002	0.01	0.991
NSTRATA*SITAVIO1	2	0.6147	0.6147	0.3073	15.49	0
OBSERVED*SITAVIO1	4	3.3287	3.3287	0.8322	41.95	0
Error	1615	32.0385	32.0385	0.0198		
Total	1727	233.019				

Table XI: Case 2: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.0053837	0.0053837	0.0007691	460.71	0
SSIZE	1	0.0020105	0.0020105	0.0020105	1204.32	0
KNRATIO	2	0.0004337	0.0004337	0.0002168	129.88	0
METHOD	1	9e-007	9e- 007	9e-007	0.54	0.461
NSTRATA	1	5.25e-005	5.25e-005	5.25e- 005	31.46	0
OBSERVED	2	0.0046979	0.0046979	0.0023489	1407.06	0
SITAVIO1	2	3.67e-005	3.67e-005	1.84e-005	11	0
COVSTR*SSIZE	7	0.0006798	0.0006798	9.71e-005	58.17	0
COVSTR*KNRATIO	14	0.0004716	0.0004716	3.37e-005	20.18	0
COVSTR*METHOD	7	3e- 007	3e-007	0	0.02	1
COVSTR*NSTRATA	7	1.48e-005	1.48e- 005	2.1e-006	1.27	0.262
COVSTR*OBSERVED	14	0.0028537	0.0028537	0.0002038	122.1	0
COVSTR*SITAVIO1	14	0.0002309	0.0002309	1.65e-005	9.88	0
SSIZE*KNRATIO	2	1.63e-005	1.63e-005	8.1e-006	4.88	0.008
SSIZE*METHOD	1	4e- 007	4e-007	4e-007	0.26	0.613
SSIZE*NSTRATA	1	2.32e-005	2.32e- 005	2.32e-005	13.87	0
SSIZE*OBSERVED	2	0.0007825	0.0007825	0.0003913	234.38	0
SSIZE*SITAVIO1	2	5.63e-005	5.63e-005	2.82e-005	16.87	0
KNRATIO*METHOD	2	2e- 007	2e-007	1e-007	0.05	0.95
KNRATIO*NSTRATA	2	1.33e-005	1.33e- 005	6.7e-006	3.99	0.019
KNRATIO*OBSERVED	4	0.0006602	0.0006602	0.000165	98.86	0
KNRATIO*SITAVIO1	4	8.85e-005	8.85e-005	2.21e-005	13.25	0
METHOD*NSTRATA	1	2e- 007	2e-007	2e-007	0.14	0.708
METHOD*OBSERVED	2	5e-007	5e-007	2e- 007	0.14	0.871
METHOD*SITAVIO1	2	4.2e-006	4.2e-006	2.1e- 006	1.25	0.287
NSTRATA*OBSERVED	2	6.9e-006	6.9e-006	3.4e-006	2.06	0.128
NSTRATA*SITAVIO1	2	1.25e-005	1.25e-005	6.3e- 006	3.75	0.024
OBSERVED*SITAVIO1	4	0.0001876	0.0001876	4.69e-005	28.09	0
Error	1615	0.0026961	0.0026961	1.7e-006		
Total	1727	0.021416				

Table XII: Case 2: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.0141	0.000992	0.4099	0.009583	-0.0004	8.8e-005
2	0.0451	0.000992	0.47	0.009583	-0.0042	8.8e-005
3	0.0137	0.000992	0.5241	0.009583	-0.0007	8.8e-005
4	0.0141	0.000992	0.3957	0.009583	-0.0008	8.8e-005
5	0.0445	0.000992	0.4635	0.009583	-0.0042	8.8e-005
6	0.0453	0.000992	0.4336	0.009583	-0.0044	8.8e-005
7	0.014	0.000992	0.4429	0.009583	-0.0011	8.8e-005
8	0.0448	0.000992	0.4639	0.009583	-0.0042	8.8e-005
SSIZE						
1000	0.0296	0.000496	0.5713	0.004792	-0.0036	4.4e-005
5000	0.0293	0.000496	0.3296	0.004792	-0.0014	4.4e-005
KNRATIO						
1/2	0.0294	0.000607	0.5443	0.005869	-0.0019	5.4e-005
2/2	0.0294	0.000607	0.4333	0.005869	-0.0025	5.4e-005
3/2	0.0295	0.000607	0.3737	0.005869	-0.0031	5.4e-005
METHOD						
PROP	0.0292	0.000496	0.4496	0.004792	-0.0025	4.4e-005
DA	0.0296	0.000496	0.4513	0.004792	-0.0025	4.4e-005
NSTRATA						
5	0.0351	0.000496	0.4124	0.004792	-0.0023	4.4e-005
7	0.0237	0.000496	0.4885	0.004792	-0.0027	4.4e-005
OBSERVED						
A	0.0291	0.000607	0.4376	0.005869	-0.0002	5.4e-005
X2	0.0297	0.000607	0.429	0.005869	-0.0034	5.4e-005
X1X2	0.0295	0.000607	0.4847	0.005869	-0.0039	5.4e-005
SITAVIO1						
- RHO14	0.1013	0.000607	0.1975	0.005869	-0.0027	5.4e-005
0	0.0285	0.000607	0.6595	0.005869	-0.0024	5.4e-005
RHO14	- 0.0415	0.000607	0.4945	0.005869	-0.0024	5.4e-005
COVSTR*SSIZE						
1 1000	0.0141	0.001403	0.5156	0.013553	-0.0005	0.000124
1 5000	0.014	0.001403	0.3041	0.013553	-0.0002	0.000124
2 1000	0.0455	0.001403	0.6046	0.013553	-0.0059	0.000124
2 5000	0.0448	0.001403	0.3354	0.013553	-0.0025	0.000124
3 1000	0.0136	0.001403	0.6177	0.013553	-0.0011	0.000124
3 5000	0.0138	0.001403	0.4304	0.013553	-0.0003	0.000124
4 1000	0.0141	0.001403	0.4905	0.013553	-0.0014	0.000124
4 5000	0.0141	0.001403	0.301	0.013553	-0.0002	0.000124
5 1000	0.0446	0.001403	0.6016	0.013553	-0.0057	0.000124
5 5000	0.0443	0.001403	0.3255	0.013553	-0.0027	0.000124
6 1000	0.0456	0.001403	0.571	0.013553	-0.0063	0.000124
6 5000	0.0451	0.001403	0.2962	0.013553	-0.0026	0.000124
7 1000	0.0141	0.001403	0.5612	0.013553	-0.0018	0.000124
7 5000	0.0138	0.001403	0.3247	0.013553	-0.0003	0.000124
8 1000	0.0449	0.001403	0.6079	0.013553	-0.0058	0.000124
8 5000	0.0446	0.001403	0.3199	0.013553	-0.0025	0.000124

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*KNRATIO						
1 1/2	0.0137	0.001718	0.4931	0.016599	-0.0004	0.000152
1 2/2	0.0144	0.001718	0.3928	0.016599	-0.0004	0.000152
1 3/2	0.014	0.001718	0.3437	0.016599	-0.0003	0.000152
2 1/2	0.0453	0.001718	0.5678	0.016599	-0.0037	0.000152
2 2/2	0.0452	0.001718	0.4544	0.016599	-0.004	0.000152
2 3/2	0.0449	0.001718	0.3878	0.016599	-0.005	0.000152
3 1/2	0.0136	0.001718	0.6085	0.016599	-0.0004	0.000152
3 2/2	0.0138	0.001718	0.5106	0.016599	-0.0006	0.000152
3 3/2	0.0136	0.001718	0.4531	0.016599	-0.0012	0.000152
4 1/2	0.0143	0.001718	0.4777	0.016599	-0.0015	0.000152
4 2/2	0.0134	0.001718	0.3833	0.016599	-0.0006	0.000152
4 3/2	0.0145	0.001718	0.3262	0.016599	-0.0003	0.000152
5 1/2	0.0445	0.001718	0.5678	0.016599	-0.0026	0.000152
5 2/2	0.0445	0.001718	0.4409	0.016599	-0.0047	0.000152
5 3/2	0.0444	0.001718	0.382	0.016599	-0.0053	0.000152
6 1/2	0.0452	0.001718	0.5376	0.016599	-0.0031	0.000152
6 2/2	0.0453	0.001718	0.4137	0.016599	-0.0047	0.000152
6 3/2	0.0455	0.001718	0.3494	0.016599	-0.0055	0.000152
7 1/2	0.0135	0.001718	0.5349	0.016599	0	0.000152
7 2/2	0.0143	0.001718	0.4235	0.016599	-0.0011	0.000152
7 3/2	0.0141	0.001718	0.3704	0.016599	-0.0021	0.000152
8 1/2	0.045	0.001718	0.5673	0.016599	-0.0033	0.000152
8 2/2	0.0446	0.001718	0.4473	0.016599	-0.0042	0.000152
8 3/2	0.0447	0.001718	0.3771	0.016599	-0.005	0.000152
COVSTR*METHOD						
1 PROP	0.0138	0.001403	0.4101	0.013553	-0.0004	0.000124
1 DA	0.0144	0.001403	0.4096	0.013553	-0.0004	0.000124
2 PROP	0.0451	0.001403	0.468	0.013553	-0.0042	0.000124
2 DA	0.0452	0.001403	0.4721	0.013553	-0.0043	0.000124
3 PROP	0.0134	0.001403	0.5247	0.013553	-0.0007	0.000124
3 DA	0.014	0.001403	0.5234	0.013553	-0.0007	0.000124
4 PROP	0.0138	0.001403	0.3961	0.013553	-0.0008	0.000124
4 DA	0.0144	0.001403	0.3954	0.013553	-0.0008	0.000124
5 PROP	0.0444	0.001403	0.4615	0.013553	-0.0042	0.000124
5 DA	0.0445	0.001403	0.4656	0.013553	-0.0042	0.000124
6 PROP	0.0453	0.001403	0.4315	0.013553	-0.0044	0.000124
6 DA	0.0454	0.001403	0.4357	0.013553	-0.0045	0.000124
7 PROP	0.0137	0.001403	0.4431	0.013553	-0.001	0.000124
7 DA	0.0143	0.001403	0.4428	0.013553	-0.0011	0.000124
8 PROP	0.0447	0.001403	0.4619	0.013553	-0.0042	0.000124
8 DA	0.0449	0.001403	0.4659	0.013553	-0.0042	0.000124
COVSTR*NSTRATA						
1 5	0.0166	0.001403	0.4019	0.013553	-0.0003	0.000124
1 7	0.0116	0.001403	0.4178	0.013553	-0.0005	0.000124
2 5	0.0542	0.001403	0.3979	0.013553	-0.0042	0.000124
2 7	0.036	0.001403	0.5421	0.013553	-0.0043	0.000124
3 5	0.016	0.001403	0.5127	0.013553	-0.0005	0.000124
3 7	0.0114	0.001403	0.5355	0.013553	-0.001	0.000124
4 5	0.0163	0.001403	0.3868	0.013553	-0.0007	0.000124
4 7	0.0119	0.001403	0.4047	0.013553	-0.0009	0.000124
5 5	0.0537	0.001403	0.3915	0.013553	-0.004	0.000124
5 7	0.0352	0.001403	0.5356	0.013553	-0.0043	0.000124
6 5	0.0544	0.001403	0.3866	0.013553	-0.0042	0.000124
6 7	0.0362	0.001403	0.4806	0.013553	-0.0046	0.000124
7 5	0.0162	0.001403	0.4326	0.013553	-0.0008	0.000124
7 7	0.0117	0.001403	0.4533	0.013553	-0.0013	0.000124
8 5	0.0537	0.001403	0.3895	0.013553	-0.0038	0.000124
8 7	0.0358	0.001403	0.5384	0.013553	-0.0045	0.000124

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*OBSERVED						
1 A	0.0135	0.001718	0.3933	0.016599	-0.0001	0.000152
1 X2	0.0144	0.001718	0.3931	0.016599	-0.0005	0.000152
1 X1X2	0.0142	0.001718	0.4433	0.016599	-0.0006	0.000152
2 A	0.0448	0.001718	0.4805	0.016599	-0.0002	0.000152
2 X2	0.0451	0.001718	0.4642	0.016599	-0.0063	0.000152
2 X1X2	0.0456	0.001718	0.4653	0.016599	-0.0062	0.000152
3 A	0.0137	0.001718	0.3971	0.016599	0	0.000152
3 X2	0.0146	0.001718	0.3965	0.016599	-0.0005	0.000152
3 X1X2	0.0128	0.001718	0.7787	0.016599	-0.0017	0.000152
4 A	0.0135	0.001718	0.3936	0.016599	-0.0005	0.000152
4 X2	0.0144	0.001718	0.3927	0.016599	-0.0009	0.000152
4 X1X2	0.0144	0.001718	0.4009	0.016599	-0.001	0.000152
5 A	0.0445	0.001718	0.4808	0.016599	-0.0001	0.000152
5 X2	0.0448	0.001718	0.4665	0.016599	-0.0059	0.000152
5 X1X2	0.0441	0.001718	0.4433	0.016599	-0.0065	0.000152
6 A	0.0447	0.001718	0.4798	0.016599	-0.0002	0.000152
6 X2	0.0452	0.001718	0.465	0.016599	-0.006	0.000152
6 X1X2	0.0461	0.001718	0.356	0.016599	-0.0071	0.000152
7 A	0.0137	0.001718	0.3937	0.016599	-0.0003	0.000152
7 X2	0.0146	0.001718	0.3928	0.016599	-0.0008	0.000152
7 X1X2	0.0135	0.001718	0.5423	0.016599	-0.0021	0.000152
8 A	0.0445	0.001718	0.4819	0.016599	-0.0002	0.000152
8 X2	0.0448	0.001718	0.4616	0.016599	-0.0062	0.000152
8 X1X2	0.045	0.001718	0.4482	0.016599	-0.0061	0.000152
COVSTR*SITAVIO1						
1 - RHO14	0.1299	0.001718	0.1438	0.016599	-0.0007	0.000152
1 0	0.0125	0.001718	0.9174	0.016599	0	0.000152
1 RHO14	- 0.1002	0.001718	0.1684	0.016599	-0.0005	0.000152
2 - RHO14	0.0832	0.001718	0.1725	0.016599	-0.004	0.000152
2 0	0.0446	0.001718	0.4075	0.016599	-0.0043	0.000152
2 RHO14	0.0077	0.001718	0.8301	0.016599	-0.0045	0.000152
3 - RHO14	0.1071	0.001718	0.2817	0.016599	-0.0014	0.000152
3 0	0.0124	0.001718	0.9157	0.016599	-0.0004	0.000152
3 RHO14	- 0.0784	0.001718	0.3749	0.016599	-0.0004	0.000152
4 - RHO14	0.1343	0.001718	0.1278	0.016599	-0.0009	0.000152
4 0	0.0128	0.001718	0.9112	0.016599	-0.0009	0.000152
4 RHO14	- 0.1049	0.001718	0.1482	0.016599	-0.0006	0.000152
5 - RHO14	0.0603	0.001718	0.3511	0.016599	-0.0049	0.000152
5 0	0.0444	0.001718	0.4065	0.016599	-0.0042	0.000152
5 RHO14	0.0286	0.001718	0.6331	0.016599	-0.0034	0.000152
6 - RHO14	0.0957	0.001718	0.1357	0.016599	-0.004	0.000152
6 0	0.0445	0.001718	0.4022	0.016599	-0.0043	0.000152
6 RHO14	- 0.0043	0.001718	0.7628	0.016599	-0.0049	0.000152
7 - RHO14	0.1198	0.001718	0.1847	0.016599	-0.0017	0.000152
7 0	0.0127	0.001718	0.9109	0.016599	-0.0011	0.000152
7 RHO14	- 0.0906	0.001718	0.2333	0.016599	-0.0004	0.000152
8 - RHO14	0.0803	0.001718	0.1825	0.016599	-0.0039	0.000152
8 0	0.0443	0.001718	0.4044	0.016599	-0.0042	0.000152
8 RHO14	0.0097	0.001718	0.8049	0.016599	-0.0044	0.000152
SSIZE*KNRATIO						
1000 1/2	0.0296	0.000859	0.701	0.0083	-0.0028	7.6e-005
1000 2/2	0.0295	0.000859	0.5497	0.0083	-0.0036	7.6e-005
1000 3/2	0.0296	0.000859	0.4631	0.0083	-0.0043	7.6e-005
5000 1/2	0.0292	0.000859	0.3877	0.0083	-0.0009	7.6e-005
5000 2/2	0.0294	0.000859	0.317	0.0083	-0.0015	7.6e-005
5000 3/2	0.0294	0.000859	0.2843	0.0083	-0.0019	7.6e-005
SSIZE*METHOD						
1000 PROP	0.0294	0.000701	0.5693	0.006777	-0.0035	6.2e-005
1000 DA	0.0298	0.000701	0.5733	0.006777	-0.0036	6.2e-005
5000 PROP	0.0291	0.000701	0.33	0.006777	-0.0014	6.2e-005
5000 DA	0.0295	0.000701	0.3293	0.006777	-0.0014	6.2e-005
SSIZE*NSTRATA						
1000 5	0.0353	0.000701	0.5336	0.006777	-0.0033	6.2e-005
1000 7	0.0239	0.000701	0.6089	0.006777	-0.0039	6.2e-005
5000 5	0.035	0.000701	0.2913	0.006777	-0.0014	6.2e-005
5000 7	0.0235	0.000701	0.368	0.006777	-0.0015	6.2e-005

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
SSIZE*OBSERVED						
1000 A	0.0291	0.000859	0.5511	0.0083	-0.0003	7.6e-005
1000 X2	0.0299	0.000859	0.5412	0.0083	-0.0048	7.6e-005
1000 X1X2	0.0297	0.000859	0.6216	0.0083	-0.0056	7.6e-005
5000 A	0.0291	0.000859	0.3241	0.0083	0	7.6e-005
5000 X2	0.0296	0.000859	0.3169	0.0083	-0.002	7.6e-005
5000 X1X2	0.0292	0.000859	0.3479	0.0083	-0.0022	7.6e-005
SSIZE*SITAVIO1						
1000 - RHO14	0.1016	0.000859	0.3361	0.0083	-0.004	7.6e-005
1000 0	0.0287	0.000859	0.7791	0.0083	-0.0034	7.6e-005
1000 RHO14	- 0.0416	0.000859	0.5986	0.0083	-0.0033	7.6e-005
5000 - RHO14	0.101	0.000859	0.0589	0.0083	-0.0014	7.6e-005
5000 0	0.0284	0.000859	0.5398	0.0083	-0.0015	7.6e-005
5000 RHO14	- 0.0415	0.000859	0.3903	0.0083	-0.0014	7.6e-005
KNRATIO*METHOD						
1/2 PROP	0.0292	0.000859	0.5431	0.0083	-0.0018	7.6e-005
1/2 DA	0.0296	0.000859	0.5455	0.0083	-0.0019	7.6e-005
2/2 PROP	0.0293	0.000859	0.4323	0.0083	-0.0025	7.6e-005
2/2 DA	0.0296	0.000859	0.4344	0.0083	-0.0025	7.6e-005
3/2 PROP	0.0293	0.000859	0.3734	0.0083	-0.0031	7.6e-005
3/2 DA	0.0297	0.000859	0.374	0.0083	-0.0031	7.6e-005
KNRATIO*NSTRATA						
1/2 5	0.0352	0.000859	0.5081	0.0083	-0.0016	7.6e-005
1/2 7	0.0236	0.000859	0.5806	0.0083	-0.0022	7.6e-005
2/2 5	0.0351	0.000859	0.3939	0.0083	-0.0024	7.6e-005
2/2 7	0.0238	0.000859	0.4728	0.0083	-0.0027	7.6e-005
3/2 5	0.0351	0.000859	0.3353	0.0083	-0.003	7.6e-005
3/2 7	0.0238	0.000859	0.4121	0.0083	-0.0032	7.6e-005
KNRATIO*OBSERVED						
1/2 A	0.0291	0.001052	0.5259	0.010165	-0.0004	9.3e-005
1/2 X2	0.0296	0.001052	0.5195	0.010165	-0.003	9.3e-005
1/2 X1X2	0.0296	0.001052	0.5876	0.010165	-0.0022	9.3e-005
2/2 A	0.0291	0.001052	0.4209	0.010165	-0.0001	9.3e-005
2/2 X2	0.0298	0.001052	0.4122	0.010165	-0.0034	9.3e-005
2/2 X1X2	0.0294	0.001052	0.4669	0.010165	-0.0041	9.3e-005
3/2 A	0.0291	0.001052	0.3659	0.010165	0	9.3e-005
3/2 X2	0.0298	0.001052	0.3555	0.010165	-0.0039	9.3e-005
3/2 X1X2	0.0295	0.001052	0.3998	0.010165	-0.0054	9.3e-005
KNRATIO*SITAVIO1						
1/2 - RHO14	0.1011	0.001052	0.309	0.010165	-0.0025	9.3e-005
1/2 0	0.0288	0.001052	0.7378	0.010165	-0.0017	9.3e-005
1/2 RHO14	- 0.0417	0.001052	0.5863	0.010165	-0.0015	9.3e-005
2/2 - RHO14	0.1014	0.001052	0.1732	0.010165	-0.0026	9.3e-005
2/2 0	0.0284	0.001052	0.6469	0.010165	-0.0025	9.3e-005
2/2 RHO14	- 0.0415	0.001052	0.4798	0.010165	-0.0024	9.3e-005
3/2 - RHO14	0.1015	0.001052	0.1102	0.010165	-0.003	9.3e-005
3/2 0	0.0284	0.001052	0.5937	0.010165	-0.0031	9.3e-005
3/2 RHO14	- 0.0415	0.001052	0.4173	0.010165	-0.0032	9.3e-005
METHOD*NSTRATA						
PROP 5	0.035	0.000701	0.4124	0.006777	- 0.0023	6.2e-005
PROP 7	0.0235	0.000701	0.4869	0.006777	- 0.0026	6.2e-005
DA 5	0.0353	0.000701	0.4125	0.006777	- 0.0023	6.2e-005
DA 7	0.0239	0.000701	0.4901	0.006777	- 0.0027	6.2e-005
METHOD*OBSERVED						
PROP A	0.0285	0.000859	0.4349	0.0083	-0.0001	7.6e-005
PROP X2	0.0297	0.000859	0.429	0.0083	-0.0034	7.6e-005
PROP X1X2	0.0295	0.000859	0.4849	0.0083	-0.0039	7.6e-005
DA A	0.0297	0.000859	0.4402	0.0083	-0.0002	7.6e-005
DA X2	0.0297	0.000859	0.429	0.0083	-0.0034	7.6e-005
DA X1X2	0.0295	0.000859	0.4846	0.0083	-0.0039	7.6e-005
METHOD*SITAVIO1						
PROP - RHO14	0.101	0.000859	0.1908	0.0083	-0.0026	7.6e-005
PROP 0	0.0285	0.000859	0.6595	0.0083	-0.0024	7.6e-005
PROP RHO14	- 0.0417	0.000859	0.4985	0.0083	-0.0024	7.6e-005
DA - RHO14	0.1017	0.000859	0.2042	0.0083	-0.0028	7.6e-005
DA 0	0.0285	0.000859	0.6594	0.0083	-0.0024	7.6e-005
DA RHO14	- 0.0413	0.000859	0.4904	0.0083	-0.0023	7.6e-005

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
NSTRATA*OBSERVED						
5 A	0.0348	0.000859	0.3989	0.0083	-0.0001	7.6e-005
5 X2	0.0354	0.000859	0.3914	0.0083	-0.0033	7.6e-005
5 X1X2	0.0352	0.000859	0.447	0.0083	-0.0036	7.6e-005
7 A	0.0234	0.000859	0.4762	0.0083	-0.0003	7.6e-005
7 X2	0.024	0.000859	0.4667	0.0083	-0.0035	7.6e-005
7 X1X2	0.0238	0.000859	0.5225	0.0083	-0.0042	7.6e-005
NSTRATA*SITAVIO1						
5 - RHO14	0.1071	0.000859	0.1603	0.0083	-0.0024	7.6e-005
5 0	0.0344	0.000859	0.5979	0.0083	-0.0023	7.6e-005
5 RHO14	- 0.036	0.000859	0.4791	0.0083	-0.0023	7.6e-005
7 - RHO14	0.0956	0.000859	0.2346	0.0083	-0.003	7.6e-005
7 0	0.0226	0.000859	0.721	0.0083	-0.0026	7.6e-005
7 RHO14	- 0.0471	0.000859	0.5098	0.0083	-0.0025	7.6e-005
OBSERVED*SITAVIO1						
A - RHO14	0.1097	0.001052	0.1243	0.010165	-0.0003	9.3e-005
A 0	0.0284	0.001052	0.6625	0.010165	-0.0001	9.3e-005
A RHO14	- 0.0508	0.001052	0.526	0.010165	-0.0001	9.3e-005
X2 - RHO14	0.1109	0.001052	0.153	0.010165	-0.0031	9.3e-005
X2 0	0.0285	0.001052	0.6602	0.010165	-0.0033	9.3e-005
X2 RHO14	- 0.0502	0.001052	0.4739	0.010165	-0.0037	9.3e-005
X1X2 - RHO14	0.0834	0.001052	0.3151	0.010165	-0.0046	9.3e-005
X1X2 0	0.0287	0.001052	0.6557	0.010165	-0.0038	9.3e-005
X1X2 RHO14	- 0.0236	0.001052	0.4834	0.010165	-0.0033	9.3e-005

Table XIII: Case 3: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	13.2381	13.2381	1.8912	190000	0
SSIZE	1	1e-005	1e-005	1e-005	0.58	0.446
KNRATIO	2	0	0	0	0.09	0.916
METHOD	1	0	0	0	0	0.98
NSTRATA	1	0.001	0.001	0.001	101.92	0
OBSERVED	2	2e-005	2e- 005	1e-005	1.19	0.305
SITAVIO2	1	30.6049	30.6049	30.6049	3100000	0
COVSTR*SSIZE	7	0	0	0	0.03	1
COVSTR*KNRATIO	14	8e- 005	8e-005	1e-005	0.56	0.893
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.00037	0.00037	5e-005	5.43	0
COVSTR*OBSERVED	14	1e- 005	1e-005	0	0.07	1
COVSTR*SITAVIO2	7	9.6006	9.6006	1.3715	140000	0
SSIZE*KNRATIO	2	1e- 005	1e-005	1e-005	0.55	0.577
SSIZE*METHOD	1	0	0	0	0	0.963
SSIZE*NSTRATA	1	2e-005	2e-005	2e-005	1.54	0.214
SSIZE*OBSERVED	2	2e- 005	2e-005	1e-005	1.27	0.28
SSIZE*SITAVIO2	1	6e-005	6e-005	6e- 005	6.1	0.014
KNRATIO*METHOD	2	0	0	0	0	0.996
KNRATIO*NSTRATA	2	1e-005	1e-005	0	0.5	0.608
KNRATIO*OBSERVED	4	1e- 005	1e-005	0	0.13	0.97
KNRATIO*SITAVIO2	2	3e-005	3e-005	2e- 005	1.76	0.173
METHOD*NSTRATA	1	0	0	0	0	0.99
METHOD*OBSERVED	2	0	0	0	0	0.999
METHOD*SITAVIO2	1	0	0	0	0	0.957
NSTRATA*OBSERVED	2	2e- 005	2e-005	1e-005	0.89	0.413
NSTRATA*SITAVIO2	1	0.02814	0.02814	0.02814	2868.87	0
OBSERVED*SITAVIO2	2	8e-005	8e-005	4e-005	3.85	0.022
Error	1054	0.01034	0.01034	1e-005		
Total	1151	53.4839				

Table XIV: Case 3: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	18.9849	18.9849	2.7121	576.41	0
SSIZE	1	4.2962	4.2962	4.2962	913.08	0
KNRATIO	2	1.1202	1.1202	0.5601	119.04	0
METHOD	1	0	0	0	0	0.995
NSTRATA	1	1.0922	1.0922	1.0922	232.12	0
OBSERVED	2	0.0017	0.0017	0.0009	0.18	0.832
SITAVIO2	1	124.3037	124.3037	124.3037	26000	0
COVSTR*SSIZE	7	2.8213	2.8213	0.403	85.66	0
COVSTR*KNRATIO	14	0.5347	0.5347	0.0382	8.12	0
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.6564	0.6564	0.0938	19.93	0
COVSTR*OBSERVED	14	0.0049	0.0049	0.0004	0.07	1
COVSTR*SITAVIO2	7	18.2768	18.2768	2.611	554.91	0
SSIZE*KNRATIO	2	0.0027	0.0027	0.0014	0.29	0.749
SSIZE*METHOD	1	0	0	0	0	0.991
SSIZE*NSTRATA	1	0.0191	0.0191	0.0191	4.07	0.044
SSIZE*OBSERVED	2	0.0148	0.0148	0.0074	1.57	0.209
SSIZE*SITAVIO2	1	3.9529	3.9529	3.9529	840.1	0
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	0.0024	0.0024	0.0012	0.25	0.776
KNRATIO*OBSERVED	4	0.0027	0.0027	0.0007	0.14	0.967
KNRATIO*SITAVIO2	2	0.9223	0.9223	0.4611	98	0
METHOD*NSTRATA	1	0	0	0	0	0.999
METHOD*OBSERVED	2	0	0	0	0	1
METHOD*SITAVIO2	1	0	0	0	0	0.971
NSTRATA*OBSERVED	2	0.001	0.001	0.0005	0.11	0.897
NSTRATA*SITAVIO2	1	1.0884	1.0884	1.0884	231.31	0
OBSERVED*SITAVIO2	2	0.0029	0.0029	0.0015	0.31	0.733
Error	1054	4.9593	4.9593	0.0047		
Total	1151	183.0616				

Table XV: Case 3: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.0018803	0.0018803	0.0002686	13.15	0
SSIZE	1	0.018894	0.018894	0.018894	925.03	0
KNRATIO	2	0.0012159	0.0012159	0.000608	29.77	0
METHOD	1	3.72e- 005	3.72e-005	3.72e-005	1.82	0.178
NSTRATA	1	0.0009248	0.0009248	0.0009248	45.28	0
OBSERVED	2	0.011537	0.011537	0.0057685	282.42	0
SITAVIO2	1	0.041893	0.041893	0.041893	2051.03	0
COVSTR*SSIZE	7	0.0012015	0.0012015	0.0001716	8.4	0
COVSTR*KNRATIO	14	0.0006829	0.0006829	4.88e-005	2.39	0.003
COVSTR*METHOD	7	2.64e-005	2.64e-005	3.8e-006	0.18	0.989
COVSTR*NSTRATA	7	0.0002147	0.0002147	3.07e-005	1.5	0.163
COVSTR*OBSERVED	14	0.0039736	0.0039736	0.0002838	13.9	0
COVSTR*SITAVIO2	7	0.0023149	0.0023149	0.0003307	16.19	0
SSIZE*KNRATIO	2	0.000512	0.000512	0.000256	12.53	0
SSIZE*METHOD	1	1.93e-005	1.93e-005	1.93e-005	0.95	0.331
SSIZE*NSTRATA	1	0.000451	0.000451	0.000451	22.08	0
SSIZE*OBSERVED	2	0.0061602	0.0061602	0.0030801	150.8	0
SSIZE*SITAVIO2	1	0.011107	0.011107	0.011107	543.77	0
KNRATIO*METHOD	2	9e-007	9e-007	4e-007	0.02	0.979
KNRATIO*NSTRATA	2	5.14e-005	5.14e-005	2.57e-005	1.26	0.284
KNRATIO*OBSERVED	4	0.0001351	0.0001351	3.38e- 005	1.65	0.159
KNRATIO*SITAVIO2	2	0.003029	0.003029	0.0015145	74.15	0
METHOD*NSTRATA	1	1.5e-006	1.5e-006	1.5e-006	0.08	0.784
METHOD*OBSERVED	2	7.43e-005	7.43e-005	3.72e-005	1.82	0.163
METHOD*SITAVIO2	1	3.38e-005	3.38e-005	3.38e-005	1.66	0.198
NSTRATA*OBSERVED	2	0.0009432	0.0009432	0.0004716	23.09	0
NSTRATA*SITAVIO2	1	0.0007002	0.0007002	0.0007002	34.28	0
OBSERVED*SITAVIO2	2	0.0040111	0.0040111	0.0020056	98.19	0
Error	1054	0.021528	0.021528	2.04e-005		
Total	1151	0.13355				

Table XVI: Case 3: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.0843	0.000261	0.46113	0.005716	-0.00623	0.000377
2	0.29874	0.000261	0.20374	0.005716	-0.00853	0.000377
3	0.08431	0.000261	0.46003	0.005716	-0.00817	0.000377
4	0.08424	0.000261	0.45844	0.005716	-0.00676	0.000377
5	0.29864	0.000261	0.20331	0.005716	-0.00971	0.000377
6	0.29888	0.000261	0.20118	0.005716	-0.00976	0.000377
7	0.08443	0.000261	0.45777	0.005716	-0.0098	0.000377
8	0.2986	0.000261	0.20221	0.005716	-0.00875	0.000377
SSIZE						
1000	0.19145	0.000131	0.39205	0.002858	-0.01251	0.000188
5000	0.19159	0.000131	0.26991	0.002858	-0.00441	0.000188
KNRATIO						
1/2	0.19154	0.00016	0.37227	0.0035	-0.00984	0.000231
2/2	0.19146	0.00016	0.32373	0.0035	-0.00819	0.000231
3/2	0.19155	0.00016	0.29692	0.0035	-0.00737	0.000231
METHOD						
PROP	0.19152	0.000131	0.33099	0.002858	-0.00828	0.000188
DA	0.19152	0.000131	0.33096	0.002858	-0.00864	0.000188
NSTRATA						
5	0.19245	0.000131	0.30019	0.002858	-0.00757	0.000188
7	0.19059	0.000131	0.36177	0.002858	-0.00936	0.000188
OBSERVED						
A	0.19158	0.00016	0.33227	0.0035	-0.00475	0.000231
X2	0.19165	0.00016	0.33133	0.0035	-0.00816	0.000231
X1X2	0.19132	0.00016	0.32933	0.0035	-0.01248	0.000231
SITAVIO2						
N	0.02852	0.000131	0.65946	0.002858	-0.00243	0.000188
Y	0.35451	0.000131	0.00249	0.002858	-0.01449	0.000188
COVSTR*SSIZE						
1 1000	0.08421	0.000369	0.47386	0.008084	-0.00865	0.000533
1 5000	0.08439	0.000369	0.4484	0.008084	-0.00382	0.000533
2 1000	0.29863	0.000369	0.31361	0.008084	-0.01197	0.000533
2 5000	0.29884	0.000369	0.09386	0.008084	-0.00508	0.000533
3 1000	0.08425	0.000369	0.47329	0.008084	-0.01271	0.000533
3 5000	0.08437	0.000369	0.44678	0.008084	-0.00363	0.000533
4 1000	0.08422	0.000369	0.46982	0.008084	-0.00984	0.000533
4 5000	0.08426	0.000369	0.44707	0.008084	-0.00368	0.000533
5 1000	0.29858	0.000369	0.31392	0.008084	-0.01432	0.000533
5 5000	0.29871	0.000369	0.09269	0.008084	-0.0051	0.000533
6 1000	0.29875	0.000369	0.31257	0.008084	-0.01454	0.000533
6 5000	0.29901	0.000369	0.08979	0.008084	-0.00498	0.000533
7 1000	0.08434	0.000369	0.46679	0.008084	-0.01562	0.000533
7 5000	0.08453	0.000369	0.44875	0.008084	-0.00398	0.000533
8 1000	0.2986	0.000369	0.3125	0.008084	-0.01246	0.000533
8 5000	0.2986	0.000369	0.09192	0.008084	-0.00505	0.000533

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*KNRATIO						
1 1/2	0.08404	0.000452	0.47223	0.009901	-0.00805	0.000652
1 2/2	0.08457	0.000452	0.45702	0.009901	-0.00602	0.000652
1 3/2	0.08428	0.000452	0.45415	0.009901	-0.00463	0.000652
2 1/2	0.2987	0.000452	0.27162	0.009901	-0.00917	0.000652
2 2/2	0.29866	0.000452	0.19277	0.009901	-0.00793	0.000652
2 3/2	0.29885	0.000452	0.14681	0.009901	-0.00848	0.000652
3 1/2	0.08465	0.000452	0.47294	0.009901	-0.01028	0.000652
3 2/2	0.08406	0.000452	0.45996	0.009901	-0.00807	0.000652
3 3/2	0.08422	0.000452	0.44721	0.009901	-0.00615	0.000652
4 1/2	0.08451	0.000452	0.4706	0.009901	-0.00903	0.000652
4 2/2	0.08357	0.000452	0.45844	0.009901	-0.0063	0.000652
4 3/2	0.08463	0.000452	0.44629	0.009901	-0.00496	0.000652
5 1/2	0.29826	0.000452	0.27533	0.009901	-0.01022	0.000652
5 2/2	0.29912	0.000452	0.18473	0.009901	-0.00954	0.000652
5 3/2	0.29855	0.000452	0.14985	0.009901	-0.00937	0.000652
6 1/2	0.29884	0.000452	0.27283	0.009901	-0.00997	0.000652
6 2/2	0.29867	0.000452	0.18656	0.009901	-0.01041	0.000652
6 3/2	0.29912	0.000452	0.14415	0.009901	-0.0089	0.000652
7 1/2	0.0845	0.000452	0.47202	0.009901	-0.01283	0.000652
7 2/2	0.08458	0.000452	0.45679	0.009901	-0.00848	0.000652
7 3/2	0.08421	0.000452	0.4445	0.009901	-0.00809	0.000652
8 1/2	0.2988	0.000452	0.27058	0.009901	-0.00917	0.000652
8 2/2	0.29848	0.000452	0.1936	0.009901	-0.00875	0.000652
8 3/2	0.29853	0.000452	0.14244	0.009901	-0.00834	0.000652
COVSTR*METHOD						
1 PROP	0.08429	0.000369	0.4611	0.008084	-0.0062	0.000533
1 DA	0.08431	0.000369	0.46117	0.008084	-0.00627	0.000533
2 PROP	0.29876	0.000369	0.20368	0.008084	-0.0085	0.000533
2 DA	0.29872	0.000369	0.20379	0.008084	-0.00855	0.000533
3 PROP	0.08429	0.000369	0.46012	0.008084	-0.00787	0.000533
3 DA	0.08433	0.000369	0.45994	0.008084	-0.00846	0.000533
4 PROP	0.08424	0.000369	0.45837	0.008084	-0.00669	0.000533
4 DA	0.08423	0.000369	0.45851	0.008084	-0.00684	0.000533
5 PROP	0.29864	0.000369	0.20325	0.008084	-0.00947	0.000533
5 DA	0.29864	0.000369	0.20336	0.008084	-0.00995	0.000533
6 PROP	0.29888	0.000369	0.20118	0.008084	-0.0096	0.000533
6 DA	0.29887	0.000369	0.20118	0.008084	-0.00992	0.000533
7 PROP	0.08443	0.000369	0.45787	0.008084	-0.0093	0.000533
7 DA	0.08443	0.000369	0.45767	0.008084	-0.0103	0.000533
8 PROP	0.29862	0.000369	0.20233	0.008084	-0.00865	0.000533
8 DA	0.29859	0.000369	0.20208	0.008084	-0.00886	0.000533
COVSTR*NSTRATA						
1 5	0.08479	0.000369	0.45326	0.008084	-0.00585	0.000533
1 7	0.08381	0.000369	0.469	0.008084	-0.00662	0.000533
2 5	0.3002	0.000369	0.14999	0.008084	-0.00812	0.000533
2 7	0.29728	0.000369	0.25749	0.008084	-0.00893	0.000533
3 5	0.08459	0.000369	0.45308	0.008084	-0.00669	0.000533
3 7	0.08403	0.000369	0.46699	0.008084	-0.00965	0.000533
4 5	0.08446	0.000369	0.45262	0.008084	-0.00638	0.000533
4 7	0.08401	0.000369	0.46426	0.008084	-0.00714	0.000533
5 5	0.3001	0.000369	0.148	0.008084	-0.00845	0.000533
5 7	0.29719	0.000369	0.25861	0.008084	-0.01097	0.000533
6 5	0.30036	0.000369	0.14624	0.008084	-0.00865	0.000533
6 7	0.2974	0.000369	0.25612	0.008084	-0.01086	0.000533
7 5	0.08492	0.000369	0.45069	0.008084	-0.00846	0.000533
7 7	0.08394	0.000369	0.46485	0.008084	-0.01114	0.000533
8 5	0.30018	0.000369	0.1476	0.008084	-0.00794	0.000533
8 7	0.29702	0.000369	0.25682	0.008084	-0.00956	0.000533

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*OBSERVED						
1 A	0.08429	0.000452	0.46167	0.009901	-0.00547	0.000652
1 X2	0.08439	0.000452	0.46008	0.009901	-0.0059	0.000652
1 X1X2	0.08422	0.000452	0.46165	0.009901	-0.00733	0.000652
2 A	0.29883	0.000452	0.20408	0.009901	-0.00377	0.000652
2 X2	0.29887	0.000452	0.20396	0.009901	-0.01018	0.000652
2 X1X2	0.29851	0.000452	0.20317	0.009901	-0.01162	0.000652
3 A	0.08452	0.000452	0.46308	0.009901	-0.00546	0.000652
3 X2	0.08455	0.000452	0.46225	0.009901	-0.006	0.000652
3 X1X2	0.08386	0.000452	0.45477	0.009901	-0.01304	0.000652
4 A	0.08422	0.000452	0.45837	0.009901	-0.00591	0.000652
4 X2	0.08429	0.000452	0.45742	0.009901	-0.00636	0.000652
4 X1X2	0.08421	0.000452	0.45954	0.009901	-0.00802	0.000652
5 A	0.29871	0.000452	0.20258	0.009901	-0.00374	0.000652
5 X2	0.29882	0.000452	0.20583	0.009901	-0.01007	0.000652
5 X1X2	0.29841	0.000452	0.2015	0.009901	-0.01532	0.000652
6 A	0.29888	0.000452	0.20137	0.009901	-0.00383	0.000652
6 X2	0.29906	0.000452	0.2005	0.009901	-0.01004	0.000652
6 X1X2	0.29869	0.000452	0.20167	0.009901	-0.01541	0.000652
7 A	0.08449	0.000452	0.46258	0.009901	-0.00601	0.000652
7 X2	0.0845	0.000452	0.45979	0.009901	-0.00655	0.000652
7 X1X2	0.0843	0.000452	0.45094	0.009901	-0.01684	0.000652
8 A	0.29871	0.000452	0.20437	0.009901	-0.00379	0.000652
8 X2	0.29873	0.000452	0.20083	0.009901	-0.01019	0.000652
8 X1X2	0.29837	0.000452	0.20142	0.009901	-0.01228	0.000652
COVSTR*SITAVIO2						
1 N	0.0125	0.000369	0.91742	0.008084	-3e-005	0.000533
1 Y	0.1561	0.000369	0.00485	0.008084	-0.01244	0.000533
2 N	0.04455	0.000369	0.40747	0.008084	-0.00426	0.000533
2 Y	0.55292	0.000369	0	0.008084	-0.01279	0.000533
3 N	0.01242	0.000369	0.91565	0.008084	-0.00038	0.000533
3 Y	0.1562	0.000369	0.00442	0.008084	-0.01596	0.000533
4 N	0.01284	0.000369	0.91119	0.008084	-0.00092	0.000533
4 Y	0.15563	0.000369	0.00569	0.008084	-0.01261	0.000533
5 N	0.0444	0.000369	0.4065	0.008084	-0.00422	0.000533
5 Y	0.55289	0.000369	0.00011	0.008084	-0.01521	0.000533
6 N	0.04449	0.000369	0.40218	0.008084	-0.00435	0.000533
6 Y	0.55327	0.000369	0.00018	0.008084	-0.01517	0.000533
7 N	0.01269	0.000369	0.91086	0.008084	-0.00113	0.000533
7 Y	0.15617	0.000369	0.00468	0.008084	-0.01847	0.000533
8 N	0.04429	0.000369	0.40442	0.008084	-0.0042	0.000533
8 Y	0.55292	0.000369	0	0.008084	-0.01331	0.000533
SSIZE*KNRATIO						
1000 1/2	0.19136	0.000226	0.43154	0.00495	-0.01477	0.000326
1000 2/2	0.19138	0.000226	0.38676	0.00495	-0.01208	0.000326
1000 3/2	0.1916	0.000226	0.35784	0.00495	-0.01069	0.000326
5000 1/2	0.19172	0.000226	0.31301	0.00495	-0.0049	0.000326
5000 2/2	0.19154	0.000226	0.26071	0.00495	-0.0043	0.000326
5000 3/2	0.1915	0.000226	0.23601	0.00495	-0.00404	0.000326
SSIZE*METHOD						
1000 PROP	0.19145	0.000185	0.39203	0.004042	-0.0122	0.000266
1000 DA	0.19144	0.000185	0.39206	0.004042	-0.01282	0.000266
5000 PROP	0.19159	0.000185	0.26994	0.004042	-0.00436	0.000266
5000 DA	0.19159	0.000185	0.26987	0.004042	-0.00446	0.000266
SSIZE*NSTRATA						
1000 5	0.19249	0.000185	0.36533	0.004042	-0.01099	0.000266
1000 7	0.1904	0.000185	0.41876	0.004042	-0.01404	0.000266
5000 5	0.1924	0.000185	0.23504	0.004042	-0.00414	0.000266
5000 7	0.19077	0.000185	0.30477	0.004042	-0.00468	0.000266
SSIZE*OBSERVED						
1000 A	0.1916	0.000226	0.39837	0.00495	-0.00656	0.000326
1000 X2	0.1917	0.000226	0.3903	0.00495	-0.01127	0.000326
1000 X1X2	0.19104	0.000226	0.38746	0.00495	-0.01971	0.000326
5000 A	0.19156	0.000226	0.26616	0.00495	-0.00294	0.000326
5000 X2	0.1916	0.000226	0.27236	0.00495	-0.00505	0.000326
5000 X1X2	0.1916	0.000226	0.2712	0.00495	-0.00525	0.000326

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
SSIZE*SITAVIO2						
1000 N	0.02868	0.000185	0.77911	0.004042	-0.00338	0.000266
1000 Y	0.35421	0.000185	0.00498	0.004042	-0.02165	0.000266
5000 N	0.02837	0.000185	0.53982	0.004042	-0.00149	0.000266
5000 Y	0.35481	0.000185	0	0.004042	-0.00734	0.000266
KNRATIO*METHOD						
1/2 PROP	0.19155	0.000226	0.37228	0.00495	-0.00963	0.000326
1/2 DA	0.19153	0.000226	0.37226	0.00495	-0.01005	0.000326
2/2 PROP	0.19147	0.000226	0.32374	0.00495	-0.008	0.000326
2/2 DA	0.19146	0.000226	0.32372	0.00495	-0.00838	0.000326
3/2 PROP	0.19154	0.000226	0.29694	0.00495	-0.00722	0.000326
3/2 DA	0.19156	0.000226	0.29691	0.00495	-0.00751	0.000326
KNRATIO*NSTRATA						
1/2 5	0.19258	0.000226	0.34138	0.00495	-0.00892	0.000326
1/2 7	0.1905	0.000226	0.40316	0.00495	-0.01076	0.000326
2/2 5	0.1924	0.000226	0.29123	0.00495	-0.00705	0.000326
2/2 7	0.19053	0.000226	0.35623	0.00495	-0.00933	0.000326
3/2 5	0.19237	0.000226	0.26794	0.00495	-0.00674	0.000326
3/2 7	0.19073	0.000226	0.32591	0.00495	-0.00799	0.000326
KNRATIO*OBSERVED						
1/2 A	0.19164	0.000277	0.37375	0.006063	-0.0063	0.000399
1/2 X2	0.19173	0.000277	0.37028	0.006063	-0.00891	0.000399
1/2 X1X2	0.19125	0.000277	0.37278	0.006063	-0.0143	0.000399
2/2 A	0.19155	0.000277	0.3258	0.006063	-0.00446	0.000399
2/2 X2	0.1916	0.000277	0.32394	0.006063	-0.00799	0.000399
2/2 X1X2	0.19123	0.000277	0.32147	0.006063	-0.01211	0.000399
3/2 A	0.19155	0.000277	0.29725	0.006063	-0.00348	0.000399
3/2 X2	0.19162	0.000277	0.29978	0.006063	-0.00758	0.000399
3/2 X1X2	0.19148	0.000277	0.29374	0.006063	-0.01104	0.000399
KNRATIO*SITAVIO2						
1/2 N	0.02878	0.000226	0.73776	0.00495	-0.00166	0.000326
1/2 Y	0.35429	0.000226	0.00679	0.00495	-0.01802	0.000326
2/2 N	0.0284	0.000226	0.64692	0.00495	-0.00254	0.000326
2/2 Y	0.35453	0.000226	0.00055	0.00495	-0.01383	0.000326
3/2 N	0.02839	0.000226	0.59371	0.00495	-0.0031	0.000326
3/2 Y	0.35471	0.000226	0.00014	0.00495	-0.01163	0.000326
METHOD*NSTRATA						
PROP 5	0.19245	0.000185	0.3002	0.004042	-0.00743	0.000266
PROP 7	0.19059	0.000185	0.36178	0.004042	-0.00914	0.000266
DA 5	0.19245	0.000185	0.30017	0.004042	-0.00771	0.000266
DA 7	0.19058	0.000185	0.36176	0.004042	-0.00958	0.000266
METHOD*OBSERVED						
PROP A	0.19158	0.000226	0.33227	0.00495	-0.00475	0.000326
PROP X2	0.19165	0.000226	0.33133	0.00495	-0.00816	0.000326
PROP X1X2	0.19133	0.000226	0.32937	0.00495	-0.01194	0.000326
DA A	0.19158	0.000226	0.33227	0.00495	-0.00475	0.000326
DA X2	0.19165	0.000226	0.33133	0.00495	-0.00816	0.000326
DA X1X2	0.19131	0.000226	0.32929	0.00495	-0.01302	0.000326
METHOD*SITAVIO2						
PROP N	0.02852	0.000185	0.65955	0.004042	-0.00243	0.000266
PROP Y	0.35452	0.000185	0.00243	0.004042	-0.01414	0.000266
DA N	0.02853	0.000185	0.65938	0.004042	-0.00244	0.000266
DA Y	0.3545	0.000185	0.00255	0.004042	-0.01485	0.000266
NSTRATA*OBSERVED						
5 A	0.19239	0.000226	0.3002	0.00495	-0.00456	0.000326
5 X2	0.19254	0.000226	0.30151	0.00495	-0.00784	0.000326
5 X1X2	0.19242	0.000226	0.29885	0.00495	-0.01031	0.000326
7 A	0.19077	0.000226	0.36433	0.00495	-0.00494	0.000326
7 X2	0.19076	0.000226	0.36116	0.00495	-0.00849	0.000326
7 X1X2	0.19022	0.000226	0.35981	0.00495	-0.01466	0.000326
NSTRATA*SITAVIO2						
5 N	0.0344	0.000185	0.59793	0.004042	-0.00232	0.000266
5 Y	0.3505	0.000185	0.00244	0.004042	-0.01282	0.000266
7 N	0.02265	0.000185	0.72099	0.004042	-0.00255	0.000266
7 Y	0.35852	0.000185	0.00255	0.004042	-0.01617	0.000266

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
OBSERVED*SITAVIO2						
A N	0.02838	0.000226	0.6625	0.00495	-0.00014	0.000326
A Y	0.35479	0.000226	0.00203	0.00495	-0.00936	0.000326
X2 N	0.02851	0.000226	0.66018	0.00495	-0.00335	0.000326
X2 Y	0.35479	0.000226	0.00249	0.00495	-0.01298	0.000326
X1X2 N	0.02869	0.000226	0.65571	0.00495	-0.00382	0.000326
X1X2 Y	0.35395	0.000226	0.00295	0.00495	-0.02115	0.000326

Table XVII: Case 4: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	9.5866	9.5866	1.3695	4128.03	0
SSIZE	1	3e-005	3e-005	3e-005	0.1	0.752
KNRATIO	2	0	0	0	0	0.999
METHOD	1	5e-005	5e- 005	5e-005	0.14	0.705
NSTRATA	1	0.05497	0.05497	0.05497	165.69	0
OBSERVED	3	7.7031	7.7031	2.5677	7739.58	0
SITAVIO1	2	6.7976	6.7976	3.3988	10000	0
COVSTR*SSIZE	7	4e- 005	4e-005	1e-005	0.02	1
COVSTR*KNRATIO	14	0.0001	0.0001	1e- 005	0.02	1
COVSTR*METHOD	7	1e-005	1e-005	0	0.01	1
COVSTR*NSTRATA	7	0.01454	0.01454	0.00208	6.26	0
COVSTR*OBSERVED	21	18.2654	18.2654	0.86978	2621.72	0
COVSTR*SITAVIO1	14	1.7053	1.7053	0.12181	367.16	0
SSIZE*KNRATIO	2	1e- 005	1e-005	1e-005	0.02	0.984
SSIZE*METHOD	1	0	0	0	0	0.98
SSIZE*NSTRATA	1	0	0	0	0.01	0.904
SSIZE*OBSERVED	3	2e- 005	2e-005	1e-005	0.02	0.997
SSIZE*SITAVIO1	2	4e-005	4e-005	2e- 005	0.05	0.948
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	1e-005	1e-005	0	0.01	0.989
KNRATIO*OBSERVED	6	1e- 005	1e-005	0	0	1
KNRATIO*SITAVIO1	4	4e-005	4e-005	1e- 005	0.03	0.998
METHOD*NSTRATA	1	0	0	0	0	0.951
METHOD*OBSERVED	3	0.00014	0.00014	5e-005	0.14	0.937
METHOD*SITAVIO1	2	3e- 005	3e-005	1e-005	0.04	0.957
NSTRATA*OBSERVED	3	0.00472	0.00472	0.00157	4.74	0.003
NSTRATA*SITAVIO1	2	0.0001	0.0001	5e-005	0.15	0.857
OBSERVED*SITAVIO1	6	0.29738	0.29738	0.04956	149.39	0
Error	2176	0.72191	0.72191	0.00033		
Total	2303	45.1522				

Table XVIII: Case 4: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	6.4324	6.4324	0.9189	26.29	0
SSIZE	1	24.4149	24.4149	24.4149	698.53	0
KNRATIO	2	8.3658	8.3658	4.1829	119.68	0
METHOD	1	0.0009	0.0009	0.0009	0.03	0.871
NSTRATA	1	1.9584	1.9584	1.9584	56.03	0
OBSERVED	3	45.4549	45.4549	15.1516	433.5	0
SITAVIO1	2	56.838	56.838	28.419	813.09	0
COVSTR*SSIZE	7	0.1438	0.1438	0.0205	0.59	0.766
COVSTR*KNRATIO	14	0.0873	0.0873	0.0062	0.18	1
COVSTR*METHOD	7	0.0019	0.0019	0.0003	0.01	1
COVSTR*NSTRATA	7	1.0794	1.0794	0.1542	4.41	0
COVSTR*OBSERVED	21	20.7526	20.7526	0.9882	28.27	0
COVSTR*SITAVIO1	14	56.356	56.356	4.0254	115.17	0
SSIZE*KNRATIO	2	1.1246	1.1246	0.5623	16.09	0
SSIZE*METHOD	1	0.0018	0.0018	0.0018	0.05	0.821
SSIZE*NSTRATA	1	0.0002	0.0002	0.0002	0.01	0.943
SSIZE*OBSERVED	3	2.4306	2.4306	0.8102	23.18	0
SSIZE*SITAVIO1	2	0.1676	0.1676	0.0838	2.4	0.091
KNRATIO*METHOD	2	0.0002	0.0002	0.0001	0	0.997
KNRATIO*NSTRATA	2	0.0028	0.0028	0.0014	0.04	0.961
KNRATIO*OBSERVED	6	0.798	0.798	0.133	3.81	0.001
KNRATIO*SITAVIO1	4	0.0669	0.0669	0.0167	0.48	0.752
METHOD*NSTRATA	1	0.0008	0.0008	0.0008	0.02	0.881
METHOD*OBSERVED	3	0.0031	0.0031	0.001	0.03	0.993
METHOD*SITAVIO1	2	0.0256	0.0256	0.0128	0.37	0.694
NSTRATA*OBSERVED	3	0.5437	0.5437	0.1812	5.19	0.001
NSTRATA*SITAVIO1	2	0.4971	0.4971	0.2486	7.11	0.001
OBSERVED*SITAVIO1	6	14.0059	14.0059	2.3343	66.79	0
Error	2176	76.055	76.055	0.035		
Total	2303	317.6103				

Table XIX: Case 4: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.0054496	0.0054496	0.0007785	391.28	0
SSIZE	1	0.0032206	0.0032206	0.0032206	1618.65	0
KNRATIO	2	0.0006461	0.0006461	0.0003231	162.37	0
METHOD	1	7e-007	7e- 007	7e-007	0.34	0.559
NSTRATA	1	5.05e-005	5.05e-005	5.05e- 005	25.37	0
OBSERVED	3	0.0055717	0.0055717	0.0018572	933.43	0
SITAVIO1	2	1.05e-005	1.05e-005	5.2e-006	2.64	0.072
COVSTR*SSIZE	7	0.0007393	0.0007393	0.0001056	53.08	0
COVSTR*KNRATIO	14	0.0005108	0.0005108	3.65e-005	18.34	0
COVSTR*METHOD	7	2e- 007	2e-007	0	0.01	1
COVSTR*NSTRATA	7	1.6e-005	1.6e- 005	2.3e-006	1.15	0.328
COVSTR*OBSERVED	21	0.010676	0.010676	0.0005084	255.51	0
COVSTR*SITAVIO1	14	0.0001725	0.0001725	1.23e-005	6.19	0
SSIZE*KNRATIO	2	4.39e-005	4.39e-005	2.19e-005	11.03	0
SSIZE*METHOD	1	3e- 007	3e-007	3e-007	0.16	0.688
SSIZE*NSTRATA	1	1.48e-005	1.48e- 005	1.48e-005	7.42	0.007
SSIZE*OBSERVED	3	0.0008568	0.0008568	0.0002856	143.54	0
SSIZE*SITAVIO1	2	3.9e-005	3.9e-005	1.95e-005	9.8	0
KNRATIO*METHOD	2	1e- 007	1e-007	1e-007	0.03	0.968
KNRATIO*NSTRATA	2	6.1e-006	6.1e-006	3e- 006	1.53	0.217
KNRATIO*OBSERVED	6	0.0006674	0.0006674	0.0001112	55.9	0
KNRATIO*SITAVIO1	4	8.49e-005	8.49e-005	2.12e-005	10.67	0
METHOD*NSTRATA	1	2e- 007	2e-007	2e-007	0.09	0.766
METHOD*OBSERVED	3	7e-007	7e-007	2e- 007	0.12	0.951
METHOD*SITAVIO1	2	3.1e-006	3.1e-006	1.6e- 006	0.79	0.456
NSTRATA*OBSERVED	3	1.17e-005	1.17e-005	3.9e- 006	1.95	0.119
NSTRATA*SITAVIO1	2	1.02e-005	1.02e-005	5.1e- 006	2.56	0.078
OBSERVED*SITAVIO1	6	0.0002306	0.0002306	3.84e-005	19.32	0
Error	2176	0.0043295	0.0043295	2e-006		
Total	2303	0.033364				

Table XX: Case 4: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.035	0.001073	0.3788	0.011016	-0.0004	8.3e-005
2	0.1394	0.001073	0.3525	0.011016	-0.0033	8.3e-005
3	0.019	0.001073	0.5026	0.011016	-0.0024	8.3e-005
4	0.0211	0.001073	0.374	0.011016	-0.0007	8.3e-005
5	0.1231	0.001073	0.3477	0.011016	-0.005	8.3e-005
6	0.1435	0.001073	0.3252	0.011016	-0.0033	8.3e-005
7	- 0.0502	0.001073	0.3322	0.011016	-0.0031	8.3e-005
8	0.0717	0.001073	0.3494	0.011016	-0.0046	8.3e-005
SSIZE						
1000	0.0629	0.000537	0.4732	0.005508	-0.004	4.2e-005
5000	0.0627	0.000537	0.2674	0.005508	-0.0017	4.2e-005
KNRATIO						
1/2	0.0628	0.000657	0.4503	0.006746	-0.0022	5.1e-005
2/2	0.0628	0.000657	0.3556	0.006746	-0.0029	5.1e-005
3/2	0.0628	0.000657	0.3049	0.006746	-0.0035	5.1e-005
METHOD						
PROP	0.0627	0.000537	0.3697	0.005508	-0.0028	4.2e-005
DA	0.063	0.000537	0.3709	0.005508	-0.0029	4.2e-005
NSTRATA						
5	0.0677	0.000537	0.3411	0.005508	-0.0027	4.2e-005
7	0.0579	0.000537	0.3995	0.005508	-0.003	4.2e-005
OBSERVED						
A	0.0291	0.000759	0.4376	0.00779	-0.0002	5.9e-005
X1	0.163	0.000759	0.1298	0.00779	-0.0039	5.9e-005
X2	0.0297	0.000759	0.429	0.00779	-0.0034	5.9e-005
X1X2	0.0295	0.000759	0.4847	0.00779	-0.0039	5.9e-005
SITAVIO1						
- RHO14	0.1297	0.000657	0.1549	0.006746	-0.0029	5.1e-005
0	0.0621	0.000657	0.5251	0.006746	-0.0028	5.1e-005
RHO14	- 0.0034	0.000657	0.4309	0.006746	-0.0028	5.1e-005
COVSTR*SSIZE						
1 1000	0.0351	0.001518	0.4757	0.015579	-0.0006	0.000118
1 5000	0.035	0.001518	0.2819	0.015579	-0.0003	0.000118
2 1000	0.1396	0.001518	0.4535	0.015579	-0.0045	0.000118
2 5000	0.1391	0.001518	0.2515	0.015579	-0.002	0.000118
3 1000	0.0188	0.001518	0.6059	0.015579	-0.0034	0.000118
3 5000	0.0191	0.001518	0.3992	0.015579	-0.0014	0.000118
4 1000	0.0211	0.001518	0.4916	0.015579	-0.0012	0.000118
4 5000	0.021	0.001518	0.2565	0.015579	-0.0002	0.000118
5 1000	0.1233	0.001518	0.4512	0.015579	-0.0069	0.000118
5 5000	0.1229	0.001518	0.2441	0.015579	-0.0032	0.000118
6 1000	0.1437	0.001518	0.4282	0.015579	-0.0047	0.000118
6 5000	0.1432	0.001518	0.2221	0.015579	-0.0019	0.000118
7 1000	- 0.05	0.001518	0.4209	0.015579	-0.0046	0.000118
7 5000	- 0.0503	0.001518	0.2435	0.015579	-0.0016	0.000118
8 1000	0.0719	0.001518	0.4588	0.015579	-0.0064	0.000118
8 5000	0.0715	0.001518	0.2399	0.015579	-0.0028	0.000118

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*KNRATIO						
1 1/2	0.0347	0.001859	0.4575	0.019081	-0.0005	0.000144
1 2/2	0.0354	0.001859	0.3634	0.019081	-0.0004	0.000144
1 3/2	0.035	0.001859	0.3156	0.019081	-0.0004	0.000144
2 1/2	0.1395	0.001859	0.4258	0.019081	-0.0028	0.000144
2 2/2	0.1394	0.001859	0.3408	0.019081	-0.0031	0.000144
2 3/2	0.1391	0.001859	0.2909	0.019081	-0.0039	0.000144
3 1/2	0.0189	0.001859	0.5909	0.019081	-0.0017	0.000144
3 2/2	0.0191	0.001859	0.4878	0.019081	-0.0024	0.000144
3 3/2	0.0189	0.001859	0.4291	0.019081	-0.0031	0.000144
4 1/2	0.0213	0.001859	0.469	0.019081	-0.0012	0.000144
4 2/2	0.0205	0.001859	0.3584	0.019081	-0.0006	0.000144
4 3/2	0.0214	0.001859	0.2947	0.019081	-0.0004	0.000144
5 1/2	0.1232	0.001859	0.4258	0.019081	-0.0035	0.000144
5 2/2	0.1231	0.001859	0.3306	0.019081	-0.0054	0.000144
5 3/2	0.123	0.001859	0.2865	0.019081	-0.0062	0.000144
6 1/2	0.1434	0.001859	0.4032	0.019081	-0.0023	0.000144
6 2/2	0.1434	0.001859	0.3103	0.019081	-0.0036	0.000144
6 3/2	0.1437	0.001859	0.262	0.019081	-0.0041	0.000144
7 1/2	- 0.0504	0.001859	0.4012	0.019081	-0.0019	0.000144
7 2/2	- 0.05	0.001859	0.3177	0.019081	-0.0031	0.000144
7 3/2	- 0.0501	0.001859	0.2778	0.019081	-0.0043	0.000144
8 1/2	0.0719	0.001859	0.4292	0.019081	-0.0036	0.000144
8 2/2	0.0715	0.001859	0.336	0.019081	-0.0046	0.000144
8 3/2	0.0717	0.001859	0.2828	0.019081	-0.0055	0.000144
COVSTR*METHOD						
1 PROP	0.0348	0.001518	0.379	0.015579	-0.0004	0.000118
1 DA	0.0352	0.001518	0.3786	0.015579	-0.0004	0.000118
2 PROP	0.1393	0.001518	0.351	0.015579	-0.0032	0.000118
2 DA	0.1394	0.001518	0.354	0.015579	-0.0033	0.000118
3 PROP	0.0188	0.001518	0.5031	0.015579	-0.0024	0.000118
3 DA	0.0192	0.001518	0.5021	0.015579	-0.0024	0.000118
4 PROP	0.0208	0.001518	0.3743	0.015579	-0.0007	0.000118
4 DA	0.0213	0.001518	0.3738	0.015579	-0.0008	0.000118
5 PROP	0.1231	0.001518	0.3461	0.015579	-0.005	0.000118
5 DA	0.1232	0.001518	0.3492	0.015579	-0.0051	0.000118
6 PROP	0.1434	0.001518	0.3236	0.015579	-0.0033	0.000118
6 DA	0.1435	0.001518	0.3268	0.015579	-0.0033	0.000118
7 PROP	- 0.0504	0.001518	0.3323	0.015579	-0.0031	0.000118
7 DA	- 0.05	0.001518	0.3321	0.015579	-0.0031	0.000118
8 PROP	0.0716	0.001518	0.3479	0.015579	-0.0046	0.000118
8 DA	0.0718	0.001518	0.3508	0.015579	-0.0046	0.000118
COVSTR*NSTRATA						
1 5	0.037	0.001518	0.3725	0.015579	-0.0004	0.000118
1 7	0.033	0.001518	0.3851	0.015579	-0.0005	0.000118
2 5	0.1463	0.001518	0.2985	0.015579	-0.0032	0.000118
2 7	0.1325	0.001518	0.4066	0.015579	-0.0033	0.000118
3 5	0.0211	0.001518	0.4908	0.015579	-0.0022	0.000118
3 7	0.0169	0.001518	0.5144	0.015579	-0.0026	0.000118
4 5	0.0231	0.001518	0.3662	0.015579	-0.0007	0.000118
4 7	0.0191	0.001518	0.3819	0.015579	-0.0008	0.000118
5 5	0.1305	0.001518	0.2936	0.015579	-0.0049	0.000118
5 7	0.1158	0.001518	0.4017	0.015579	-0.0052	0.000118
6 5	0.1502	0.001518	0.2899	0.015579	-0.0032	0.000118
6 7	0.1367	0.001518	0.3605	0.015579	-0.0035	0.000118
7 5	- 0.0465	0.001518	0.3245	0.015579	-0.0029	0.000118
7 7	- 0.0539	0.001518	0.3399	0.015579	-0.0033	0.000118
8 5	0.0799	0.001518	0.2931	0.015579	-0.0043	0.000118
8 7	0.0635	0.001518	0.4056	0.015579	-0.0049	0.000118

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*OBSERVED						
1 A	0.0135	0.002147	0.3933	0.022033	-0.0001	0.000166
1 X1	0.0979	0.002147	0.2857	0.022033	-0.0005	0.000166
1 X2	0.0144	0.002147	0.3931	0.022033	-0.0005	0.000166
1 X1X2	0.0142	0.002147	0.4433	0.022033	-0.0006	0.000166
2 A	0.0448	0.002147	0.4805	0.022033	-0.0002	0.000166
2 X1	0.422	0.002147	0	0.022033	-0.0003	0.000166
2 X2	0.0451	0.002147	0.4642	0.022033	-0.0063	0.000166
2 X1X2	0.0456	0.002147	0.4653	0.022033	-0.0062	0.000166
3 A	0.0137	0.002147	0.3971	0.022033	0	0.000166
3 X1	0.0349	0.002147	0.4381	0.022033	-0.0073	0.000166
3 X2	0.0146	0.002147	0.3965	0.022033	-0.0005	0.000166
3 X1X2	0.0128	0.002147	0.7787	0.022033	-0.0017	0.000166
4 A	0.0135	0.002147	0.3936	0.022033	-0.0005	0.000166
4 X1	0.042	0.002147	0.309	0.022033	-0.0005	0.000166
4 X2	0.0144	0.002147	0.3927	0.022033	-0.0009	0.000166
4 X1X2	0.0144	0.002147	0.4009	0.022033	-0.001	0.000166
5 A	0.0445	0.002147	0.4808	0.022033	-0.0001	0.000166
5 X1	0.3591	0.002147	0	0.022033	-0.0076	0.000166
5 X2	0.0448	0.002147	0.4665	0.022033	-0.0059	0.000166
5 X1X2	0.0441	0.002147	0.4433	0.022033	-0.0065	0.000166
6 A	0.0447	0.002147	0.4798	0.022033	-0.0002	0.000166
6 X1	0.438	0.002147	0	0.022033	0	0.000166
6 X2	0.0452	0.002147	0.465	0.022033	-0.006	0.000166
6 X1X2	0.0461	0.002147	0.356	0.022033	-0.0071	0.000166
7 A	0.0137	0.002147	0.3937	0.022033	-0.0003	0.000166
7 X1	- 0.2426	0.002147	0.0001	0.022033	-0.0093	0.000166
7 X2	0.0146	0.002147	0.3928	0.022033	-0.0008	0.000166
7 X1X2	0.0135	0.002147	0.5423	0.022033	-0.0021	0.000166
8 A	0.0445	0.002147	0.4819	0.022033	-0.0002	0.000166
8 X1	0.1525	0.002147	0.0057	0.022033	-0.0059	0.000166
8 X2	0.0448	0.002147	0.4616	0.022033	-0.0062	0.000166
8 X1X2	0.045	0.002147	0.4482	0.022033	-0.0061	0.000166
COVSTR*SITAVIO1						
1 - RHO14	0.1401	0.001859	0.1093	0.019081	-0.0007	0.000144
1 0	0.0345	0.001859	0.7094	0.019081	-0.0001	0.000144
1 RHO14	- 0.0696	0.001859	0.3177	0.019081	-0.0005	0.000144
2 - RHO14	0.181	0.001859	0.1294	0.019081	-0.003	0.000144
2 0	0.1387	0.001859	0.3056	0.019081	-0.0033	0.000144
2 RHO14	0.0984	0.001859	0.6226	0.019081	-0.0035	0.000144
3 - RHO14	0.0956	0.001859	0.2512	0.019081	-0.0029	0.000144
3 0	0.0183	0.001859	0.7791	0.019081	-0.0021	0.000144
3 RHO14	- 0.0569	0.001859	0.4775	0.019081	-0.0021	0.000144
4 - RHO14	0.1354	0.001859	0.1088	0.019081	-0.0008	0.000144
4 0	0.0204	0.001859	0.8127	0.019081	-0.0009	0.000144
4 RHO14	- 0.0927	0.001859	0.2006	0.019081	-0.0005	0.000144
5 - RHO14	0.1364	0.001859	0.2633	0.019081	-0.0055	0.000144
5 0	0.1225	0.001859	0.3049	0.019081	-0.005	0.000144
5 RHO14	0.1105	0.001859	0.4748	0.019081	-0.0046	0.000144
6 - RHO14	0.2046	0.001859	0.1018	0.019081	-0.003	0.000144
6 0	0.1421	0.001859	0.3016	0.019081	-0.0032	0.000144
6 RHO14	0.0837	0.001859	0.5721	0.019081	-0.0037	0.000144
7 - RHO14	0.0381	0.001859	0.1385	0.019081	-0.0035	0.000144
7 0	- 0.0505	0.001859	0.6831	0.019081	-0.0032	0.000144
7 RHO14	- 0.1382	0.001859	0.175	0.019081	-0.0026	0.000144
8 - RHO14	0.1062	0.001859	0.1371	0.019081	-0.0043	0.000144
8 0	0.0712	0.001859	0.304	0.019081	-0.0046	0.000144
8 RHO14	0.0378	0.001859	0.607	0.019081	-0.0049	0.000144
SSIZE*KNRATIO						
1000 1/2	0.063	0.000929	0.582	0.00954	-0.0032	7.2e-005
1000 2/2	0.0629	0.000929	0.4549	0.00954	-0.0041	7.2e-005
1000 3/2	0.0629	0.000929	0.3828	0.00954	-0.0048	7.2e-005
5000 1/2	0.0626	0.000929	0.3187	0.00954	-0.0012	7.2e-005
5000 2/2	0.0627	0.000929	0.2563	0.00954	-0.0017	7.2e-005
5000 3/2	0.0628	0.000929	0.227	0.00954	-0.0021	7.2e-005

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
SSIZE*METHOD						
1000 PROP	0.0628	0.000759	0.4717	0.00779	-0.004	5.9e-005
1000 DA	0.0631	0.000759	0.4748	0.00779	-0.0041	5.9e-005
5000 PROP	0.0626	0.000759	0.2676	0.00779	-0.0017	5.9e-005
5000 DA	0.0628	0.000759	0.2671	0.00779	-0.0017	5.9e-005
SSIZE*NSTRATA						
1000 5	0.0678	0.000759	0.4444	0.00779	-0.0038	5.9e-005
1000 7	0.0581	0.000759	0.5021	0.00779	-0.0043	5.9e-005
5000 5	0.0676	0.000759	0.2379	0.00779	-0.0016	5.9e-005
5000 7	0.0578	0.000759	0.2968	0.00779	-0.0017	5.9e-005
SSIZE*OBSERVED						
1000 A	0.0291	0.001073	0.5511	0.011016	-0.0003	8.3e-005
1000 X1	0.163	0.001073	0.1791	0.011016	-0.0054	8.3e-005
1000 X2	0.0299	0.001073	0.5412	0.011016	-0.0048	8.3e-005
1000 X1X2	0.0297	0.001073	0.6216	0.011016	-0.0056	8.3e-005
5000 A	0.0291	0.001073	0.3241	0.011016	0	8.3e-005
5000 X1	0.1629	0.001073	0.0805	0.011016	-0.0024	8.3e-005
5000 X2	0.0296	0.001073	0.3169	0.011016	-0.002	8.3e-005
5000 X1X2	0.0292	0.001073	0.3479	0.011016	-0.0022	8.3e-005
SSIZE*SITAVIO1						
1000 - RHO14	0.13	0.000929	0.2656	0.00954	-0.0043	7.2e-005
1000 0	0.0623	0.000929	0.6322	0.00954	-0.0039	7.2e-005
1000 RHO14	- 0.0034	0.000929	0.522	0.00954	-0.0039	7.2e-005
5000 - RHO14	0.1294	0.000929	0.0443	0.00954	-0.0016	7.2e-005
5000 0	0.062	0.000929	0.4179	0.00954	-0.0017	7.2e-005
5000 RHO14	- 0.0033	0.000929	0.3399	0.00954	-0.0017	7.2e-005
KNRATIO*METHOD						
1/2 PROP	0.0627	0.000929	0.4494	0.00954	-0.0022	7.2e-005
1/2 DA	0.063	0.000929	0.4512	0.00954	-0.0022	7.2e-005
2/2 PROP	0.0627	0.000929	0.3548	0.00954	-0.0029	7.2e-005
2/2 DA	0.0629	0.000929	0.3564	0.00954	-0.0029	7.2e-005
3/2 PROP	0.0627	0.000929	0.3047	0.00954	-0.0035	7.2e-005
3/2 DA	0.063	0.000929	0.3051	0.00954	-0.0035	7.2e-005
KNRATIO*NSTRATA						
1/2 5	0.0678	0.000929	0.4226	0.00954	-0.002	7.2e-005
1/2 7	0.0578	0.000929	0.478	0.00954	-0.0024	7.2e-005
2/2 5	0.0676	0.000929	0.3253	0.00954	-0.0028	7.2e-005
2/2 7	0.058	0.000929	0.386	0.00954	-0.003	7.2e-005
3/2 5	0.0677	0.000929	0.2755	0.00954	-0.0034	7.2e-005
3/2 7	0.058	0.000929	0.3344	0.00954	-0.0036	7.2e-005
KNRATIO*OBSERVED						
1/2 A	0.0291	0.001315	0.5259	0.013492	-0.0004	0.000102
1/2 X1	0.163	0.001315	0.1683	0.013492	-0.0031	0.000102
1/2 X2	0.0296	0.001315	0.5195	0.013492	-0.003	0.000102
1/2 X1X2	0.0296	0.001315	0.5876	0.013492	-0.0022	0.000102
2/2 A	0.0291	0.001315	0.4209	0.013492	-0.0001	0.000102
2/2 X1	0.1629	0.001315	0.1225	0.013492	-0.004	0.000102
2/2 X2	0.0298	0.001315	0.4122	0.013492	-0.0034	0.000102
2/2 X1X2	0.0294	0.001315	0.4669	0.013492	-0.0041	0.000102
3/2 A	0.0291	0.001315	0.3659	0.013492	0	0.000102
3/2 X1	0.163	0.001315	0.0986	0.013492	-0.0046	0.000102
3/2 X2	0.0298	0.001315	0.3555	0.013492	-0.0039	0.000102
3/2 X1X2	0.0295	0.001315	0.3998	0.013492	-0.0054	0.000102
KNRATIO*SITAVIO1						
1/2 - RHO14	0.1295	0.001138	0.2443	0.011685	-0.0026	8.8e-005
1/2 0	0.0624	0.001138	0.5962	0.011685	-0.002	8.8e-005
1/2 RHO14	- 0.0034	0.001138	0.5105	0.011685	-0.0019	8.8e-005
2/2 - RHO14	0.1297	0.001138	0.1349	0.011685	-0.0029	8.8e-005
2/2 0	0.062	0.001138	0.5135	0.011685	-0.003	8.8e-005
2/2 RHO14	- 0.0033	0.001138	0.4185	0.011685	-0.0029	8.8e-005
3/2 - RHO14	0.1298	0.001138	0.0856	0.011685	-0.0033	8.8e-005
3/2 0	0.062	0.001138	0.4654	0.011685	-0.0035	8.8e-005
3/2 RHO14	- 0.0033	0.001138	0.3638	0.011685	-0.0036	8.8e-005
METHOD*NSTRATA						
PROP 5	0.0676	0.000759	0.3411	0.00779	- 0.0027	5.9e-005
PROP 7	0.0578	0.000759	0.3982	0.00779	- 0.003	5.9e-005
DA 5	0.0678	0.000759	0.3412	0.00779	- 0.0027	5.9e-005
DA 7	0.0581	0.000759	0.4007	0.00779	- 0.003	5.9e-005

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
METHOD*OBSERVED						
PROP A	0.0285	0.001073	0.4349	0.011016	-0.0001	8.3e-005
PROP X1	0.163	0.001073	0.1298	0.011016	-0.0039	8.3e-005
PROP X2	0.0297	0.001073	0.429	0.011016	-0.0034	8.3e-005
PROP X1X2	0.0295	0.001073	0.4849	0.011016	-0.0039	8.3e-005
DA A	0.0297	0.001073	0.4402	0.011016	-0.0002	8.3e-005
DA X1	0.163	0.001073	0.1298	0.011016	-0.0039	8.3e-005
DA X2	0.0297	0.001073	0.429	0.011016	-0.0034	8.3e-005
DA X1X2	0.0295	0.001073	0.4846	0.011016	-0.0039	8.3e-005
METHOD*SITAVIO1						
PROP - RHO14	0.1294	0.000929	0.1499	0.00954	-0.0029	7.2e-005
PROP 0	0.0621	0.000929	0.5251	0.00954	-0.0028	7.2e-005
PROP RHO14	- 0.0035	0.000929	0.434	0.00954	-0.0028	7.2e-005
DA - RHO14	0.13	0.000929	0.1599	0.00954	-0.003	7.2e-005
DA 0	0.0621	0.000929	0.525	0.00954	-0.0028	7.2e-005
DA RHO14	- 0.0032	0.000929	0.4279	0.00954	-0.0028	7.2e-005
NSTRATA*OBSERVED						
5 A	0.0348	0.001073	0.3989	0.011016	-0.0001	8.3e-005
5 X1	0.1654	0.001073	0.1273	0.011016	-0.0039	8.3e-005
5 X2	0.0354	0.001073	0.3914	0.011016	-0.0033	8.3e-005
5 X1X2	0.0352	0.001073	0.447	0.011016	-0.0036	8.3e-005
7 A	0.0234	0.001073	0.4762	0.011016	-0.0003	8.3e-005
7 X1	0.1606	0.001073	0.1324	0.011016	-0.004	8.3e-005
7 X2	0.024	0.001073	0.4667	0.011016	-0.0035	8.3e-005
7 X1X2	0.0238	0.001073	0.5225	0.011016	-0.0042	8.3e-005
NSTRATA*SITAVIO1						
5 - RHO14	0.1347	0.000929	0.1264	0.00954	-0.0027	7.2e-005
5 0	0.0672	0.000929	0.4776	0.00954	-0.0027	7.2e-005
5 RHO14	0.0012	0.000929	0.4194	0.00954	-0.0027	7.2e-005
7 - RHO14	0.1247	0.000929	0.1835	0.00954	-0.0032	7.2e-005
7 0	0.0571	0.000929	0.5725	0.00954	-0.0029	7.2e-005
7 RHO14	- 0.008	0.000929	0.4424	0.00954	-0.0029	7.2e-005
OBSERVED*SITAVIO1						
A - RHO14	0.1097	0.001315	0.1243	0.013492	-0.0003	0.000102
A 0	0.0284	0.001315	0.6625	0.013492	-0.0001	0.000102
A RHO14	- 0.0508	0.001315	0.526	0.013492	-0.0001	0.000102
X1 - RHO14	0.2147	0.001315	0.0273	0.013492	-0.0037	0.000102
X1 0	0.163	0.001315	0.1218	0.013492	-0.004	0.000102
X1 RHO14	0.1112	0.001315	0.2403	0.013492	-0.0041	0.000102
X2 - RHO14	0.1109	0.001315	0.153	0.013492	-0.0031	0.000102
X2 0	0.0285	0.001315	0.6602	0.013492	-0.0033	0.000102
X2 RHO14	- 0.0502	0.001315	0.4739	0.013492	-0.0037	0.000102
X1X2 - RHO14	0.0834	0.001315	0.3151	0.013492	-0.0046	0.000102
X1X2 0	0.0287	0.001315	0.6557	0.013492	-0.0038	0.000102
X1X2 RHO14	- 0.0236	0.001315	0.4834	0.013492	-0.0033	0.000102

Table XXI: Case 5: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	36.4292	36.4292	5.2042	4571.63	0
SSIZE	1	0	0	0	0	0.953
KNRATIO	2	0	0	0	0	0.999
METHOD	1	0	0	0	0	0.998
NSTRATA	1	0.00328	0.00328	0.00328	2.88	0.09
OBSERVED	3	0.36364	0.36364	0.12121	106.48	0
SITAVIO2	1	29.3615	29.3615	29.3615	26000	0
COVSTR*SSIZE	7	1e- 005	1e-005	0	0	1
COVSTR*KNRATIO	14	8e-005	8e-005	1e- 005	0.01	1
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.00237	0.00237	0.00034	0.3	0.955
COVSTR*OBSERVED	21	17.5167	17.5167	0.83413	732.74	0
COVSTR*SITAVIO2	7	12.9792	12.9792	1.8542	1628.81	0
SSIZE*KNRATIO	2	1e- 005	1e-005	1e-005	0	0.996
SSIZE*METHOD	1	0	0	0	0	0.997
SSIZE*NSTRATA	1	1e-005	1e-005	1e-005	0.01	0.914
SSIZE*OBSERVED	3	3e- 005	3e-005	1e-005	0.01	0.999
SSIZE*SITAVIO2	1	5e-005	5e-005	5e- 005	0.04	0.842
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	1e-005	1e-005	0	0	0.997
KNRATIO*OBSERVED	6	1e- 005	1e-005	0	0	1
KNRATIO*SITAVIO2	2	4e-005	4e-005	2e- 005	0.02	0.982
METHOD*NSTRATA	1	0	0	0	0	0.999
METHOD*OBSERVED	3	0	0	0	0	1
METHOD*SITAVIO2	1	0	0	0	0	0.997
NSTRATA*OBSERVED	3	0.00131	0.00131	0.00044	0.38	0.766
NSTRATA*SITAVIO2	1	0.01993	0.01993	0.01993	17.51	0
OBSERVED*SITAVIO2	3	2.8192	2.8192	0.93973	825.51	0
Error	1424	1.621	1.621	0.00114		
Total	1535	101.1175				

Table XXII: Case 5: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	23.4302	23.4302	3.3472	302.51	0
SSIZE	1	5.7	5.7	5.7	515.15	0
KNRATIO	2	1.489	1.489	0.7445	67.28	0
METHOD	1	0	0	0	0	0.997
NSTRATA	1	0.9258	0.9258	0.9258	83.67	0
OBSERVED	3	16.2001	16.2001	5.4	488.04	0
SITAVIO2	1	98.6039	98.6039	98.6039	8911.54	0
COVSTR*SSIZE	7	1.2556	1.2556	0.1794	16.21	0
COVSTR*KNRATIO	14	0.2101	0.2101	0.015	1.36	0.167
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.423	0.423	0.0604	5.46	0
COVSTR*OBSERVED	21	4.7259	4.7259	0.225	20.34	0
COVSTR*SITAVIO2	7	15.8675	15.8675	2.2668	204.86	0
SSIZE*KNRATIO	2	0.0039	0.0039	0.002	0.18	0.838
SSIZE*METHOD	1	0	0	0	0	0.995
SSIZE*NSTRATA	1	0.0139	0.0139	0.0139	1.25	0.263
SSIZE*OBSERVED	3	0.0149	0.0149	0.005	0.45	0.719
SSIZE*SITAVIO2	1	3.2818	3.2818	3.2818	296.6	0
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	0.0018	0.0018	0.0009	0.08	0.921
KNRATIO*OBSERVED	6	0.0027	0.0027	0.0005	0.04	1
KNRATIO*SITAVIO2	2	0.8056	0.8056	0.4028	36.4	0
METHOD*NSTRATA	1	0	0	0	0	0.999
METHOD*OBSERVED	3	0	0	0	0	1
METHOD*SITAVIO2	1	0	0	0	0	0.984
NSTRATA*OBSERVED	3	0.1805	0.1805	0.0602	5.44	0.001
NSTRATA*SITAVIO2	1	0.8046	0.8046	0.8046	72.72	0
OBSERVED*SITAVIO2	3	26.0041	26.0041	8.668	783.39	0
Error	1424	15.7562	15.7562	0.0111		
Total	1535	215.701				

Table XXIII: Case 5: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.0047023	0.0047023	0.0006718	36.63	0
SSIZE	1	0.018825	0.018825	0.018825	1026.59	0
KNRATIO	2	0.0007163	0.0007163	0.0003582	19.53	0
METHOD	1	2.79e- 005	2.79e-005	2.79e-005	1.52	0.218
NSTRATA	1	0.0008726	0.0008726	0.0008726	47.59	0
OBSERVED	3	0.016001	0.016001	0.0053337	290.87	0
SITAVIO2	1	0.033418	0.033418	0.033418	1822.44	0
COVSTR*SSIZE	7	0.001885	0.001885	0.0002693	14.69	0
COVSTR*KNRATIO	14	0.0005521	0.0005521	3.94e- 005	2.15	0.008
COVSTR*METHOD	7	1.98e-005	1.98e-005	2.8e-006	0.15	0.993
COVSTR*NSTRATA	7	0.0001606	0.0001606	2.29e-005	1.25	0.272
COVSTR*OBSERVED	21	0.0074356	0.0074356	0.0003541	19.31	0
COVSTR*SITAVIO2	7	0.0023582	0.0023582	0.0003369	18.37	0
SSIZE*KNRATIO	2	0.0003933	0.0003933	0.0001967	10.72	0
SSIZE*METHOD	1	1.45e-005	1.45e-005	1.45e-005	0.79	0.374
SSIZE*NSTRATA	1	0.0004412	0.0004412	0.0004412	24.06	0
SSIZE*OBSERVED	3	0.0075492	0.0075492	0.0025164	137.23	0
SSIZE*SITAVIO2	1	0.0089701	0.0089701	0.0089701	489.18	0
KNRATIO*METHOD	2	7e- 007	7e-007	3e-007	0.02	0.982
KNRATIO*NSTRATA	2	4.94e-005	4.94e- 005	2.47e-005	1.35	0.26
KNRATIO*OBSERVED	6	0.0006825	0.0006825	0.0001137	6.2	0
KNRATIO*SITAVIO2	2	0.0026184	0.0026184	0.0013092	71.4	0
METHOD*NSTRATA	1	1.2e-006	1.2e-006	1.2e-006	0.06	0.802
METHOD*OBSERVED	3	8.36e-005	8.36e-005	2.79e- 005	1.52	0.207
METHOD*SITAVIO2	1	2.54e-005	2.54e-005	2.54e-005	1.38	0.24
NSTRATA*OBSERVED	3	0.0010365	0.0010365	0.0003455	18.84	0
NSTRATA*SITAVIO2	1	0.0006282	0.0006282	0.0006282	34.26	0
OBSERVED*SITAVIO2	3	0.012609	0.012609	0.0042031	229.21	0
Error	1424	0.026112	0.026112	1.83e-005		
Total	1535	0.14819				

Table XXIV: Case 5: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.0963	0.002435	0.3575	0.007591	-0.0048	0.000309
2	0.3625	0.002435	0.1528	0.007591	-0.0064	0.000309
3	0.075	0.002435	0.4131	0.007591	-0.0079	0.000309
4	0.0802	0.002435	0.4514	0.007591	-0.0055	0.000309
5	0.3413	0.002435	0.1525	0.007591	-0.0092	0.000309
6	0.4001	0.002435	0.1509	0.007591	-0.0077	0.000309
7	- 0.0358	0.002435	0.3433	0.007591	-0.0104	0.000309
8	0.2838	0.002435	0.152	0.007591	-0.0079	0.000309
SSIZE						
1000	0.2004	0.001217	0.3326	0.003796	-0.011	0.000155
5000	0.2005	0.001217	0.2108	0.003796	-0.004	0.000155
KNRATIO						
1/2	0.2004	0.001491	0.313	0.004649	-0.0084	0.000189
2/2	0.2003	0.001491	0.2643	0.004649	-0.0073	0.000189
3/2	0.2004	0.001491	0.2378	0.004649	-0.0068	0.000189
METHOD						
PROP	0.2004	0.001217	0.2717	0.003796	-0.0073	0.000155
DA	0.2004	0.001217	0.2717	0.003796	-0.0076	0.000155
NSTRATA						
5	0.2019	0.001217	0.2471	0.003796	-0.0067	0.000155
7	0.1989	0.001217	0.2962	0.003796	-0.0082	0.000155
OBSERVED						
A	0.1916	0.001722	0.3323	0.005368	-0.0047	0.000219
X1	0.227	0.001722	0.0938	0.005368	-0.0045	0.000219
X2	0.1917	0.001722	0.3313	0.005368	-0.0082	0.000219
X1X2	0.1913	0.001722	0.3293	0.005368	-0.0125	0.000219
SITAVIO2						
N	0.0621	0.001217	0.5251	0.003796	-0.0028	0.000155
Y	0.3387	0.001217	0.0183	0.003796	-0.0121	0.000155
COVSTR*SSIZE						
1 1000	0.0962	0.003444	0.3786	0.010736	-0.0066	0.000437
1 5000	0.0964	0.003444	0.3363	0.010736	-0.0029	0.000437
2 1000	0.3623	0.003444	0.2352	0.010736	-0.009	0.000437
2 5000	0.3626	0.003444	0.0704	0.010736	-0.0038	0.000437
3 1000	0.0749	0.003444	0.4715	0.010736	-0.012	0.000437
3 5000	0.0751	0.003444	0.3548	0.010736	-0.0039	0.000437
4 1000	0.0803	0.003444	0.5204	0.010736	-0.0081	0.000437
4 5000	0.0801	0.003444	0.3823	0.010736	-0.0029	0.000437
5 1000	0.3413	0.003444	0.2354	0.010736	-0.0134	0.000437
5 5000	0.3413	0.003444	0.0695	0.010736	-0.0051	0.000437
6 1000	0.3999	0.003444	0.2344	0.010736	-0.0115	0.000437
6 5000	0.4002	0.003444	0.0673	0.010736	-0.0039	0.000437
7 1000	- 0.0359	0.003444	0.3501	0.010736	-0.016	0.000437
7 5000	- 0.0358	0.003444	0.3366	0.010736	-0.0048	0.000437
8 1000	0.2838	0.003444	0.2351	0.010736	-0.0112	0.000437
8 5000	0.2837	0.003444	0.0689	0.010736	-0.0045	0.000437

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*KNRATIO						
1 1/2	0.0961	0.004217	0.3799	0.013149	-0.0061	0.000535
1 2/2	0.0965	0.004217	0.3503	0.013149	-0.0046	0.000535
1 3/2	0.0963	0.004217	0.3422	0.013149	-0.0035	0.000535
2 1/2	0.3624	0.004217	0.2037	0.013149	-0.0069	0.000535
2 2/2	0.3624	0.004217	0.1446	0.013149	-0.006	0.000535
2 3/2	0.3626	0.004217	0.1101	0.013149	-0.0064	0.000535
3 1/2	0.0753	0.004217	0.4523	0.013149	-0.0091	0.000535
3 2/2	0.0748	0.004217	0.4069	0.013149	-0.0079	0.000535
3 3/2	0.075	0.004217	0.3802	0.013149	-0.0068	0.000535
4 1/2	0.0805	0.004217	0.4987	0.013149	-0.0074	0.000535
4 2/2	0.0795	0.004217	0.4465	0.013149	-0.0052	0.000535
4 3/2	0.0805	0.004217	0.4089	0.013149	-0.0039	0.000535
5 1/2	0.341	0.004217	0.2065	0.013149	-0.0092	0.000535
5 2/2	0.3416	0.004217	0.1385	0.013149	-0.0091	0.000535
5 3/2	0.3411	0.004217	0.1124	0.013149	-0.0093	0.000535
6 1/2	0.4	0.004217	0.2046	0.013149	-0.0079	0.000535
6 2/2	0.3999	0.004217	0.1399	0.013149	-0.0082	0.000535
6 3/2	0.4003	0.004217	0.1081	0.013149	-0.0071	0.000535
7 1/2	- 0.0358	0.004217	0.354	0.013149	-0.0124	0.000535
7 2/2	- 0.0357	0.004217	0.3426	0.013149	-0.0094	0.000535
7 3/2	- 0.036	0.004217	0.3334	0.013149	-0.0095	0.000535
8 1/2	0.2839	0.004217	0.204	0.013149	-0.0081	0.000535
8 2/2	0.2836	0.004217	0.1453	0.013149	-0.0079	0.000535
8 3/2	0.2838	0.004217	0.1068	0.013149	-0.0077	0.000535
COVSTR*METHOD						
1 PROP	0.0963	0.003444	0.3574	0.010736	-0.0047	0.000437
1 DA	0.0963	0.003444	0.3575	0.010736	-0.0048	0.000437
2 PROP	0.3625	0.003444	0.1528	0.010736	-0.0064	0.000437
2 DA	0.3625	0.003444	0.1528	0.010736	-0.0065	0.000437
3 PROP	0.075	0.003444	0.4132	0.010736	-0.0077	0.000437
3 DA	0.075	0.003444	0.4131	0.010736	-0.0082	0.000437
4 PROP	0.0802	0.003444	0.4513	0.010736	-0.0054	0.000437
4 DA	0.0802	0.003444	0.4514	0.010736	-0.0055	0.000437
5 PROP	0.3413	0.003444	0.1524	0.010736	-0.009	0.000437
5 DA	0.3413	0.003444	0.1525	0.010736	-0.0094	0.000437
6 PROP	0.4001	0.003444	0.1509	0.010736	-0.0076	0.000437
6 DA	0.4	0.003444	0.1509	0.010736	-0.0079	0.000437
7 PROP	- 0.0358	0.003444	0.3434	0.010736	-0.01	0.000437
7 DA	- 0.0358	0.003444	0.3432	0.010736	-0.0108	0.000437
8 PROP	0.2838	0.003444	0.1521	0.010736	-0.0078	0.000437
8 DA	0.2838	0.003444	0.1519	0.010736	-0.0079	0.000437
COVSTR*NSTRATA						
1 5	0.0968	0.003444	0.3514	0.010736	-0.0044	0.000437
1 7	0.0957	0.003444	0.3635	0.010736	-0.0051	0.000437
2 5	0.3637	0.003444	0.1125	0.010736	-0.0061	0.000437
2 7	0.3612	0.003444	0.1931	0.010736	-0.0068	0.000437
3 5	0.0759	0.003444	0.4032	0.010736	-0.0068	0.000437
3 7	0.0742	0.003444	0.4231	0.010736	-0.009	0.000437
4 5	0.0807	0.003444	0.4405	0.010736	-0.005	0.000437
4 7	0.0797	0.003444	0.4622	0.010736	-0.006	0.000437
5 5	0.3429	0.003444	0.111	0.010736	-0.0082	0.000437
5 7	0.3396	0.003444	0.194	0.010736	-0.0102	0.000437
6 5	0.4001	0.003444	0.1097	0.010736	-0.0068	0.000437
6 7	0.4	0.003444	0.1921	0.010736	-0.0086	0.000437
7 5	- 0.032	0.003444	0.338	0.010736	-0.0093	0.000437
7 7	- 0.0396	0.003444	0.3486	0.010736	-0.0116	0.000437
8 5	0.2868	0.003444	0.1108	0.010736	-0.0071	0.000437
8 7	0.2807	0.003444	0.1933	0.010736	-0.0086	0.000437

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*OBSERVED						
1 A	0.0843	0.00487	0.4617	0.015183	-0.0055	0.000618
1 X1	0.1322	0.00487	0.0465	0.015183	-0.0003	0.000618
1 X2	0.0844	0.00487	0.4601	0.015183	-0.0059	0.000618
1 X1X2	0.0842	0.00487	0.4616	0.015183	-0.0073	0.000618
2 A	0.2988	0.00487	0.2041	0.015183	-0.0038	0.000618
2 X1	0.5537	0.00487	0	0.015183	-0.0002	0.000618
2 X2	0.2989	0.00487	0.204	0.015183	-0.0102	0.000618
2 X1X2	0.2985	0.00487	0.2032	0.015183	-0.0116	0.000618
3 A	0.0845	0.00487	0.4631	0.015183	-0.0055	0.000618
3 X1	0.0471	0.00487	0.2724	0.015183	-0.0072	0.000618
3 X2	0.0846	0.00487	0.4622	0.015183	-0.006	0.000618
3 X1X2	0.0839	0.00487	0.4548	0.015183	-0.013	0.000618
4 A	0.0842	0.00487	0.4584	0.015183	-0.0059	0.000618
4 X1	0.068	0.00487	0.4301	0.015183	-0.0017	0.000618
4 X2	0.0843	0.00487	0.4574	0.015183	-0.0064	0.000618
4 X1X2	0.0842	0.00487	0.4595	0.015183	-0.008	0.000618
5 A	0.2987	0.00487	0.2026	0.015183	-0.0037	0.000618
5 X1	0.4691	0.00487	0	0.015183	-0.0077	0.000618
5 X2	0.2988	0.00487	0.2058	0.015183	-0.0101	0.000618
5 X1X2	0.2984	0.00487	0.2015	0.015183	-0.0153	0.000618
6 A	0.2989	0.00487	0.2014	0.015183	-0.0038	0.000618
6 X1	0.7036	0.00487	0	0.015183	-0.0016	0.000618
6 X2	0.2991	0.00487	0.2005	0.015183	-0.01	0.000618
6 X1X2	0.2987	0.00487	0.2017	0.015183	-0.0154	0.000618
7 A	0.0845	0.00487	0.4626	0.015183	-0.006	0.000618
7 X1	- 0.3966	0.00487	0	0.015183	-0.0123	0.000618
7 X2	0.0845	0.00487	0.4598	0.015183	-0.0066	0.000618
7 X1X2	0.0843	0.00487	0.4509	0.015183	-0.0168	0.000618
8 A	0.2987	0.00487	0.2044	0.015183	-0.0038	0.000618
8 X1	0.2393	0.00487	0.0015	0.015183	-0.0052	0.000618
8 X2	0.2987	0.00487	0.2008	0.015183	-0.0102	0.000618
8 X1X2	0.2984	0.00487	0.2014	0.015183	-0.0123	0.000618
COVSTR*SITAVIO2						
1 N	0.0345	0.003444	0.7094	0.010736	-0.0001	0.000437
1 Y	0.158	0.003444	0.0055	0.010736	-0.0094	0.000437
2 N	0.1387	0.003444	0.3056	0.010736	-0.0033	0.000437
2 Y	0.5863	0.003444	0	0.010736	-0.0096	0.000437
3 N	0.0183	0.003444	0.7791	0.010736	-0.0021	0.000437
3 Y	0.1318	0.003444	0.0472	0.010736	-0.0137	0.000437
4 N	0.0204	0.003444	0.8127	0.010736	-0.0009	0.000437
4 Y	0.1399	0.003444	0.09	0.010736	-0.0101	0.000437
5 N	0.1225	0.003444	0.3049	0.010736	-0.005	0.000437
5 Y	0.56	0.003444	0.0001	0.010736	-0.0134	0.000437
6 N	0.1421	0.003444	0.3016	0.010736	-0.0032	0.000437
6 Y	0.658	0.003444	0.0001	0.010736	-0.0122	0.000437
7 N	- 0.0505	0.003444	0.6831	0.010736	-0.0032	0.000437
7 Y	- 0.0212	0.003444	0.0035	0.010736	-0.0176	0.000437
8 N	0.0712	0.003444	0.304	0.010736	-0.0046	0.000437
8 Y	0.4964	0.003444	0.0001	0.010736	-0.0111	0.000437
SSIZE*KNRATIO						
1000 1/2	0.2003	0.002109	0.3744	0.006574	-0.0126	0.000268
1000 2/2	0.2003	0.002109	0.3269	0.006574	-0.0107	0.000268
1000 3/2	0.2005	0.002109	0.2965	0.006574	-0.0097	0.000268
5000 1/2	0.2006	0.002109	0.2515	0.006574	-0.0042	0.000268
5000 2/2	0.2004	0.002109	0.2018	0.006574	-0.0039	0.000268
5000 3/2	0.2004	0.002109	0.179	0.006574	-0.0038	0.000268
SSIZE*METHOD						
1000 PROP	0.2004	0.001722	0.3326	0.005368	-0.0107	0.000219
1000 DA	0.2003	0.001722	0.3326	0.005368	-0.0112	0.000219
5000 PROP	0.2004	0.001722	0.2108	0.005368	-0.0039	0.000219
5000 DA	0.2005	0.001722	0.2107	0.005368	-0.004	0.000219
SSIZE*NSTRATA						
1000 5	0.2019	0.001722	0.3111	0.005368	-0.0097	0.000219
1000 7	0.1988	0.001722	0.3541	0.005368	-0.0123	0.000219
5000 5	0.2018	0.001722	0.1832	0.005368	-0.0038	0.000219
5000 7	0.1991	0.001722	0.2383	0.005368	-0.0042	0.000219

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
SSIZE*OBSERVED						
1000 A	0.1916	0.002435	0.3984	0.007591	-0.0066	0.000309
1000 X1	0.2271	0.002435	0.1543	0.007591	-0.0064	0.000309
1000 X2	0.1917	0.002435	0.3903	0.007591	-0.0113	0.000309
1000 X1X2	0.191	0.002435	0.3875	0.007591	-0.0197	0.000309
5000 A	0.1916	0.002435	0.2662	0.007591	-0.0029	0.000309
5000 X1	0.227	0.002435	0.0334	0.007591	-0.0027	0.000309
5000 X2	0.1916	0.002435	0.2724	0.007591	-0.0051	0.000309
5000 X1X2	0.1916	0.002435	0.2712	0.007591	-0.0052	0.000309
SSIZE*SITAVIO2						
1000 N	0.0623	0.001722	0.6322	0.005368	-0.0039	0.000219
1000 Y	0.3384	0.001722	0.033	0.005368	-0.0181	0.000219
5000 N	0.062	0.001722	0.4179	0.005368	-0.0017	0.000219
5000 Y	0.3389	0.001722	0.0036	0.005368	-0.0062	0.000219
KNRATIO*METHOD						
1/2 PROP	0.2004	0.002109	0.313	0.006574	-0.0082	0.000268
1/2 DA	0.2004	0.002109	0.313	0.006574	-0.0086	0.000268
2/2 PROP	0.2003	0.002109	0.2643	0.006574	-0.0071	0.000268
2/2 DA	0.2003	0.002109	0.2643	0.006574	-0.0074	0.000268
3/2 PROP	0.2004	0.002109	0.2378	0.006574	-0.0067	0.000268
3/2 DA	0.2004	0.002109	0.2378	0.006574	-0.0069	0.000268
KNRATIO*NSTRATA						
1/2 5	0.202	0.002109	0.2884	0.006574	-0.0075	0.000268
1/2 7	0.1989	0.002109	0.3376	0.006574	-0.0092	0.000268
2/2 5	0.2018	0.002109	0.2385	0.006574	-0.0064	0.000268
2/2 7	0.1989	0.002109	0.2902	0.006574	-0.0082	0.000268
3/2 5	0.2018	0.002109	0.2146	0.006574	-0.0063	0.000268
3/2 7	0.1991	0.002109	0.261	0.006574	-0.0073	0.000268
KNRATIO*OBSERVED						
1/2 A	0.1916	0.002982	0.3737	0.009297	-0.0063	0.000378
1/2 X1	0.2271	0.002982	0.135	0.009297	-0.0041	0.000378
1/2 X2	0.1917	0.002982	0.3703	0.009297	-0.0089	0.000378
1/2 X1X2	0.1912	0.002982	0.3728	0.009297	-0.0143	0.000378
2/2 A	0.1916	0.002982	0.3258	0.009297	-0.0045	0.000378
2/2 X1	0.227	0.002982	0.0861	0.009297	-0.0046	0.000378
2/2 X2	0.1916	0.002982	0.3239	0.009297	-0.008	0.000378
2/2 X1X2	0.1912	0.002982	0.3215	0.009297	-0.0121	0.000378
3/2 A	0.1915	0.002982	0.2972	0.009297	-0.0035	0.000378
3/2 X1	0.2271	0.002982	0.0603	0.009297	-0.0049	0.000378
3/2 X2	0.1916	0.002982	0.2998	0.009297	-0.0076	0.000378
3/2 X1X2	0.1915	0.002982	0.2937	0.009297	-0.011	0.000378
KNRATIO*SITAVIO2						
1/2 N	0.0624	0.002109	0.5962	0.006574	-0.002	0.000268
1/2 Y	0.3385	0.002109	0.0297	0.006574	-0.0148	0.000268
2/2 N	0.062	0.002109	0.5135	0.006574	-0.003	0.000268
2/2 Y	0.3387	0.002109	0.0151	0.006574	-0.0116	0.000268
3/2 N	0.062	0.002109	0.4654	0.006574	-0.0035	0.000268
3/2 Y	0.3389	0.002109	0.0101	0.006574	-0.01	0.000268
METHOD*NSTRATA						
PROP 5	0.2019	0.001722	0.2471	0.005368	-0.0066	0.000219
PROP 7	0.1989	0.001722	0.2962	0.005368	-0.0081	0.000219
DA 5	0.2019	0.001722	0.2471	0.005368	-0.0068	0.000219
DA 7	0.1989	0.001722	0.2962	0.005368	-0.0084	0.000219
METHOD*OBSERVED						
PROP A	0.1916	0.002435	0.3323	0.007591	-0.0047	0.000309
PROP X1	0.227	0.002435	0.0938	0.007591	-0.0045	0.000309
PROP X2	0.1917	0.002435	0.3313	0.007591	-0.0082	0.000309
PROP X1X2	0.1913	0.002435	0.3294	0.007591	-0.0119	0.000309
DA A	0.1916	0.002435	0.3323	0.007591	-0.0047	0.000309
DA X1	0.227	0.002435	0.0938	0.007591	-0.0045	0.000309
DA X2	0.1917	0.002435	0.3313	0.007591	-0.0082	0.000309
DA X1X2	0.1913	0.002435	0.3293	0.007591	-0.013	0.000309
METHOD*SITAVIO2						
PROP N	0.0621	0.001722	0.5251	0.005368	-0.0028	0.000219
PROP Y	0.3387	0.001722	0.0183	0.005368	-0.0119	0.000219
DA N	0.0621	0.001722	0.525	0.005368	-0.0028	0.000219
DA Y	0.3387	0.001722	0.0184	0.005368	-0.0124	0.000219

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
NSTRATA*OBSERVED						
5 A	0.1924	0.002435	0.3002	0.007591	-0.0046	0.000309
5 X1	0.2301	0.002435	0.088	0.007591	-0.0042	0.000309
5 X2	0.1925	0.002435	0.3015	0.007591	-0.0078	0.000309
5 X1X2	0.1924	0.002435	0.2988	0.007591	-0.0103	0.000309
7 A	0.1908	0.002435	0.3643	0.007591	-0.0049	0.000309
7 X1	0.224	0.002435	0.0996	0.007591	-0.0049	0.000309
7 X2	0.1908	0.002435	0.3612	0.007591	-0.0085	0.000309
7 X1X2	0.1902	0.002435	0.3598	0.007591	-0.0147	0.000309
NSTRATA*SITAVIO2						
5 N	0.0672	0.001722	0.4776	0.005368	-0.0027	0.000219
5 Y	0.3365	0.001722	0.0167	0.005368	-0.0108	0.000219
7 N	0.0571	0.001722	0.5725	0.005368	-0.0029	0.000219
7 Y	0.3408	0.001722	0.02	0.005368	-0.0135	0.000219
OBSERVED*SITAVIO2						
A N	0.0284	0.002435	0.6625	0.007591	-0.0001	0.000309
A Y	0.3548	0.002435	0.002	0.007591	-0.0094	0.000309
X1 N	0.163	0.002435	0.1218	0.007591	-0.004	0.000309
X1 Y	0.2911	0.002435	0.0658	0.007591	-0.0051	0.000309
X2 N	0.0285	0.002435	0.6602	0.007591	-0.0033	0.000309
X2 Y	0.3548	0.002435	0.0025	0.007591	-0.013	0.000309
X1X2 N	0.0287	0.002435	0.6557	0.007591	-0.0038	0.000309
X1X2 Y	0.354	0.002435	0.003	0.007591	-0.0211	0.000309

Table XXV: Case 6: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	39.9134	39.9134	5.7019	19000	0
SSIZE	1	0.0001	0.0001	0.0001	0.22	0.638
KNRATIO	2	0	0	0	0.03	0.969
METHOD	1	0.0002	0.0002	0.0002	0.83	0.363
NSTRATA	1	0.002	0.002	0.002	6.59	0.01
OBSERVED	2	0.0007	0.0007	0.0003	1.12	0.326
SITAVIO1	2	5.6178	5.6178	2.8089	9367.36	0
SITAVIO2	1	90.4821	90.4821	90.4821	300000	0
COVSTR*SSIZE	7	0.0001	0.0001	0	0.03	1
COVSTR*KNRATIO	14	0.0002	0.0002	0	0.05	1
COVSTR*METHOD	7	0	0	0	0.02	1
COVSTR*NSTRATA	7	0.0016	0.0016	0.0002	0.77	0.616
COVSTR*OBSERVED	14	0.0009	0.0009	0.0001	0.22	0.999
COVSTR*SITAVIO1	14	2.3635	2.3635	0.1688	563.01	0
COVSTR*SITAVIO2	7	29.2406	29.2406	4.1772	14000	0
SSIZE*KNRATIO	2	0	0	0	0.04	0.964
SSIZE*METHOD	1	0	0	0	0	0.983
SSIZE*NSTRATA	1	0	0	0	0.12	0.734
SSIZE*OBSERVED	2	0.0002	0.0002	0.0001	0.38	0.686
SSIZE*SITAVIO1	2	0.0001	0.0001	0	0.16	0.853
SSIZE*SITAVIO2	1	0.0003	0.0003	0.0003	0.9	0.343
KNRATIO*METHOD	2	0	0	0	0	0.999
KNRATIO*NSTRATA	2	0	0	0	0.08	0.924
KNRATIO*OBSERVED	4	0	0	0	0.01	1
KNRATIO*SITAVIO1	4	0.0002	0.0002	0	0.16	0.959
KNRATIO*SITAVIO2	2	0	0	0	0.01	0.987
METHOD*NSTRATA	1	0	0	0	0	0.947
METHOD*OBSERVED	2	0.0005	0.0005	0.0003	0.84	0.431
METHOD*SITAVIO1	2	0.0263	0.0263	0.0132	43.88	0
METHOD*SITAVIO2	1	0.0007	0.0007	0.0007	2.43	0.119
NSTRATA*OBSERVED	2	0	0	0	0.05	0.951
NSTRATA*SITAVIO1	2	0.0026	0.0026	0.0013	4.37	0.013
NSTRATA*SITAVIO2	1	0.0848	0.0848	0.0848	282.9	0
OBSERVED*SITAVIO1	4	0.193	0.193	0.0482	160.87	0
OBSERVED*SITAVIO2	2	0.0015	0.0015	0.0008	2.56	0.077
SITAVIO1*SITAVIO2	2	1.1235	1.1235	0.5618	1873.38	0
Error	3326	0.9973	0.9973	0.0003		
Total	3455	170.0545				

Table XXVI: Case 6: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	1.0475	1.0475	0.1496	5.77	0
SSIZE	1	14.5913	14.5913	14.5913	562.58	0
KNRATIO	2	5.2611	5.2611	2.6305	101.42	0
METHOD	1	0.0037	0.0037	0.0037	0.14	0.705
NSTRATA	1	1.2097	1.2097	1.2097	46.64	0
OBSERVED	2	0.4893	0.4893	0.2446	9.43	0
SITAVIO1	2	32.4351	32.4351	16.2176	625.28	0
SITAVIO2	1	168.0347	168.0347	168.0347	6478.71	0
COVSTR*SSIZE	7	0.1115	0.1115	0.0159	0.61	0.745
COVSTR*KNRATIO	14	0.0077	0.0077	0.0005	0.02	1
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.7806	0.7806	0.1115	4.3	0
COVSTR*OBSERVED	14	3.6907	3.6907	0.2636	10.16	0
COVSTR*SITAVIO1	14	37.6806	37.6806	2.6915	103.77	0
COVSTR*SITAVIO2	7	1.515	1.515	0.2164	8.34	0
SSIZE*KNRATIO	2	1.0437	1.0437	0.5218	20.12	0
SSIZE*METHOD	1	0.0048	0.0048	0.0048	0.18	0.668
SSIZE*NSTRATA	1	0.0012	0.0012	0.0012	0.05	0.831
SSIZE*OBSERVED	2	0.0964	0.0964	0.0482	1.86	0.156
SSIZE*SITAVIO1	2	0.0443	0.0443	0.0221	0.85	0.426
SSIZE*SITAVIO2	1	10.7759	10.7759	10.7759	415.48	0
KNRATIO*METHOD	2	0.001	0.001	0.0005	0.02	0.98
KNRATIO*NSTRATA	2	0.0029	0.0029	0.0014	0.06	0.946
KNRATIO*OBSERVED	4	0.0168	0.0168	0.0042	0.16	0.958
KNRATIO*SITAVIO1	4	0.111	0.111	0.0278	1.07	0.369
KNRATIO*SITAVIO2	2	3.472	3.472	1.736	66.93	0
METHOD*NSTRATA	1	0.0005	0.0005	0.0005	0.02	0.893
METHOD*OBSERVED	2	0.0067	0.0067	0.0034	0.13	0.878
METHOD*SITAVIO1	2	0.0095	0.0095	0.0047	0.18	0.833
METHOD*SITAVIO2	1	0.0001	0.0001	0.0001	0	0.944
NSTRATA*OBSERVED	2	0.0006	0.0006	0.0003	0.01	0.988
NSTRATA*SITAVIO1	2	0.3405	0.3405	0.1703	6.56	0.001
NSTRATA*SITAVIO2	1	1.289	1.289	1.289	49.7	0
OBSERVED*SITAVIO1	4	1.7184	1.7184	0.4296	16.56	0
OBSERVED*SITAVIO2	2	0.5538	0.5538	0.2769	10.68	0
SITAVIO1*SITAVIO2	2	30.9105	30.9105	15.4553	595.89	0
Error	3326	86.2646	86.2646	0.0259		
Total	3455	403.5225				

Table XXVII: Case 6: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.019602	0.019602	0.0028003	45.25	0
SSIZE	1	0.054482	0.054482	0.054482	880.39	0
KNRATIO	2	0.0049554	0.0049554	0.0024777	40.04	0
METHOD	1	0.0004209	0.0004209	0.0004209	6.8	0.009
NSTRATA	1	0.0097575	0.0097575	0.0097575	157.67	0
OBSERVED	2	0.12524	0.12524	0.06262	1011.9	0
SITAVIO1	2	0.0083264	0.0083264	0.0041632	67.27	0
SITAVIO2	1	0.22985	0.22985	0.22985	3714.23	0
COVSTR*SSIZE	7	0.0032631	0.0032631	0.0004662	7.53	0
COVSTR*KNRATIO	14	0.0012491	0.0012491	8.92e-005	1.44	0.125
COVSTR*METHOD	7	0.0001753	0.0001753	2.5e-005	0.4	0.9
COVSTR*NSTRATA	7	0.0025741	0.0025741	0.0003677	5.94	0
COVSTR*OBSERVED	14	0.045216	0.045216	0.0032297	52.19	0
COVSTR*SITAVIO1	14	0.0091868	0.0091868	0.0006562	10.6	0
COVSTR*SITAVIO2	7	0.025253	0.025253	0.0036076	58.3	0
SSIZE*KNRATIO	2	0.0004613	0.0004613	0.0002307	3.73	0.024
SSIZE*METHOD	1	9.2e-006	9.2e-006	9.2e-006	0.15	0.699
SSIZE*NSTRATA	1	3.8e-006	3.8e-006	3.8e-006	0.06	0.805
SSIZE*OBSERVED	2	0.014808	0.014808	0.0074038	119.64	0
SSIZE*SITAVIO1	2	0.000557	0.000557	0.0002785	4.5	0.011
SSIZE*SITAVIO2	1	0.028901	0.028901	0.028901	467.02	0
KNRATIO*METHOD	2	1.5e-006	1.5e-006	7e-007	0.01	0.988
KNRATIO*NSTRATA	2	2.76e-005	2.76e-005	1.38e-005	0.22	0.8
KNRATIO*OBSERVED	4	0.0007538	0.0007538	0.0001885	3.05	0.016
KNRATIO*SITAVIO1	4	0.00011	0.00011	2.75e-005	0.44	0.776
KNRATIO*SITAVIO2	2	0.0099414	0.0099414	0.0049707	80.32	0
METHOD*NSTRATA	1	8e-006	8e-006	8e-006	0.13	0.719
METHOD*OBSERVED	2	0.000842	0.000842	0.000421	6.8	0.001
METHOD*SITAVIO1	2	5.17e-005	5.17e-005	2.58e-005	0.42	0.659
METHOD*SITAVIO2	1	0.0003675	0.0003675	0.0003675	5.94	0.015
NSTRATA*OBSERVED	2	0.013668	0.013668	0.0068341	110.43	0
NSTRATA*SITAVIO1	2	0.0010969	0.0010969	0.0005485	8.86	0
NSTRATA*SITAVIO2	1	0.0078378	0.0078378	0.0078378	126.65	0
OBSERVED*SITAVIO1	4	0.015845	0.015845	0.0039613	64.01	0
OBSERVED*SITAVIO2	2	0.081579	0.081579	0.04079	659.13	0
SITAVIO1*SITAVIO2	2	0.0080073	0.0080073	0.0040037	64.7	0
Error	3326	0.20583	0.20583	6.19e-005		
Total	3455	0.93026				

Table XXVIII: Case 6: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.08354	0.000833	0.21608	0.007748	-0.00868	0.000378
2	0.29838	0.000833	0.23503	0.007748	-0.01002	0.000378
3	0.08427	0.000833	0.26958	0.007748	-0.01425	0.000378
4	0.08353	0.000833	0.20855	0.007748	-0.00703	0.000378
5	0.29875	0.000833	0.232	0.007748	-0.01412	0.000378
6	0.29883	0.000833	0.21692	0.007748	-0.01094	0.000378
7	0.08376	0.000833	0.22954	0.007748	-0.01114	0.000378
8	0.29887	0.000833	0.23197	0.007748	-0.00904	0.000378
SSIZE						
1000	0.1911	0.000417	0.29494	0.003874	-0.01462	0.000189
5000	0.19138	0.000417	0.16498	0.003874	-0.00668	0.000189
KNRATIO						
1/2	0.19116	0.00051	0.28201	0.004745	-0.01224	0.000232
2/2	0.19124	0.00051	0.2198	0.004745	-0.01038	0.000232
3/2	0.19134	0.00051	0.18807	0.004745	-0.00934	0.000232
METHOD						
PROP	0.19151	0.000417	0.22892	0.003874	-0.01031	0.000189
DA	0.19097	0.000417	0.231	0.003874	-0.011	0.000189
NSTRATA						
5	0.192	0.000417	0.21125	0.003874	-0.00897	0.000189
7	0.19049	0.000417	0.24867	0.003874	-0.01233	0.000189
OBSERVED						
A	0.19185	0.00051	0.22259	0.004745	-0.0048	0.000232
X2	0.19107	0.00051	0.22054	0.004745	-0.00823	0.000232
X1X2	0.19081	0.00051	0.24674	0.004745	-0.01894	0.000232
SITAVIO1						
- RHO14	0.24048	0.00051	0.0993	0.004745	-0.01162	0.000232
0	0.19152	0.00051	0.33098	0.004745	-0.00846	0.000232
RHO14	0.14173	0.00051	0.2596	0.004745	-0.01188	0.000232
SITAVIO2						
N	0.02944	0.000417	0.45046	0.003874	-0.0025	0.000189
Y	0.35305	0.000417	0.00946	0.003874	-0.01881	0.000189
COVSTR*SSIZE						
1 1000	0.08335	0.001178	0.27922	0.010958	-0.01139	0.000535
1 5000	0.08373	0.001178	0.15294	0.010958	-0.00597	0.000535
2 1000	0.2982	0.001178	0.30234	0.010958	-0.01338	0.000535
2 5000	0.29857	0.001178	0.16771	0.010958	-0.00666	0.000535
3 1000	0.08405	0.001178	0.32386	0.010958	-0.01807	0.000535
3 5000	0.0845	0.001178	0.2153	0.010958	-0.01044	0.000535
4 1000	0.08355	0.001178	0.26655	0.010958	-0.01025	0.000535
4 5000	0.08352	0.001178	0.15056	0.010958	-0.0038	0.000535
5 1000	0.29834	0.001178	0.30114	0.010958	-0.01802	0.000535
5 5000	0.29916	0.001178	0.16286	0.010958	-0.01022	0.000535
6 1000	0.29876	0.001178	0.28573	0.010958	-0.01588	0.000535
6 5000	0.29891	0.001178	0.14811	0.010958	-0.00601	0.000535
7 1000	0.08372	0.001178	0.29666	0.010958	-0.01713	0.000535
7 5000	0.08381	0.001178	0.16243	0.010958	-0.00516	0.000535
8 1000	0.29888	0.001178	0.30397	0.010958	-0.01289	0.000535
8 5000	0.29885	0.001178	0.15996	0.010958	-0.0052	0.000535

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*KNRATIO						
1 1/2	0.08312	0.001443	0.26891	0.013421	-0.01066	0.000656
1 2/2	0.08379	0.001443	0.20386	0.013421	-0.00826	0.000656
1 3/2	0.08371	0.001443	0.17546	0.013421	-0.00712	0.000656
2 1/2	0.29817	0.001443	0.2839	0.013421	-0.01092	0.000656
2 2/2	0.29842	0.001443	0.22725	0.013421	-0.0096	0.000656
2 3/2	0.29856	0.001443	0.19392	0.013421	-0.00955	0.000656
3 1/2	0.08434	0.001443	0.3206	0.013421	-0.0165	0.000656
3 2/2	0.08421	0.001443	0.25993	0.013421	-0.01402	0.000656
3 3/2	0.08428	0.001443	0.22821	0.013421	-0.01225	0.000656
4 1/2	0.08395	0.001443	0.26081	0.013421	-0.00939	0.000656
4 2/2	0.08289	0.001443	0.19934	0.013421	-0.00667	0.000656
4 3/2	0.08376	0.001443	0.16551	0.013421	-0.00502	0.000656
5 1/2	0.29849	0.001443	0.28427	0.013421	-0.01494	0.000656
5 2/2	0.29896	0.001443	0.22063	0.013421	-0.01419	0.000656
5 3/2	0.2988	0.001443	0.1911	0.013421	-0.01323	0.000656
6 1/2	0.29853	0.001443	0.26905	0.013421	-0.01199	0.000656
6 2/2	0.29879	0.001443	0.20701	0.013421	-0.01126	0.000656
6 3/2	0.29917	0.001443	0.1747	0.013421	-0.00958	0.000656
7 1/2	0.08356	0.001443	0.28483	0.013421	-0.01385	0.000656
7 2/2	0.0841	0.001443	0.21669	0.013421	-0.01024	0.000656
7 3/2	0.08364	0.001443	0.18711	0.013421	-0.00934	0.000656
8 1/2	0.29909	0.001443	0.28368	0.013421	-0.00966	0.000656
8 2/2	0.29874	0.001443	0.22368	0.013421	-0.00883	0.000656
8 3/2	0.29878	0.001443	0.18853	0.013421	-0.00864	0.000656
COVSTR*METHOD						
1 PROP	0.08371	0.001178	0.21494	0.010958	-0.00843	0.000535
1 DA	0.08337	0.001178	0.21721	0.010958	-0.00893	0.000535
2 PROP	0.2988	0.001178	0.234	0.010958	-0.00988	0.000535
2 DA	0.29796	0.001178	0.23606	0.010958	-0.01017	0.000535
3 PROP	0.08439	0.001178	0.26865	0.010958	-0.01359	0.000535
3 DA	0.08415	0.001178	0.2705	0.010958	-0.01492	0.000535
4 PROP	0.08372	0.001178	0.20757	0.010958	-0.00691	0.000535
4 DA	0.08334	0.001178	0.20953	0.010958	-0.00714	0.000535
5 PROP	0.2991	0.001178	0.23093	0.010958	-0.01362	0.000535
5 DA	0.2984	0.001178	0.23307	0.010958	-0.01463	0.000535
6 PROP	0.29922	0.001178	0.21586	0.010958	-0.01065	0.000535
6 DA	0.29845	0.001178	0.21798	0.010958	-0.01124	0.000535
7 PROP	0.08392	0.001178	0.22843	0.010958	-0.01045	0.000535
7 DA	0.08361	0.001178	0.23066	0.010958	-0.01184	0.000535
8 PROP	0.29922	0.001178	0.23097	0.010958	-0.00892	0.000535
8 DA	0.29851	0.001178	0.23296	0.010958	-0.00916	0.000535
COVSTR*NSTRATA						
1 5	0.08396	0.001178	0.21211	0.010958	-0.00732	0.000535
1 7	0.08312	0.001178	0.22004	0.010958	-0.01004	0.000535
2 5	0.30002	0.001178	0.199	0.010958	-0.00896	0.000535
2 7	0.29675	0.001178	0.27105	0.010958	-0.01108	0.000535
3 5	0.08409	0.001178	0.26452	0.010958	-0.01088	0.000535
3 7	0.08446	0.001178	0.27464	0.010958	-0.01763	0.000535
4 5	0.08363	0.001178	0.20472	0.010958	-0.00637	0.000535
4 7	0.08343	0.001178	0.21238	0.010958	-0.00768	0.000535
5 5	0.30013	0.001178	0.19597	0.010958	-0.01156	0.000535
5 7	0.29737	0.001178	0.26803	0.010958	-0.01669	0.000535
6 5	0.30019	0.001178	0.19337	0.010958	-0.0095	0.000535
6 7	0.29748	0.001178	0.24047	0.010958	-0.01239	0.000535
7 5	0.08382	0.001178	0.22554	0.010958	-0.00909	0.000535
7 7	0.08371	0.001178	0.23355	0.010958	-0.01319	0.000535
8 5	0.30015	0.001178	0.19475	0.010958	-0.00812	0.000535
8 7	0.29759	0.001178	0.26918	0.010958	-0.00997	0.000535

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*OBSERVED						
1 A	0.08393	0.001443	0.20417	0.013421	-0.00576	0.000656
1 X2	0.08339	0.001443	0.20872	0.013421	-0.00622	0.000656
1 X1X2	0.0833	0.001443	0.23533	0.013421	-0.01405	0.000656
2 A	0.29975	0.001443	0.24024	0.013421	-0.00389	0.000656
2 X2	0.29875	0.001443	0.23211	0.013421	-0.01028	0.000656
2 X1X2	0.29665	0.001443	0.23273	0.013421	-0.0159	0.000656
3 A	0.08413	0.001443	0.20623	0.013421	-0.00567	0.000656
3 X2	0.08354	0.001443	0.20993	0.013421	-0.00613	0.000656
3 X1X2	0.08514	0.001443	0.39258	0.013421	-0.03096	0.000656
4 A	0.08394	0.001443	0.20419	0.013421	-0.00589	0.000656
4 X2	0.08343	0.001443	0.20806	0.013421	-0.00639	0.000656
4 X1X2	0.08322	0.001443	0.21342	0.013421	-0.0088	0.000656
5 A	0.2995	0.001443	0.2404	0.013421	-0.00381	0.000656
5 X2	0.29842	0.001443	0.23325	0.013421	-0.01009	0.000656
5 X1X2	0.29833	0.001443	0.22235	0.013421	-0.02846	0.000656
6 A	0.2998	0.001443	0.23991	0.013421	-0.00376	0.000656
6 X2	0.29893	0.001443	0.23249	0.013421	-0.01009	0.000656
6 X1X2	0.29776	0.001443	0.17837	0.013421	-0.01898	0.000656
7 A	0.08402	0.001443	0.20466	0.013421	-0.0058	0.000656
7 X2	0.08346	0.001443	0.20894	0.013421	-0.00633	0.000656
7 X1X2	0.08381	0.001443	0.27503	0.013421	-0.0213	0.000656
8 A	0.2997	0.001443	0.24094	0.013421	-0.00384	0.000656
8 X2	0.29868	0.001443	0.23081	0.013421	-0.01026	0.000656
8 X1X2	0.29823	0.001443	0.22415	0.013421	-0.01303	0.000656
COVSTR*SITAVIO1						
1 - RHO14	0.16861	0.001443	0.07388	0.013421	-0.00938	0.000656
1 0	0.0843	0.001443	0.46113	0.013421	-0.00623	0.000656
1 RHO14	- 0.0023	0.001443	0.11322	0.013421	-0.01042	0.000656
2 - RHO14	0.31984	0.001443	0.08627	0.013421	-0.01039	0.000656
2 0	0.29874	0.001443	0.20374	0.013421	-0.00853	0.000656
2 RHO14	0.27658	0.001443	0.41507	0.013421	-0.01115	0.000656
3 - RHO14	0.15065	0.001443	0.14192	0.013421	-0.01643	0.000656
3 0	0.08431	0.001443	0.46003	0.013421	-0.00817	0.000656
3 RHO14	0.01786	0.001443	0.20678	0.013421	-0.01816	0.000656
4 - RHO14	0.17289	0.001443	0.06448	0.013421	-0.00717	0.000656
4 0	0.08424	0.001443	0.45844	0.013421	-0.00676	0.000656
4 RHO14	- 0.00653	0.001443	0.10274	0.013421	-0.00714	0.000656
5 - RHO14	0.30171	0.001443	0.17615	0.013421	-0.01843	0.000656
5 0	0.29864	0.001443	0.20331	0.013421	-0.00971	0.000656
5 RHO14	0.29589	0.001443	0.31655	0.013421	-0.01423	0.000656
6 - RHO14	0.33003	0.001443	0.06788	0.013421	-0.00955	0.000656
6 0	0.29888	0.001443	0.20118	0.013421	-0.00976	0.000656
6 RHO14	0.26759	0.001443	0.3817	0.013421	-0.01353	0.000656
7 - RHO14	0.16168	0.001443	0.09256	0.013421	-0.01201	0.000656
7 0	0.08443	0.001443	0.45777	0.013421	-0.0098	0.000656
7 RHO14	0.00518	0.001443	0.13831	0.013421	-0.01162	0.000656
8 - RHO14	0.31846	0.001443	0.09126	0.013421	-0.0096	0.000656
8 0	0.2986	0.001443	0.20221	0.013421	-0.00875	0.000656
8 RHO14	0.27954	0.001443	0.40243	0.013421	-0.00877	0.000656
COVSTR*SITAVIO2						
1 N	0.01407	0.001178	0.40987	0.010958	-0.00038	0.000535
1 Y	0.153	0.001178	0.02228	0.010958	-0.01698	0.000535
2 N	0.04515	0.001178	0.47001	0.010958	-0.00424	0.000535
2 Y	0.55162	0.001178	4e-005	0.010958	-0.0158	0.000535
3 N	0.01369	0.001178	0.52407	0.010958	-0.00073	0.000535
3 Y	0.15486	0.001178	0.01508	0.010958	-0.02778	0.000535
4 N	0.01408	0.001178	0.39574	0.010958	-0.0008	0.000535
4 Y	0.15298	0.001178	0.02137	0.010958	-0.01325	0.000535
5 N	0.04445	0.001178	0.46355	0.010958	-0.00419	0.000535
5 Y	0.55305	0.001178	0.00045	0.010958	-0.02406	0.000535
6 N	0.04532	0.001178	0.43358	0.010958	-0.00443	0.000535
6 Y	0.55234	0.001178	0.00026	0.010958	-0.01746	0.000535
7 N	0.01396	0.001178	0.44294	0.010958	-0.00106	0.000535
7 Y	0.15357	0.001178	0.01614	0.010958	-0.02122	0.000535
8 N	0.04476	0.001178	0.46392	0.010958	-0.00416	0.000535
8 Y	0.55298	0.001178	1e-005	0.010958	-0.01393	0.000535

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
SSIZE*KNRATIO						
1000 1/2	0.19096	0.000722	0.36989	0.00671	-0.0167	0.000328
1000 2/2	0.19104	0.000722	0.28102	0.00671	-0.01426	0.000328
1000 3/2	0.19131	0.000722	0.23389	0.00671	-0.01292	0.000328
5000 1/2	0.19135	0.000722	0.19412	0.00671	-0.00778	0.000328
5000 2/2	0.19143	0.000722	0.15858	0.00671	-0.00651	0.000328
5000 3/2	0.19136	0.000722	0.14225	0.00671	-0.00576	0.000328
SSIZE*METHOD						
1000 PROP	0.19138	0.000589	0.29272	0.005479	-0.01422	0.000268
1000 DA	0.19083	0.000589	0.29715	0.005479	-0.01503	0.000268
5000 PROP	0.19164	0.000589	0.16512	0.005479	-0.00639	0.000268
5000 DA	0.19112	0.000589	0.16484	0.005479	-0.00698	0.000268
SSIZE*NSTRATA						
1000 5	0.19196	0.000589	0.27681	0.005479	-0.01291	0.000268
1000 7	0.19025	0.000589	0.31306	0.005479	-0.01634	0.000268
5000 5	0.19204	0.000589	0.14569	0.005479	-0.00504	0.000268
5000 7	0.19073	0.000589	0.18427	0.005479	-0.00833	0.000268
SSIZE*OBSERVED						
1000 A	0.19186	0.000722	0.2831	0.00671	-0.0067	0.000328
1000 X2	0.19114	0.000722	0.28257	0.00671	-0.01145	0.000328
1000 X1X2	0.19031	0.000722	0.31914	0.00671	-0.02573	0.000328
5000 A	0.19183	0.000722	0.16209	0.00671	-0.00291	0.000328
5000 X2	0.19101	0.000722	0.15851	0.00671	-0.005	0.000328
5000 X1X2	0.19131	0.000722	0.17435	0.00671	-0.01214	0.000328
SSIZE*SITAVIO1						
1000 - RHO14	0.24012	0.000722	0.16901	0.00671	-0.01604	0.000328
1000 0	0.19145	0.000722	0.39205	0.00671	-0.01251	0.000328
1000 RHO14	0.14175	0.000722	0.32375	0.00671	-0.01532	0.000328
5000 - RHO14	0.24085	0.000722	0.02958	0.00671	-0.0072	0.000328
5000 0	0.19159	0.000722	0.26991	0.00671	-0.00441	0.000328
5000 RHO14	0.1417	0.000722	0.19545	0.00671	-0.00843	0.000328
SSIZE*SITAVIO2						
1000 N	0.02958	0.000589	0.57128	0.005479	-0.00358	0.000268
1000 Y	0.35263	0.000589	0.01859	0.005479	-0.02567	0.000268
5000 N	0.0293	0.000589	0.32964	0.005479	-0.00142	0.000268
5000 Y	0.35347	0.000589	0.00032	0.005479	-0.01195	0.000268
KNRATIO*METHOD						
1/2 PROP	0.19144	0.000722	0.28031	0.00671	-0.0119	0.000328
1/2 DA	0.19087	0.000722	0.2837	0.00671	-0.01257	0.000328
2/2 PROP	0.19151	0.000722	0.21873	0.00671	-0.01005	0.000328
2/2 DA	0.19097	0.000722	0.22086	0.00671	-0.01072	0.000328
3/2 PROP	0.19159	0.000722	0.18771	0.00671	-0.00896	0.000328
3/2 DA	0.19109	0.000722	0.18843	0.00671	-0.00972	0.000328
KNRATIO*NSTRATA						
1/2 5	0.19208	0.000722	0.26457	0.00671	-0.01055	0.000328
1/2 7	0.19023	0.000722	0.29944	0.00671	-0.01393	0.000328
2/2 5	0.1919	0.000722	0.20029	0.00671	-0.0086	0.000328
2/2 7	0.19057	0.000722	0.23931	0.00671	-0.01217	0.000328
3/2 5	0.19202	0.000722	0.16889	0.00671	-0.00778	0.000328
3/2 7	0.19066	0.000722	0.20725	0.00671	-0.01091	0.000328
KNRATIO*OBSERVED						
1/2 A	0.19183	0.000884	0.27164	0.008218	-0.00639	0.000401
1/2 X2	0.19102	0.000884	0.27195	0.008218	-0.00913	0.000401
1/2 X1X2	0.19061	0.000884	0.30242	0.008218	-0.02119	0.000401
2/2 A	0.19181	0.000884	0.21257	0.008218	-0.00446	0.000401
2/2 X2	0.19107	0.000884	0.21033	0.008218	-0.00795	0.000401
2/2 X1X2	0.19082	0.000884	0.23649	0.008218	-0.01874	0.000401
3/2 A	0.19189	0.000884	0.18356	0.008218	-0.00356	0.000401
3/2 X2	0.19113	0.000884	0.17933	0.008218	-0.0076	0.000401
3/2 X1X2	0.19098	0.000884	0.20132	0.008218	-0.01687	0.000401

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
KNRATIO*SITAVIO1						
1/2 - RHO14	0.23997	0.000884	0.1555	0.008218	-0.01353	0.000401
1/2 0	0.19154	0.000884	0.37227	0.008218	-0.00984	0.000401
1/2 RHO14	0.14195	0.000884	0.31825	0.008218	-0.01335	0.000401
2/2 - RHO14	0.24056	0.000884	0.08704	0.008218	-0.0112	0.000401
2/2 0	0.19146	0.000884	0.32373	0.008218	-0.00819	0.000401
2/2 RHO14	0.14169	0.000884	0.24863	0.008218	-0.01176	0.000401
3/2 - RHO14	0.24092	0.000884	0.05536	0.008218	-0.01013	0.000401
3/2 0	0.19155	0.000884	0.29692	0.008218	-0.00737	0.000401
3/2 RHO14	0.14154	0.000884	0.21192	0.008218	-0.01053	0.000401
KNRATIO*SITAVIO2						
1/2 N	0.0294	0.000722	0.54434	0.00671	-0.00187	0.000328
1/2 Y	0.35291	0.000722	0.01967	0.00671	-0.0226	0.000328
2/2 N	0.02944	0.000722	0.43333	0.00671	-0.00253	0.000328
2/2 Y	0.35303	0.000722	0.00627	0.00671	-0.01824	0.000328
3/2 N	0.02947	0.000722	0.37371	0.00671	-0.0031	0.000328
3/2 Y	0.35321	0.000722	0.00243	0.00671	-0.01559	0.000328
METHOD*NSTRATA						
PROP 5	0.19225	0.000589	0.21058	0.005479	-0.00867	0.000268
PROP 7	0.19077	0.000589	0.24726	0.005479	-0.01194	0.000268
DA 5	0.19175	0.000589	0.21192	0.005479	-0.00927	0.000268
DA 7	0.1902	0.000589	0.25007	0.005479	-0.01273	0.000268
METHOD*OBSERVED						
PROP A	0.19266	0.000722	0.21958	0.00671	-0.0048	0.000328
PROP X2	0.19107	0.000722	0.22054	0.00671	-0.00823	0.000328
PROP X1X2	0.1908	0.000722	0.24664	0.00671	-0.01789	0.000328
DA A	0.19104	0.000722	0.22561	0.00671	-0.0048	0.000328
DA X2	0.19107	0.000722	0.22054	0.00671	-0.00823	0.000328
DA X1X2	0.19081	0.000722	0.24684	0.00671	-0.01998	0.000328
METHOD*SITAVIO1						
PROP - RHO14	0.23751	0.000722	0.09592	0.00671	-0.01122	0.000328
PROP 0	0.19152	0.000722	0.33099	0.00671	-0.00828	0.000328
PROP RHO14	0.1455	0.000722	0.25985	0.00671	-0.01141	0.000328
DA - RHO14	0.24346	0.000722	0.10267	0.00671	-0.01202	0.000328
DA 0	0.19152	0.000722	0.33096	0.00671	-0.00864	0.000328
DA RHO14	0.13795	0.000722	0.25935	0.00671	-0.01234	0.000328
METHOD*SITAVIO2						
PROP N	0.02925	0.000589	0.44961	0.005479	-0.00248	0.000268
PROP Y	0.35378	0.000589	0.00823	0.005479	-0.01813	0.000268
DA N	0.02963	0.000589	0.45131	0.005479	-0.00252	0.000268
DA Y	0.35232	0.000589	0.01069	0.005479	-0.01948	0.000268
NSTRATA*OBSERVED						
5 A	0.1925	0.000722	0.20384	0.00671	-0.0046	0.000328
5 X2	0.19181	0.000722	0.20237	0.00671	-0.00788	0.000328
5 X1X2	0.19169	0.000722	0.22754	0.00671	-0.01444	0.000328
7 A	0.19119	0.000722	0.24134	0.00671	-0.005	0.000328
7 X2	0.19034	0.000722	0.23871	0.00671	-0.00858	0.000328
7 X1X2	0.18993	0.000722	0.26595	0.00671	-0.02343	0.000328
NSTRATA*SITAVIO1						
5 - RHO14	0.24221	0.000722	0.08044	0.00671	-0.00967	0.000328
5 0	0.19245	0.000722	0.30019	0.00671	-0.00757	0.000328
5 RHO14	0.14134	0.000722	0.25312	0.00671	-0.00968	0.000328
7 - RHO14	0.23876	0.000722	0.11816	0.00671	-0.01357	0.000328
7 0	0.19059	0.000722	0.36177	0.00671	-0.00936	0.000328
7 RHO14	0.14211	0.000722	0.26608	0.00671	-0.01407	0.000328
NSTRATA*SITAVIO2						
5 N	0.03515	0.000589	0.41244	0.005479	-0.00232	0.000268
5 Y	0.34885	0.000589	0.01006	0.005479	-0.01562	0.000268
7 N	0.02373	0.000589	0.48848	0.005479	-0.00267	0.000268
7 Y	0.35725	0.000589	0.00885	0.005479	-0.022	0.000268

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
OBSERVED*SITAVIO1						
A - RHO14	0.24179	0.000884	0.06223	0.008218	-0.00504	0.000401
A 0	0.19158	0.000884	0.33227	0.008218	-0.00475	0.000401
A RHO14	0.14217	0.000884	0.27328	0.008218	-0.00462	0.000401
X2 - RHO14	0.25114	0.000884	0.07659	0.008218	-0.00804	0.000401
X2 0	0.19165	0.000884	0.33133	0.008218	-0.00816	0.000401
X2 RHO14	0.13043	0.000884	0.25369	0.008218	-0.00848	0.000401
X1X2 - RHO14	0.22852	0.000884	0.15907	0.008218	-0.02178	0.000401
X1X2 0	0.19132	0.000884	0.32933	0.008218	-0.01248	0.000401
X1X2 RHO14	0.15258	0.000884	0.25183	0.008218	-0.02254	0.000401
OBSERVED*SITAVIO2						
A N	0.0291	0.000722	0.43759	0.00671	-0.00019	0.000328
A Y	0.3546	0.000722	0.0076	0.00671	-0.00942	0.000328
X2 N	0.02973	0.000722	0.42904	0.00671	-0.0034	0.000328
X2 Y	0.35242	0.000722	0.01203	0.00671	-0.01305	0.000328
X1X2 N	0.02948	0.000722	0.48475	0.00671	-0.00391	0.000328
X1X2 Y	0.35213	0.000722	0.00874	0.00671	-0.03396	0.000328
SITAVIO1*SITAVIO2						
-RHO14 N	0.10133	0.000722	0.19747	0.00671	-0.0027	0.000328
-RHO14 Y	0.37964	0.000722	0.00113	0.00671	-0.02054	0.000328
0 N	0.02852	0.000722	0.65946	0.00671	-0.00243	0.000328
0 Y	0.35451	0.000722	0.00249	0.00671	-0.01449	0.000328
RHO14 N	- 0.04154	0.000722	0.49445	0.00671	-0.00236	0.000328
RHO14 Y	0.325	0.000722	0.02475	0.00671	-0.02139	0.000328

Table XXIX: Case 7: Analysis of Variance for MeanBias, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	110.0035	110.0035	15.7148	11000	0
SSIZE	1	0	0	0	0.02	0.889
KNRATIO	2	0	0	0	0	0.996
METHOD	1	0.0002	0.0002	0.0002	0.13	0.715
NSTRATA	1	0.0078	0.0078	0.0078	5.57	0.018
OBSERVED	3	1.0825	1.0825	0.3608	258.15	0
SITAVIO1	2	6.6733	6.6733	3.3366	2387.23	0
SITAVIO2	1	86.8276	86.8276	86.8276	62000	0
COVSTR*SSIZE	7	0.0001	0.0001	0	0.01	1
COVSTR*KNRATIO	14	0.0002	0.0002	0	0.01	1
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.0064	0.0064	0.0009	0.65	0.715
COVSTR*OBSERVED	21	52.8658	52.8658	2.5174	1801.11	0
COVSTR*SITAVIO1	14	2.5494	2.5494	0.1821	130.28	0
COVSTR*SITAVIO2	7	39.2281	39.2281	5.604	4009.44	0
SSIZE*KNRATIO	2	0	0	0	0.01	0.994
SSIZE*METHOD	1	0	0	0	0	0.993
SSIZE*NSTRATA	1	0	0	0	0.02	0.896
SSIZE*OBSERVED	3	0.0003	0.0003	0.0001	0.07	0.978
SSIZE*SITAVIO1	2	0.0001	0.0001	0	0.02	0.977
SSIZE*SITAVIO2	1	0.0002	0.0002	0.0002	0.13	0.721
KNRATIO*METHOD	2	0	0	0	0	1
KNRATIO*NSTRATA	2	0	0	0	0.01	0.99
KNRATIO*OBSERVED	6	0	0	0	0	1
KNRATIO*SITAVIO1	4	0.0001	0.0001	0	0.02	0.999
KNRATIO*SITAVIO2	2	0	0	0	0	0.999
METHOD*NSTRATA	1	0	0	0	0	0.979
METHOD*OBSERVED	3	0.0006	0.0006	0.0002	0.14	0.939
METHOD*SITAVIO1	2	0.0197	0.0197	0.0099	7.06	0.001
METHOD*SITAVIO2	1	0.0005	0.0005	0.0005	0.39	0.532
NSTRATA*OBSERVED	3	0.0041	0.0041	0.0014	0.98	0.4
NSTRATA*SITAVIO1	2	0.0024	0.0024	0.0012	0.85	0.429
NSTRATA*SITAVIO2	1	0.0592	0.0592	0.0592	42.36	0
OBSERVED*SITAVIO1	6	0.2637	0.2637	0.044	31.45	0
OBSERVED*SITAVIO2	3	8.3244	8.3244	2.7748	1985.26	0
SITAVIO1*SITAVIO2	2	1.2206	1.2206	0.6103	436.65	0
Error	4462	6.2366	6.2366	0.0014		
Total	4607	315.3775				

Table XXX: Case 7: Analysis of Variance for Clevel, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	7.5853	7.5853	1.0836	34.98	0
SSIZE	1	16.588	16.588	16.588	535.53	0
KNRATIO	2	5.8225	5.8225	2.9112	93.99	0
METHOD	1	0.0028	0.0028	0.0028	0.09	0.764
NSTRATA	1	1.0322	1.0322	1.0322	33.32	0
OBSERVED	3	13.7771	13.7771	4.5924	148.26	0
SITAVIO1	2	32.1931	32.1931	16.0966	519.66	0
SITAVIO2	1	135.2817	135.2817	135.2817	4367.44	0
COVSTR*SSIZE	7	0.7341	0.7341	0.1049	3.39	0.001
COVSTR*KNRATIO	14	0.3457	0.3457	0.0247	0.8	0.673
COVSTR*METHOD	7	0	0	0	0	1
COVSTR*NSTRATA	7	0.51	0.51	0.0729	2.35	0.021
COVSTR*OBSERVED	21	22.332	22.332	1.0634	34.33	0
COVSTR*SITAVIO1	14	24.1968	24.1968	1.7283	55.8	0
COVSTR*SITAVIO2	7	2.9406	2.9406	0.4201	13.56	0
SSIZE*KNRATIO	2	1.0377	1.0377	0.5188	16.75	0
SSIZE*METHOD	1	0.0036	0.0036	0.0036	0.12	0.734
SSIZE*NSTRATA	1	0.0005	0.0005	0.0005	0.02	0.895
SSIZE*OBSERVED	3	0.439	0.439	0.1463	4.72	0.003
SSIZE*SITAVIO1	2	0.002	0.002	0.001	0.03	0.969
SSIZE*SITAVIO2	1	8.4972	8.4972	8.4972	274.33	0
KNRATIO*METHOD	2	0.0008	0.0008	0.0004	0.01	0.988
KNRATIO*NSTRATA	2	0.0026	0.0026	0.0013	0.04	0.958
KNRATIO*OBSERVED	6	0.1833	0.1833	0.0305	0.99	0.433
KNRATIO*SITAVIO1	4	0.0624	0.0624	0.0156	0.5	0.733
KNRATIO*SITAVIO2	2	2.8153	2.8153	1.4077	45.45	0
METHOD*NSTRATA	1	0.0004	0.0004	0.0004	0.01	0.915
METHOD*OBSERVED	3	0.0077	0.0077	0.0026	0.08	0.97
METHOD*SITAVIO1	2	0.0071	0.0071	0.0036	0.11	0.892
METHOD*SITAVIO2	1	0.0001	0.0001	0.0001	0	0.956
NSTRATA*OBSERVED	3	0.1942	0.1942	0.0647	2.09	0.099
NSTRATA*SITAVIO1	2	0.2822	0.2822	0.1411	4.56	0.011
NSTRATA*SITAVIO2	1	0.9276	0.9276	0.9276	29.95	0
OBSERVED*SITAVIO1	6	7.2515	7.2515	1.2086	39.02	0
OBSERVED*SITAVIO2	3	33.9626	33.9626	11.3209	365.48	0
SITAVIO1*SITAVIO2	2	25.5857	25.5857	12.7929	413	0
Error	4462	138.2109	138.2109	0.031		
Total	4607	482.8164				

Table XXXI: Case 7: Analysis of Variance for StDiff, using Adjusted SS for Tests.

Source	DF	Seq SS	Adj SS	Adj MS	F	P
COVSTR	7	0.029091	0.029091	0.0041559	80.43	0
SSIZE	1	0.054959	0.054959	0.054959	1063.6	0
KNRATIO	2	0.0031037	0.0031037	0.0015519	30.03	0
METHOD	1	0.0003157	0.0003157	0.0003157	6.11	0.013
NSTRATA	1	0.0082644	0.0082644	0.0082644	159.94	0
OBSERVED	3	0.1579	0.1579	0.052633	1018.58	0
SITAVIO1	2	0.0062215	0.0062215	0.0031108	60.2	0
SITAVIO2	1	0.18073	0.18073	0.18073	3497.63	0
COVSTR*SSIZE	7	0.005115	0.005115	0.0007307	14.14	0
COVSTR*KNRATIO	14	0.0010628	0.0010628	7.59e-005	1.47	0.114
COVSTR*METHOD	7	0.0001315	0.0001315	1.88e-005	0.36	0.924
COVSTR*NSTRATA	7	0.0018286	0.0018286	0.0002612	5.06	0
COVSTR*OBSERVED	21	0.05449	0.05449	0.0025948	50.22	0
COVSTR*SITAVIO1	14	0.0068224	0.0068224	0.0004873	9.43	0
COVSTR*SITAVIO2	7	0.020094	0.020094	0.0028705	55.55	0
SSIZE*KNRATIO	2	0.0003817	0.0003817	0.0001909	3.69	0.025
SSIZE*METHOD	1	6.9e-006	6.9e-006	6.9e-006	0.13	0.714
SSIZE*NSTRATA	1	2.84e-005	2.84e-005	2.84e-005	0.55	0.459
SSIZE*OBSERVED	3	0.018501	0.018501	0.0061671	119.35	0
SSIZE*SITAVIO1	2	0.0004302	0.0004302	0.0002151	4.16	0.016
SSIZE*SITAVIO2	1	0.02377	0.02377	0.02377	460.02	0
KNRATIO*METHOD	2	1.1e-006	1.1e-006	6e-007	0.01	0.989
KNRATIO*NSTRATA	2	3.98e-005	3.98e-005	1.99e-005	0.38	0.681
KNRATIO*OBSERVED	6	0.0027245	0.0027245	0.0004541	8.79	0
KNRATIO*SITAVIO1	4	0.0001108	0.0001108	2.77e- 005	0.54	0.709
KNRATIO*SITAVIO2	2	0.0083765	0.0083765	0.0041882	81.05	0
METHOD*NSTRATA	1	6e-006	6e-006	6e-006	0.12	0.733
METHOD*OBSERVED	3	0.0009472	0.0009472	0.0003157	6.11	0
METHOD*SITAVIO1	2	3.87e-005	3.87e-005	1.94e-005	0.37	0.687
METHOD*SITAVIO2	1	0.0002756	0.0002756	0.0002756	5.33	0.021
NSTRATA*OBSERVED	3	0.015276	0.015276	0.0050921	98.55	0
NSTRATA*SITAVIO1	2	0.0008044	0.0008044	0.0004022	7.78	0
NSTRATA*SITAVIO2	1	0.0065386	0.0065386	0.0065386	126.54	0
OBSERVED*SITAVIO1	6	0.017957	0.017957	0.0029929	57.92	0
OBSERVED*SITAVIO2	3	0.13109	0.13109	0.043698	845.67	0
SITAVIO1*SITAVIO2	2	0.0060044	0.0060044	0.0030022	58.1	0
Error	4462	0.23056	0.23056	5.17e-005		
Total	4607	0.99401				

Table XXXII: Case 7: Means and standard errors (SE) of the 1st and 2nd order effects on MeanBias, Clevel and StDiff across the other factors.

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR						
1	0.095	0.001558	0.2001	0.007333	-0.0066	0.0003
2	0.3623	0.001558	0.1763	0.007333	-0.0076	0.0003
3	0.0747	0.001558	0.2811	0.007333	-0.0125	0.0003
4	0.0793	0.001558	0.2506	0.007333	-0.0056	0.0003
5	0.3418	0.001558	0.174	0.007333	-0.0125	0.0003
6	0.4003	0.001558	0.1627	0.007333	-0.0086	0.0003
7	- 0.0368	0.001558	0.1722	0.007333	-0.0114	0.0003
8	0.2841	0.001558	0.1747	0.007333	-0.0081	0.0003
SSIZE						
1000	0.2	0.000779	0.259	0.003667	-0.0126	0.00015
5000	0.2002	0.000779	0.139	0.003667	-0.0057	0.00015
KNRATIO						
1/2	0.2001	0.000954	0.2464	0.004491	-0.0102	0.000183
2/2	0.2001	0.000954	0.1897	0.004491	-0.0089	0.000183
3/2	0.2002	0.000954	0.1608	0.004491	-0.0082	0.000183
METHOD						
PROP	0.2003	0.000779	0.1982	0.003667	-0.0089	0.00015
DA	0.1999	0.000779	0.1997	0.003667	-0.0094	0.00015
NSTRATA						
5	0.2014	0.000779	0.184	0.003667	-0.0078	0.00015
7	0.1988	0.000779	0.2139	0.003667	-0.0105	0.00015
OBSERVED						
A	0.1918	0.001101	0.2226	0.005185	-0.0048	0.000212
X1	0.2266	0.001101	0.1059	0.005185	-0.0045	0.000212
X2	0.1911	0.001101	0.2205	0.005185	-0.0082	0.000212
X1X2	0.1908	0.001101	0.2467	0.005185	-0.0189	0.000212
SITAVIO1						
- RHO14	0.2465	0.000954	0.0819	0.004491	-0.0098	0.000183
0	0.2004	0.000954	0.2717	0.004491	-0.0075	0.000183
RHO14	0.1533	0.000954	0.2433	0.004491	-0.0101	0.000183
SITAVIO2						
N	0.0628	0.000779	0.3703	0.003667	-0.0029	0.00015
Y	0.3374	0.000779	0.0276	0.003667	-0.0154	0.00015
COVSTR*SSIZE						
1 1000	0.0949	0.002203	0.2586	0.010371	-0.0087	0.000424
1 5000	0.0952	0.002203	0.1416	0.010371	-0.0046	0.000424
2 1000	0.3622	0.002203	0.2268	0.010371	-0.0101	0.000424
2 5000	0.3624	0.002203	0.1258	0.010371	-0.005	0.000424
3 1000	0.0745	0.002203	0.3588	0.010371	-0.0161	0.000424
3 5000	0.0749	0.002203	0.2034	0.010371	-0.0089	0.000424
4 1000	0.0793	0.002203	0.3353	0.010371	-0.0083	0.000424
4 5000	0.0792	0.002203	0.1659	0.010371	-0.0029	0.000424
5 1000	0.3415	0.002203	0.2259	0.010371	-0.0162	0.000424
5 5000	0.342	0.002203	0.1221	0.010371	-0.0089	0.000424
6 1000	0.4003	0.002203	0.2143	0.010371	-0.0125	0.000424
6 5000	0.4004	0.002203	0.1111	0.010371	-0.0047	0.000424
7 1000	- 0.0367	0.002203	0.2225	0.010371	-0.0172	0.000424
7 5000	- 0.0368	0.002203	0.1218	0.010371	-0.0057	0.000424
8 1000	0.2842	0.002203	0.2295	0.010371	-0.0116	0.000424
8 5000	0.284	0.002203	0.12	0.010371	-0.0046	0.000424

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*KNRATIO						
1 1/2	0.0947	0.002698	0.2515	0.012702	-0.0081	0.000519
1 2/2	0.0952	0.002698	0.1882	0.012702	-0.0063	0.000519
1 3/2	0.0952	0.002698	0.1606	0.012702	-0.0055	0.000519
2 1/2	0.3621	0.002698	0.2129	0.012702	-0.0082	0.000519
2 2/2	0.3623	0.002698	0.1704	0.012702	-0.0073	0.000519
2 3/2	0.3625	0.002698	0.1454	0.012702	-0.0072	0.000519
3 1/2	0.0748	0.002698	0.3445	0.012702	-0.0138	0.000519
3 2/2	0.0747	0.002698	0.2686	0.012702	-0.0124	0.000519
3 3/2	0.0748	0.002698	0.2302	0.012702	-0.0113	0.000519
4 1/2	0.0796	0.002698	0.3186	0.012702	-0.0076	0.000519
4 2/2	0.0786	0.002698	0.239	0.012702	-0.0053	0.000519
4 3/2	0.0795	0.002698	0.1941	0.012702	-0.0039	0.000519
5 1/2	0.3416	0.002698	0.2132	0.012702	-0.0128	0.000519
5 2/2	0.3419	0.002698	0.1655	0.012702	-0.0126	0.000519
5 3/2	0.3418	0.002698	0.1433	0.012702	-0.0121	0.000519
6 1/2	0.4	0.002698	0.2018	0.012702	-0.0094	0.000519
6 2/2	0.4003	0.002698	0.1553	0.012702	-0.0088	0.000519
6 3/2	0.4006	0.002698	0.131	0.012702	-0.0076	0.000519
7 1/2	- 0.0368	0.002698	0.2136	0.012702	-0.0133	0.000519
7 2/2	- 0.0366	0.002698	0.1625	0.012702	-0.0106	0.000519
7 3/2	- 0.037	0.002698	0.1403	0.012702	-0.0103	0.000519
8 1/2	0.2843	0.002698	0.2148	0.012702	-0.0085	0.000519
8 2/2	0.2839	0.002698	0.168	0.012702	-0.0079	0.000519
8 3/2	0.284	0.002698	0.1414	0.012702	-0.0079	0.000519
COVSTR*METHOD						
1 PROP	0.0951	0.002203	0.1993	0.010371	-0.0064	0.000424
1 DA	0.0949	0.002203	0.2009	0.010371	-0.0068	0.000424
2 PROP	0.3626	0.002203	0.1755	0.010371	-0.0075	0.000424
2 DA	0.362	0.002203	0.177	0.010371	-0.0077	0.000424
3 PROP	0.0748	0.002203	0.2804	0.010371	-0.012	0.000424
3 DA	0.0746	0.002203	0.2818	0.010371	-0.013	0.000424
4 PROP	0.0794	0.002203	0.2498	0.010371	-0.0055	0.000424
4 DA	0.0791	0.002203	0.2513	0.010371	-0.0057	0.000424
5 PROP	0.342	0.002203	0.1732	0.010371	-0.0121	0.000424
5 DA	0.3415	0.002203	0.1748	0.010371	-0.0129	0.000424
6 PROP	0.4006	0.002203	0.1619	0.010371	-0.0084	0.000424
6 DA	0.4	0.002203	0.1635	0.010371	-0.0088	0.000424
7 PROP	- 0.0366	0.002203	0.1713	0.010371	-0.0109	0.000424
7 DA	- 0.0369	0.002203	0.173	0.010371	-0.0119	0.000424
8 PROP	0.2843	0.002203	0.174	0.010371	-0.008	0.000424
8 DA	0.2838	0.002203	0.1755	0.010371	-0.0082	0.000424
COVSTR*NSTRATA						
1 5	0.0955	0.002203	0.1968	0.010371	-0.0056	0.000424
1 7	0.0945	0.002203	0.2034	0.010371	-0.0076	0.000424
2 5	0.3636	0.002203	0.1493	0.010371	-0.0068	0.000424
2 7	0.361	0.002203	0.2033	0.010371	-0.0084	0.000424
3 5	0.0752	0.002203	0.2739	0.010371	-0.0099	0.000424
3 7	0.0743	0.002203	0.2883	0.010371	-0.0151	0.000424
4 5	0.0797	0.002203	0.2442	0.010371	-0.0049	0.000424
4 7	0.0788	0.002203	0.2569	0.010371	-0.0063	0.000424
5 5	0.3433	0.002203	0.147	0.010371	-0.0106	0.000424
5 7	0.3402	0.002203	0.201	0.010371	-0.0145	0.000424
6 5	0.4002	0.002203	0.145	0.010371	-0.0075	0.000424
6 7	0.4004	0.002203	0.1804	0.010371	-0.0098	0.000424
7 5	- 0.0333	0.002203	0.1692	0.010371	-0.0097	0.000424
7 7	- 0.0402	0.002203	0.1752	0.010371	-0.0131	0.000424
8 5	0.2868	0.002203	0.1466	0.010371	-0.0072	0.000424
8 7	0.2813	0.002203	0.2029	0.010371	-0.0089	0.000424

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*OBSERVED						
1 A	0.0839	0.003115	0.2042	0.014666	-0.0058	0.000599
1 X1	0.1295	0.003115	0.1522	0.014666	-0.0005	0.000599
1 X2	0.0834	0.003115	0.2087	0.014666	-0.0062	0.000599
1 X1X2	0.0833	0.003115	0.2353	0.014666	-0.0141	0.000599
2 A	0.2998	0.003115	0.2402	0.014666	-0.0039	0.000599
2 X1	0.5541	0.003115	0	0.014666	-0.0002	0.000599
2 X2	0.2987	0.003115	0.2321	0.014666	-0.0103	0.000599
2 X1X2	0.2967	0.003115	0.2327	0.014666	-0.0159	0.000599
3 A	0.0841	0.003115	0.2062	0.014666	-0.0057	0.000599
3 X1	0.0461	0.003115	0.3156	0.014666	-0.0072	0.000599
3 X2	0.0835	0.003115	0.2099	0.014666	-0.0061	0.000599
3 X1X2	0.0851	0.003115	0.3926	0.014666	-0.031	0.000599
4 A	0.0839	0.003115	0.2042	0.014666	-0.0059	0.000599
4 X1	0.0664	0.003115	0.3766	0.014666	-0.0014	0.000599
4 X2	0.0834	0.003115	0.2081	0.014666	-0.0064	0.000599
4 X1X2	0.0832	0.003115	0.2134	0.014666	-0.0088	0.000599
5 A	0.2995	0.003115	0.2404	0.014666	-0.0038	0.000599
5 X1	0.4708	0.003115	0	0.014666	-0.0077	0.000599
5 X2	0.2984	0.003115	0.2333	0.014666	-0.0101	0.000599
5 X1X2	0.2983	0.003115	0.2223	0.014666	-0.0285	0.000599
6 A	0.2998	0.003115	0.2399	0.014666	-0.0038	0.000599
6 X1	0.7047	0.003115	0	0.014666	-0.0016	0.000599
6 X2	0.2989	0.003115	0.2325	0.014666	-0.0101	0.000599
6 X1X2	0.2978	0.003115	0.1784	0.014666	-0.019	0.000599
7 A	0.084	0.003115	0.2047	0.014666	-0.0058	0.000599
7 X1	- 0.3983	0.003115	0	0.014666	-0.0122	0.000599
7 X2	0.0835	0.003115	0.2089	0.014666	-0.0063	0.000599
7 X1X2	0.0838	0.003115	0.275	0.014666	-0.0213	0.000599
8 A	0.2997	0.003115	0.2409	0.014666	-0.0038	0.000599
8 X1	0.2397	0.003115	0.0031	0.014666	-0.0052	0.000599
8 X2	0.2987	0.003115	0.2308	0.014666	-0.0103	0.000599
8 X1X2	0.2982	0.003115	0.2241	0.014666	-0.013	0.000599
COVSTR*SITAVIO1						
1 - RHO14	0.1732	0.002698	0.0562	0.012702	-0.0072	0.000519
1 0	0.0963	0.002698	0.3575	0.012702	-0.0048	0.000519
1 RHO14	0.0155	0.002698	0.1866	0.012702	-0.0079	0.000519
2 - RHO14	0.3863	0.002698	0.0647	0.012702	-0.0078	0.000519
2 0	0.3625	0.002698	0.1528	0.012702	-0.0064	0.000519
2 RHO14	0.3381	0.002698	0.3113	0.012702	-0.0085	0.000519
3 - RHO14	0.1297	0.002698	0.1397	0.012702	-0.0141	0.000519
3 0	0.075	0.002698	0.4131	0.012702	-0.0079	0.000519
3 RHO14	0.0195	0.002698	0.2905	0.012702	-0.0154	0.000519
4 - RHO14	0.1661	0.002698	0.0734	0.012702	-0.0057	0.000519
4 0	0.0802	0.002698	0.4514	0.012702	-0.0055	0.000519
4 RHO14	- 0.0085	0.002698	0.2269	0.012702	-0.0056	0.000519
5 - RHO14	0.3426	0.002698	0.1321	0.012702	-0.0157	0.000519
5 0	0.3413	0.002698	0.1525	0.012702	-0.0092	0.000519
5 RHO14	0.3415	0.002698	0.2374	0.012702	-0.0127	0.000519
6 - RHO14	0.4395	0.002698	0.0509	0.012702	-0.0076	0.000519
6 0	0.4001	0.002698	0.1509	0.012702	-0.0077	0.000519
6 RHO14	0.3613	0.002698	0.2863	0.012702	-0.0105	0.000519
7 - RHO14	0.031	0.002698	0.0694	0.012702	-0.012	0.000519
7 0	- 0.0358	0.002698	0.3433	0.012702	-0.0104	0.000519
7 RHO14	- 0.1054	0.002698	0.1037	0.012702	-0.0118	0.000519
8 - RHO14	0.3039	0.002698	0.0687	0.012702	-0.0084	0.000519
8 0	0.2838	0.002698	0.152	0.012702	-0.0079	0.000519
8 RHO14	0.2646	0.002698	0.3035	0.012702	-0.0079	0.000519

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
COVSTR*SITAVIO2						
1 N	0.035	0.002203	0.3788	0.010371	-0.0004	0.000424
1 Y	0.155	0.002203	0.0214	0.010371	-0.0128	0.000424
2 N	0.1394	0.002203	0.3525	0.010371	-0.0033	0.000424
2 Y	0.5852	0.002203	0	0.010371	-0.0119	0.000424
3 N	0.019	0.002203	0.5026	0.010371	-0.0024	0.000424
3 Y	0.1305	0.002203	0.0596	0.010371	-0.0226	0.000424
4 N	0.0211	0.002203	0.374	0.010371	-0.0007	0.000424
4 Y	0.1375	0.002203	0.1271	0.010371	-0.0105	0.000424
5 N	0.1231	0.002203	0.3477	0.010371	-0.005	0.000424
5 Y	0.5604	0.002203	0.0003	0.010371	-0.02	0.000424
6 N	0.1435	0.002203	0.3252	0.010371	-0.0033	0.000424
6 Y	0.6571	0.002203	0.0002	0.010371	-0.0139	0.000424
7 N	- 0.0502	0.002203	0.3322	0.010371	-0.0031	0.000424
7 Y	- 0.0233	0.002203	0.0121	0.010371	-0.0197	0.000424
8 N	0.0717	0.002203	0.3494	0.010371	-0.0046	0.000424
8 Y	0.4965	0.002203	0.0001	0.010371	-0.0116	0.000424
SSIZE*KNRATIO						
1000 1/2	0.2	0.001349	0.3261	0.006351	-0.0141	0.000259
1000 2/2	0.1999	0.001349	0.2465	0.006351	-0.0123	0.000259
1000 3/2	0.2002	0.001349	0.2042	0.006351	-0.0114	0.000259
5000 1/2	0.2001	0.001349	0.1666	0.006351	-0.0064	0.000259
5000 2/2	0.2002	0.001349	0.1329	0.006351	-0.0056	0.000259
5000 3/2	0.2002	0.001349	0.1174	0.006351	-0.0051	0.000259
SSIZE*METHOD						
1000 PROP	0.2002	0.001101	0.2573	0.005185	-0.0123	0.000212
1000 DA	0.1998	0.001101	0.2606	0.005185	-0.0129	0.000212
5000 PROP	0.2004	0.001101	0.1391	0.005185	-0.0054	0.000212
5000 DA	0.2	0.001101	0.1389	0.005185	-0.0059	0.000212
SSIZE*NSTRATA						
1000 5	0.2014	0.001101	0.2443	0.005185	-0.0112	0.000212
1000 7	0.1986	0.001101	0.2736	0.005185	-0.014	0.000212
5000 5	0.2014	0.001101	0.1236	0.005185	-0.0044	0.000212
5000 7	0.1989	0.001101	0.1543	0.005185	-0.0069	0.000212
SSIZE*OBSERVED						
1000 A	0.1919	0.001558	0.2831	0.007333	-0.0067	0.0003
1000 X1	0.2267	0.001558	0.151	0.007333	-0.0064	0.0003
1000 X2	0.1911	0.001558	0.2826	0.007333	-0.0114	0.0003
1000 X1X2	0.1903	0.001558	0.3191	0.007333	-0.0257	0.0003
5000 A	0.1918	0.001558	0.1621	0.007333	-0.0029	0.0003
5000 X1	0.2265	0.001558	0.0609	0.007333	-0.0026	0.0003
5000 X2	0.191	0.001558	0.1585	0.007333	-0.005	0.0003
5000 X1X2	0.1913	0.001558	0.1744	0.007333	-0.0121	0.0003
SSIZE*SITAVIO1						
1000 - RHO14	0.2463	0.001349	0.1414	0.006351	-0.0136	0.000259
1000 0	0.2004	0.001349	0.3326	0.006351	-0.011	0.000259
1000 RHO14	0.1534	0.001349	0.3029	0.006351	-0.0131	0.000259
5000 - RHO14	0.2468	0.001349	0.0224	0.006351	-0.006	0.000259
5000 0	0.2005	0.001349	0.2108	0.006351	-0.004	0.000259
5000 RHO14	0.1533	0.001349	0.1837	0.006351	-0.007	0.000259
SSIZE*SITAVIO2						
1000 N	0.0629	0.001101	0.4732	0.005185	-0.004	0.000212
1000 Y	0.3371	0.001101	0.0447	0.005185	-0.0211	0.000212
5000 N	0.0627	0.001101	0.2674	0.005185	-0.0017	0.000212
5000 Y	0.3376	0.001101	0.0106	0.005185	-0.0097	0.000212
KNRATIO*METHOD						
1/2 PROP	0.2003	0.001349	0.2451	0.006351	-0.01	0.000259
1/2 DA	0.1998	0.001349	0.2476	0.006351	-0.0105	0.000259
2/2 PROP	0.2003	0.001349	0.1889	0.006351	-0.0087	0.000259
2/2 DA	0.1999	0.001349	0.1905	0.006351	-0.0092	0.000259
3/2 PROP	0.2003	0.001349	0.1605	0.006351	-0.008	0.000259
3/2 DA	0.2	0.001349	0.1611	0.006351	-0.0085	0.000259
KNRATIO*NSTRATA						
1/2 5	0.2015	0.001349	0.2325	0.006351	-0.0088	0.000259
1/2 7	0.1986	0.001349	0.2603	0.006351	-0.0116	0.000259
2/2 5	0.2013	0.001349	0.174	0.006351	-0.0075	0.000259
2/2 7	0.1988	0.001349	0.2053	0.006351	-0.0103	0.000259
3/2 5	0.2014	0.001349	0.1455	0.006351	-0.007	0.000259
3/2 7	0.1989	0.001349	0.1761	0.006351	-0.0094	0.000259

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
KNRATIO*OBSERVED						
1/2 A	0.1918	0.001908	0.2716	0.008981	-0.0064	0.000367
1/2 X1	0.2267	0.001908	0.1395	0.008981	-0.0041	0.000367
1/2 X2	0.191	0.001908	0.272	0.008981	-0.0091	0.000367
1/2 X1X2	0.1906	0.001908	0.3024	0.008981	-0.0212	0.000367
2/2 A	0.1918	0.001908	0.2126	0.008981	-0.0045	0.000367
2/2 X1	0.2265	0.001908	0.0993	0.008981	-0.0045	0.000367
2/2 X2	0.1911	0.001908	0.2103	0.008981	-0.0079	0.000367
2/2 X1X2	0.1908	0.001908	0.2365	0.008981	-0.0187	0.000367
3/2 A	0.1919	0.001908	0.1836	0.008981	-0.0036	0.000367
3/2 X1	0.2266	0.001908	0.079	0.008981	-0.0049	0.000367
3/2 X2	0.1911	0.001908	0.1793	0.008981	-0.0076	0.000367
3/2 X1X2	0.191	0.001908	0.2013	0.008981	-0.0169	0.000367
KNRATIO*SITAVIO1						
1/2 - RHO14	0.2462	0.001652	0.1298	0.007778	-0.0112	0.000318
1/2 0	0.2004	0.001652	0.313	0.007778	-0.0084	0.000318
1/2 RHO14	0.1535	0.001652	0.2964	0.007778	-0.011	0.000318
2/2 - RHO14	0.2466	0.001652	0.0712	0.007778	-0.0095	0.000318
2/2 0	0.2003	0.001652	0.2643	0.007778	-0.0073	0.000318
2/2 RHO14	0.1533	0.001652	0.2335	0.007778	-0.01	0.000318
3/2 - RHO14	0.2468	0.001652	0.0447	0.007778	-0.0088	0.000318
3/2 0	0.2004	0.001652	0.2378	0.007778	-0.0068	0.000318
3/2 RHO14	0.1532	0.001652	0.2	0.007778	-0.0092	0.000318
KNRATIO*SITAVIO2						
1/2 N	0.0628	0.001349	0.4503	0.006351	-0.0022	0.000259
1/2 Y	0.3373	0.001349	0.0424	0.006351	-0.0182	0.000259
2/2 N	0.0628	0.001349	0.3556	0.006351	-0.0029	0.000259
2/2 Y	0.3373	0.001349	0.0237	0.006351	-0.0149	0.000259
3/2 N	0.0628	0.001349	0.3049	0.006351	-0.0035	0.000259
3/2 Y	0.3375	0.001349	0.0167	0.006351	-0.013	0.000259
METHOD*NSTRATA						
PROP 5	0.2016	0.001101	0.1835	0.005185	-0.0076	0.000212
PROP 7	0.199	0.001101	0.2129	0.005185	-0.0102	0.000212
DA 5	0.2012	0.001101	0.1845	0.005185	-0.008	0.000212
DA 7	0.1986	0.001101	0.215	0.005185	-0.0108	0.000212
METHOD*OBSERVED						
PROP A	0.1927	0.001558	0.2196	0.007333	-0.0048	0.0003
PROP X1	0.2266	0.001558	0.1059	0.007333	-0.0045	0.0003
PROP X2	0.1911	0.001558	0.2205	0.007333	-0.0082	0.0003
PROP X1X2	0.1908	0.001558	0.2466	0.007333	-0.0179	0.0003
DA A	0.191	0.001558	0.2256	0.007333	-0.0048	0.0003
DA X1	0.2266	0.001558	0.1059	0.007333	-0.0045	0.0003
DA X2	0.1911	0.001558	0.2205	0.007333	-0.0082	0.0003
DA X1X2	0.1908	0.001558	0.2468	0.007333	-0.02	0.0003
METHOD*SITAVIO1						
PROP - RHO14	0.2443	0.001349	0.0794	0.006351	-0.0095	0.000259
PROP 0	0.2004	0.001349	0.2717	0.006351	-0.0073	0.000259
PROP RHO14	0.1562	0.001349	0.2435	0.006351	-0.0097	0.000259
DA - RHO14	0.2488	0.001349	0.0844	0.006351	-0.0101	0.000259
DA 0	0.2004	0.001349	0.2717	0.006351	-0.0076	0.000259
DA RHO14	0.1505	0.001349	0.2431	0.006351	-0.0104	0.000259
METHOD*SITAVIO2						
PROP N	0.0627	0.001101	0.3697	0.005185	-0.0028	0.000212
PROP Y	0.3379	0.001101	0.0267	0.005185	-0.0149	0.000212
DA N	0.063	0.001101	0.3709	0.005185	-0.0029	0.000212
DA Y	0.3368	0.001101	0.0285	0.005185	-0.0159	0.000212
NSTRATA*OBSERVED						
5 A	0.1925	0.001558	0.2038	0.007333	-0.0046	0.0003
5 X1	0.2296	0.001558	0.1022	0.007333	-0.0042	0.0003
5 X2	0.1918	0.001558	0.2024	0.007333	-0.0079	0.0003
5 X1X2	0.1917	0.001558	0.2275	0.007333	-0.0144	0.0003
7 A	0.1912	0.001558	0.2413	0.007333	-0.005	0.0003
7 X1	0.2237	0.001558	0.1097	0.007333	-0.0048	0.0003
7 X2	0.1903	0.001558	0.2387	0.007333	-0.0086	0.0003
7 X1X2	0.1899	0.001558	0.2659	0.007333	-0.0234	0.0003

Effect	MeanBias	SE MeanBias	Clevel	SE Clevel	StDiff	SE StDiff
NSTRATA*SITAVIO1						
5 - RHO14	0.2486	0.001349	0.0669	0.006351	-0.0083	0.000259
5 0	0.2019	0.001349	0.2471	0.006351	-0.0067	0.000259
5 RHO14	0.1537	0.001349	0.2379	0.006351	-0.0084	0.000259
7 - RHO14	0.2445	0.001349	0.0969	0.006351	-0.0114	0.000259
7 0	0.1989	0.001349	0.2962	0.006351	-0.0082	0.000259
7 RHO14	0.153	0.001349	0.2487	0.006351	-0.0118	0.000259
NSTRATA*SITAVIO2						
5 N	0.0677	0.001101	0.3411	0.005185	-0.0027	0.000212
5 Y	0.3351	0.001101	0.0268	0.005185	-0.0128	0.000212
7 N	0.0579	0.001101	0.3995	0.005185	-0.003	0.000212
7 Y	0.3396	0.001101	0.0284	0.005185	-0.0179	0.000212
OBSERVED*SITAVIO1						
A - RHO14	0.2418	0.001908	0.0622	0.008981	-0.005	0.000367
A 0	0.1916	0.001908	0.3323	0.008981	-0.0047	0.000367
A RHO14	0.1422	0.001908	0.2733	0.008981	-0.0046	0.000367
X1 - RHO14	0.2647	0.001908	0.0297	0.008981	-0.0044	0.000367
X1 0	0.227	0.001908	0.0938	0.008981	-0.0045	0.000367
X1 RHO14	0.1881	0.001908	0.1943	0.008981	-0.0046	0.000367
X2 - RHO14	0.2511	0.001908	0.0766	0.008981	-0.008	0.000367
X2 0	0.1917	0.001908	0.3313	0.008981	-0.0082	0.000367
X2 RHO14	0.1304	0.001908	0.2537	0.008981	-0.0085	0.000367
X1X2 - RHO14	0.2285	0.001908	0.1591	0.008981	-0.0218	0.000367
X1X2 0	0.1913	0.001908	0.3293	0.008981	-0.0125	0.000367
X1X2 RHO14	0.1526	0.001908	0.2518	0.008981	-0.0225	0.000367
OBSERVED*SITAVIO2						
A N	0.0291	0.001558	0.4376	0.007333	-0.0002	0.0003
A Y	0.3546	0.001558	0.0076	0.007333	-0.0094	0.0003
X1 N	0.163	0.001558	0.1298	0.007333	-0.0039	0.0003
X1 Y	0.2903	0.001558	0.0821	0.007333	-0.0051	0.0003
X2 N	0.0297	0.001558	0.429	0.007333	-0.0034	0.0003
X2 Y	0.3524	0.001558	0.012	0.007333	-0.013	0.0003
X1X2 N	0.0295	0.001558	0.4847	0.007333	-0.0039	0.0003
X1X2 Y	0.3521	0.001558	0.0087	0.007333	-0.034	0.0003
SITAVIO1*SITAVIO2						
-RHO14 N	0.1297	0.001349	0.1549	0.006351	-0.0029	0.000259
-RHO14 Y	0.3634	0.001349	0.0089	0.006351	-0.0167	0.000259
0 N	0.0621	0.001349	0.5251	0.006351	-0.0028	0.000259
0 Y	0.3387	0.001349	0.0183	0.006351	-0.0121	0.000259
RHO14 N	- 0.0034	0.001349	0.4309	0.006351	-0.0028	0.000259
RHO14 Y	0.31	0.001349	0.0557	0.006351	-0.0173	0.000259