

PART TWO

THE CURRENT STUDY

CHAPTER SIX

RESEARCH DESIGN AND METHODOLOGY

Aims of the Current Study

The importance of examining new and contemporary approaches to the ‘soft’ merger issues has been stressed, in order to determine accurately the effect of the change on the merged workforce as well to ascertain employee readiness in the process. The literature discussion has presented a clear argument in favour of incorporating both dispositional and situational theories into this research paradigm. It has been illustrated that both disposition (SOC) and the context (organisational climate) are instrumental in the formation of employee attitudes to change. In an attempt to expand on the domain of readiness for change theory and research, the present study aimed to explore the following:

1. To examine the relationship between employee disposition (sense of coherence) and employee readiness for change across two different organisations.
2. To examine the relationship between employee perceptions of the context factors (organisational climate) and employee readiness for change across two different organisations.

3. To examine which set of independent variables (sense of coherence and organisational climate) are most strongly related to the dependent variable (readiness for change) across two different organisations.

Research Design

Tripodi (1987) claims that research designs are the plans, structures and strategies of investigation, which seek to obtain answers to various research questions. Research designs refer to the overall scheme of the research process from problem identification and specification to evaluation and dissemination of findings (Tripodi in Grinnell, 1981, p. 198).

According to Kerlinger (1973) the purpose of research is to provide answers to research questions and to control variance. Thus, in order to achieve the aims outlined in the present study, a cross sectional non-experimental research technique was adopted, which allows for the observation and measurement of certain characteristics at a particular point in time (Bailey, 1982). Within this framework the present study attempted to examine employee readiness for change (dependent variable) by exploring individual adaptability and receptiveness to change through assessing employee sense of coherence (independent variable) as well as examining employees' unique interpretation of the organisation's climate, specifically whether the organisational climate was ripe for a change effort (independent variable).

Non-experimental research is a "systematic empirical inquiry in which the researcher does not have direct control over independent variables because their manifestations have already occurred or because they are inherently not manipulable" (Kerlinger 1986.

p. 348). According to Rosenthal and Rosnow (1994) correlational research is a form of descriptive research which can be described as a method of describing and quantifying the association between variables. A cross-sectional correlational research design was utilised in this study. This design is the simplest of the correlational research designs. It involves observation of two or more variables at the same point in time. The cross-sectional approach was utilised in the present study in order to determine whether the two independent variables (sense of coherence and organisational climate) and the dependent variable (readiness for change) were related. This type of research is useful since the first level of any cause and effect investigation is directed at establishing whether the association between variables exists (Research design and analysis reading pack, 1999). According to Breakwell, Hammond and Fife-Schaw (1995) the major shortcoming of cross-sectional designs are that they are descriptive in nature, and only establish association between variables which may not lead to causal inference.

An ex post facto design was adopted in the current study. "Ex post facto research is systematic empirical inquiry in which the scientist does not have direct control over the independent variables because their manifestations have already occurred or because they are inherently not manipulable" (Kerlinger, 1973 p. 379). The term 'ex post facto' translates from the Latin word as 'design undertaken after the event', or more broadly as 'design undertaken with wisdom of hindsight' (Research design and analysis reading pack, 1999). In the context of the current study, ex post facto research was utilised in that the researcher was seeking to understand the subjects' experiences of organisational climate (independent variable) in the original organisations prior to the merger. As the study was conducted in the post-merger phase, subjects had to complete the climate questionnaire by thinking in retrospect. The strengths of ex post facto designs are that

they are flexible and are suited to research undertaken in the field. The weakness of these designs is that established relationships cannot be stated with any degree of certainty thus; partial correlation is often used in conjunction with or in preference to ex post facto research. This implies matching variables by statistical procedures. Variables are controlled for statistically to see if the correlation survives (Research design and analyses reading pack, 1999). The present study utilised the ex post facto design in conjunction with partial correlation so as to extend the association found between the variables through the correlations, thus strengthening the established relationships between variables.

Setting and Procedure

The study was conducted in a South African organisation which is a cellular phone service provider, approximately nine months after the merger took place. Hence, the study took place in phase three of Sinetar's (1981) conceptualisation of the merger process, namely the transition phase or the start-up of a new company. According to Sinetar (1981) during this period employees' concerns centre around the structural changes, specifically "what kind of company will this be? what is the mission now? who are the players? how will they treat the employees? what is the value system of the new group leaders?" (p. 867). The merger between company one and company two took place legally on the 1 July 1999. The management of company one took control of company two on 10 October 1999. Employees of both companies were, however, given notice of the merger in August 1999. The managing director (personal communication, 6 December 2000) said that the announcement of the merger took place inconsistently across the two companies. In company one, employees were directly informed about the change, in that managers communicated with the employees directly, providing them

with a comprehensive explanation encompassing the details of the merger. In company two, employees were informed about the merger indirectly by reading about the change process in the newspapers. Thereafter newsletters and pamphlets were distributed through out the organisation confirming that the merger was to take place. Prior to the merger the two companies were independent from one another, offering similar services. The primary catalyst for the two companies merging was that the directors in company one perceived their organisation as too small a player in the industry. In order to consolidate more networks, it needed to take over another service provider in order to gain size and prevent marginalisation by other South African networks.

The study focused on employee readiness for change from both the original companies. The companies were delineated in the study by asking respondents to identify, in the biographical questionnaire, the company in which they were previously employed prior to the merger. The study did not limit its investigation to one organisation, and thus an examination of employee readiness for change across two distinct organisations was possible.

Procedure

Prior to the administration of the questionnaires, several meetings were held with the CEO as well as the Human Resource Manager of the new organisation. The purpose of these meetings was to customise the questionnaire so that it may be made relevant to the particular target population. The questionnaires were administered to the four main branches: Johannesburg, Durban, Cape Town and Port Elizabeth. Two weeks were set aside for conducting the research during which time respondents were issued with a questionnaire along with a covering letter guaranteeing their anonymity and the

confidentiality of their responses (see Appendix A). Included in the questionnaire was a biographical blank and scales which measured both the independent and dependent variables. Participation in the study was voluntary. Responses of employees at all job levels were investigated. Respondents were required to complete the questionnaire by a specified time and thereafter place the questionnaire (in a sealed envelope) in a box in a central area of each branch. The boxes were then collected by a designated individual in each branch.

A total of 300 questionnaires were administered across all branches. One hundred and forty five questionnaires were returned, resulting in a response rate of 48.3%. A response rate of this nature was viewed favourably considering the sensitive nature of the research.

Description of the Sample

Full demographic details of the sample from both companies are represented in table 2.

Company One

The sample in company one consisted of 57 respondents. It is evident from table 2 that the majority of the respondents (47%, $n = 27$) were aged between 20 and 29 years. A large proportion of the sample (33%, $n = 19$) were aged between 30 and 39 years. There were significantly more younger and less mature respondents in company one. The table also reflects that of the sample in company one 23% ($n = 13$) were male, and 77% ($n = 44$) were female.

With respect to the population group in company one, 5% ($n = 3$) of the respondents were Black; 14% ($n = 8$) were Coloured; 11% ($n = 6$) were Indian; and 70% ($n = 40$) were White. The table reflects that only 2% ($n = 1$) of the sample in this company had completed standard nine or less. Thirty seven subjects (65%) fell into the 'matric' category with regards to education; the remainder of the sample obtained a degree (5%, $n = 3$); 23% ($n = 13$) obtained a diploma and 5% ($n = 3$) obtained a higher degree.

In terms of language in company one, it is evident from the table that the majority of respondents (72%, $n = 41$) were English speaking; 4% ($n = 2$) fell into the Sotho category; 12% ($n = 7$) of the respondents were Afrikaans speaking and 12% ($n = 7$) of the respondents were bilingual.

With respect to the employment status in company one, 7% ($n = 4$) of the respondents were temporarily employed, while 93% ($n = 53$) were permanent staff members. An investigation into the job titles of the respondents revealed an evenly spread sample over a wide variety of job titles and job descriptions. The job titles, represented in table 2, that encompassed a majority proportion of respondents from company one were in the categories of: administration (26%, $n = 15$); manager (19%; $n = 11$); customer services (12%, $n = 7$); sales (11%, $n = 6$); executive (7%, $n = 4$); legal controller (7%, $n = 4$). The categories in the table that reflect a lesser proportion of respondents include: supervisor (5%, $n = 3$); credit vettor (4%, $n = 2$); credit assessor (2%, $n = 1$); contract control (2%, $n = 1$); support (2%, $n = 1$); expenditure (2%, $n = 1$); connector (2%, $n = 1$).

Company Two

The sample in company two consisted of 88 respondents. It is evident from table 2 that the majority of the respondents (48%, $n = 42$) were aged between 20-29. A large proportion of the sample (38%, $n = 33$) fell between the ages of 30-39. There were significantly more younger mature respondents in company two. The table also reflects that of the sample in company two, 23% ($n = 20$) were male and 77% ($n = 68$) were female.

With respect to the population group in company two 13% ($n = 11$) of the respondents were Black; 6% ($n = 5$) were Coloured; 16% ($n = 14$) were Indian and 66% ($n = 58$) were White. The table reflects that only 1% ($n = 1$) had completed standard nine or less. Forty eight subjects (55%) fell into the 'matric' category with regards to education. The remainder of the sample obtained a degree (9%, $n = 8$); 34% ($n = 30$) obtained a diploma, 1% ($n = 1$) obtained a higher degree.

In terms of language in company two, the table reflects that the majority of respondents (69%, $n = 61$) were English speaking; 2% ($n = 2$) fell into the Sotho category; 15% ($n = 13$) of the respondents were Afrikaans speaking; 1% ($n = 1$) were Xhosa speaking; 2% ($n = 2$) were Tswana speaking and 10% ($n = 9$) were bilingual.

With respect to the employee status in company two, 100% ($n = 88$) of the respondents were permanent staff members. An investigation into the titles revealed an evenly spread sample and a wide variety of job titles and job descriptions. The job titles, represented in table 2, that encompassed a majority proportion of respondents from company two were in the categories of: customer services (10%, $n = 9$); administration (15%, $n = 13$);

manager (13%, $n = 11$); sales (10%, $n = 9$); credit operations (8%, $n = 7$); credit vector (8%, $n = 7$); stock controller (7%, $n = 6$); credit assessor (6%, $n = 5$); and supervisor (6%, $n = 5$). The categories in the table that reflect a lesser proportion of respondents include: executive (5%, $n = 4$); contract control (5%, $n = 4$); connectors (3%, $n = 3$); consultants (3%, $n = 2$); fraud investigator (1%, $n = 1$), public relations coordinator (1%, $n = 1$) and technician (1%, $n = 1$).

Table 2: Demographic details of company one ($n = 57$) and company two ($n = 88$)

VARIABLE	COMPANY 1 FREQUENCY – n (%)	COMPANY 2 FREQUENCY – n (%)
Age		
10-19	1 (2)	-
20-29	27 (47)	42 (48)
30-39	19 (33)	33 (38)
40-49	5 (9)	6 (7)
50-59	4 (7)	7 (8)
60-69	1 (2)	-
Gender		
Male	13 (23)	20 (23)
Female	44 (77)	68 (77)
Population Group		
Black	3 (5)	11 (13)
Coloured	8 (14)	5 (6)
Indian	6 (11)	14 (16)
White	40 (70)	58 (66)

manager (13%, $\underline{n} = 11$); sales (10%, $\underline{n} = 9$); credit operations (8%, $\underline{n} = 7$); credit vettor (8%, $\underline{n} = 7$); stock controller (7%, $\underline{n} = 6$); credit assessor (6%, $\underline{n} = 5$); and supervisor (6%, $\underline{n} = 5$). The categories in the table that reflect a lesser proportion of respondents include: executive (5%, $\underline{n} = 4$); contract control (5%, $\underline{n} = 4$); connectors (3%, $\underline{n} = 3$); consultants (3%, $\underline{n} = 2$); fraud investigator (1%, $\underline{n} = 1$), public relations coordinator (1%, $\underline{n} = 1$) and technician (1%, $\underline{n} = 1$).

Table 2: Demographic details of company one ($\underline{n} = 57$) and company two ($\underline{n} = 88$)

VARIABLE	COMPANY 1 FREQUENCY – $\underline{n}$ (%)	COMPANY 2 FREQUENCY – $\underline{n}$ (%)
Age		
10-19	1 (2)	-
20-29	27 (47)	42 (48)
30-39	19 (33)	33 (38)
40-49	5 (9)	6 (7)
50-59	4 (7)	7 (8)
60-69	1 (2)	-
Gender		
Male	13 (23)	20 (23)
Female	44 (77)	68 (77)
Population Group		
Black	3 (5)	11 (13)
Coloured	8 (14)	5 (6)
Indian	6 (11)	14 (16)
White	40 (70)	58 (66)

Table 2: Demographic details of company one ($n = 57$) and company two ($n = 88$) (continued)

Education Level		
Matric	37 (65)	48 (55)
Degree	3 (5)	8 (9)
Diploma	13 (23)	30 (34)
Higher Degree	3 (5)	1 (1)
Pre-Matric	1 (2)	1 (1)
Employment Status		
Temporary/Contract	4 (7)	-
Permanent	53 (93)	88 (100)
Job Title		
Sales	6 (11)	9 (10)
Customer services	7 (12)	9 (10)
Administration	15 (26)	13 (15)
Manager	11 (19)	11 (13)
Executive	4 (7)	4 (5)
Credit vettor	2 (4)	7 (8)
Credit assessor	1 (2)	5 (6)
Credit operations	-	7 (8)
Contract control	1 (2)	4 (5)
Stock controller	-	6 (7)
Legal controller	4 (7)	-
Support	1 (2)	-
Supervisor	3 (5)	5 (6)
Expenditure	1 (2)	-
Fraud investigator	-	1 (1)
Connectors	1 (2)	3 (3)
Public relations coordinator	-	1 (1)
Consultant	-	2 (3)
Technician	-	1 (1)

Measuring Instrument

Biographical Blank

The biographical blank served to collect various demographic information relating to subjects' age, gender, race, level of education, language, company at which employed before the merger took place, employment status and job title (see Appendix B). This data was then analysed in order to ascertain its relevance to the research questions and contribution to results obtained.

Independent Variable

Sense of coherence

(a) Antonovsky's sense of coherence scale was used to measure the construct sense of coherence. The current study utilised the shortened version of the scale, the 13-item form (OTLQ 13) of Antonovsky's 29-item scale. Both versions were published by Antonovsky in 1987.

The 13-item scale consists of four items measuring meaningfulness, five items measuring comprehensibility, and four items measuring manageability. Subjects were required to indicate on a seven-point Likert type scale the degree to which the particular item applies to them (see Appendix C). Scoring consists of the numerical count of all 13 ratings. Higher scores indicate a strong sense of coherence (SOC). A total SOC score was used in the present study due to the explanatory nature of this research in exploring the relationship between disposition and readiness for change. This is in line with Antonovsky's (1987) early contention that the SOC is a global unidimensional instrument. In addition the SOC subscores were also included in order to determine the relative contribution of each SOC component to readiness for change. This is in line

with Antonovsky's (1993) later suggestion for a focus on the subscores of the instrument.

Cronbach alpha measures of internal consistency of 16 studies using the OTLQ 13 range from .74 to .91 (Antonovsky, 1993). Virtue (1996) reports two studies in which the OTLQ 13 was used on samples of South African nurses, obtaining cronbach alphas of .77 and .74. Strümpfer, Gouws and Viviers (1998) report a study in which the OTLQ 13 was used on a sample of students in a military college, obtaining a cronbach alpha of .86. The procedure used for the scale construction and the examination of the scale by various researchers suggest a high level of content, face and consensual validity (Antonovsky, 1993).

In the present research, the SOC scale in company one yielded an alpha value of .85. A reliability analysis on the subscales in company one yielded the following scores: meaning, .66; manageability, .66; comprehensibility, .73.

The SOC scale in company two yielded an alpha value of .83. A reliability analysis on the subscales in company two yielded the following scores: meaning, .70; manageability, .54; and comprehensibility, .62.

Organisational Climate

A measure of organisational climate was included in this study in order to examine the relationship between a contextual variable and readiness for change. The measure of organisational climate incorporated a 64-item scale developed by McNabb and Sepic (1995). (see Appendix D) This instrument is used to paint a picture of workers' attitudes

and opinions of certain organisational characteristics (Hanchpern, Morgan & Griego, 1998). It assesses employees' perception of organisational climate, specifically whether employees perceive this organisational dimension to be conducive and supportive of the change process.

McNabb and Sepic (1995) designed this scale, which can be located in several unpublished studies. No reliabilities and pilot tests on this scale have been published. This scale, however, was located for this study as reference had been made to this scale in numerous journal articles. These include: Armenakis, Harris and Mossholder (1993); McNabb and Sepic (1995) and Hanchpern, Morgan and Griego (1998). Although no empirical evidence regarding the psychometric proportions of the scale was found, this scale was incorporated into the present study in lieu of McNabb and Sepic's (1995) basic premise that employees' readiness for change may be indicative of the ability of the organisation's climate to successfully make the changes. Thus, the organisational climate scale is conducive to this study in that it makes a particular association with a measure of readiness for change.

There are nine dimensions of operating climate encompassed in McNabb and Sepic's (1995) climate scale. These dimensions were selected by these theorists as they appeared to best represent what Schneider and Reichers (1990, p. 22) define as the shared perceptions of the way things work around here, and Kopelmang's (1990, p. 290) definition of "meaningful interpretations of a work environment by the people in it" (in McNabb & Sepic, 1995, p. 378).

McNabb and Sepic's (1995) measurement of climate include Litwin and Stringer's (1968) climate dimensions. These include: structure, responsibility, reward, risk, warmth, support, standards, conflict and identity,

Subjects were asked to indicate on a seven-point Likert type scale the degree to which the particular item describes his/her organisation prior to the merger. The response options range from 'very definitely describes your organisation' to 'does not describe your organisation'. D.E. McNabb (personal communication, June 20, 2000) said that that if a negative climate based on the scores developed by the instrument exists, one can intuitively conclude that a change initiative is less likely to be welcomed or accepted. Furthermore the climate measure is measured globally and not according to the nine dimensions. In the present research, the organisational climate scale in company one yielded a score of .92, and in company two a score of .91.

Dependent Variable

Readiness for change

In order to assess employee attitude to the merger, a readiness for change scale focusing on employee feelings and behaviours towards the change was used. (see Appendix E). The readiness for change scale incorporated in the study was developed by Hanchpern (1998). In developing this instrument, Hanchpern (1998) identifies behaviours which are required of participants and relate to aspects of organisational development. The items are included to measure several aspects of readiness for change. These aspects are promoting aspects of change (6 items); participating in the change (4 items); and resisting the change (4 items). The scale has subjective statements assessing how individuals feel and act towards the change. Subjects were asked to indicate on a seven-

point Likert type scale the degree to which they agreed and identified with the subjective statements. Three pilot studies were conducted by Hanchpern (1998) assessing the reliability of the readiness for change scale. The reliability scores elicited from the pilot studies were: .84; .89 and .87 respectively, thus indicating good internal consistency. In the present research, the readiness for change scale in company one yielded a score of .86 and in company a score of .69.

Data Analysis and Statistical Procedures

The following sections detail the statistical techniques utilised in the analysis of results. The discussion begins with a description of the biographical analysis used; thereafter the statistical analyses are discussed in accordance of the research questions of the current study. A significance level of $\alpha = .05$ was chosen. According to Kaplan and Saccuzzo (1997) the .05 alpha level of probability is considered as a good 'fail safe' standard because it is both convenient (most statistical tables show 5% values) and stringent enough to guard against an insignificant result (that is, the null hypothesis is true) as significant. A .05 level of significance was selected for the present study in order to reduce the potential for making a type one error (Anastasi, 1988).

Biographical Analysis

An analysis of the biographical data for the participants of the study was conducted. Percentages and frequencies were calculated for age, gender, population group, education level, language, employment status and job title. Comparisons were made between the two different companies using chi-squared analyses. Mean and standard deviations were also calculated.

Comparisons between the two groups were done using a non-parametric test or distribution free test. This was chosen over a parametric version because the samples being compared were of very different sizes (company one had 57 subjects and company two had 88 subjects). Non-parametric tests do not rely on very seriously restrictive assumptions concerning the shape of the sampled populations (Howell, 1995). A disadvantage of non-parametric measures is that they usually have less power efficiency than do parametric methods and are therefore less likely to detect a population difference (Howell, 1995; McCall, 1994).

A Pearson's chi-square analysis was used in the present study to determine whether the two groups of subjects from each company differ in the relative distribution of observations among several discrete and mutually exclusive categories (McCall, 1994).

A number of assumptions and conditions must be fulfilled in order to use this test.

1. The samples must be independent of each other.
2. The subjects within each group must be randomly and independently sampled.
3. Observations must be discrete and mutually exclusive.
4. The sample size must be relatively large

(McCall, 1994).

All of these assumptions were adequately met in the study.

Aims 1 and 2

The first two aims of the study were to examine: 1) the relationship between employee disposition (sense of coherence) and employee readiness for change across two different organisations; 2) the relationship between employee perception of the context factors

(organisational climate) and employee readiness for change across two different organisations.

In order to establish the relationship between the variables in the present study, a correlational technique was utilised. Pearson product-moment correlation coefficients were calculated in determining the degree of association between the variables. The correlation expresses a relationship between two variables, such that they are said to vary together (Bailey, 1982). This means that if a change in variable x is accompanied by a change in variable y , the variables are related. The strength of the relationship is determined by the degree of correspondence between the correlations in scores of another variable. The measures of strength are known as correlation coefficients. Hence, while the correlation is the first step in establishing a causal relationship, the correlation coefficient merely represents the degree of observed linear association between the two variables and not the extent of their causal relationships (McCall, 1994).

According to Cronbach (1984), the correlation coefficient is a numerical index that reflects the degree of the relationship between the two variables, which are linearly related. The correlation coefficient is symbolised as r and its numerical value may vary between -1.00 and $+1.00$. The sign of the coefficient indicates the direction of the relationship (either positive or negative) and the magnitude thereof. A value of $.00$ is indicative of no linear relationship.

With reference to the current study, the correlation analysis tested:

- a) the degree of association between each independent variable (organisational climate and sense of coherence) and the dependent variable (readiness for change);
- b) the degree of association of each of the three subscales in the measure of sense of coherence (meaningfulness, manageability and comprehensibility) with the dependent variable (readiness for change) and independent variables (organisational climate); and (sense of coherence).

Aim 3

The third aim of the study was to examine which set of independent variables (sense of coherence and organisational climate) was most strongly related to the dependent variable (readiness for change) across two different organisations.

In order to determine the relative contribution of each of the independent variables to the dependent variable, the statistical analysis employed was multiple regression. According to Breakwell, Hammond and Fife-Schaw (1995) "multiple regression utilises the notion of partitioning of variance to find the optimal prediction of one variable" (p. 365). In this research question, it is the manner in which both sense of coherence and organisational climate predict readiness for change. This analysis yields regression coefficients which provide an indication of which independent variables are significant and the amount of variance they explain individually in relation to the independent variables (Edwards, 1985). Of greatest relevance to this research question is the fact that a regression analysis yields the R square which indicates the amount of variance which is explained in the dependent variable (readiness for change) by the independent variables (sense of coherence and organisational climate).

A stepwise method was selected as this determines the best model of fit by selecting the best combination of predictors for accounting for the criterion variance (Edwards, 1985). According to Breakwell, Hammond & Fife-Schaw, (1995) a stepwise regression is where the model of best fit for a particular dependent variable is constructed statistically in a step by step fashion (Hocking, 1976). A backward stepwise procedure was conducted which used all the possible predictors and took them out one at a time until a more parsimonious but almost equally accurate prediction results (Breakwell, Hammond & Fife-Schaw, 1995). In this examination, sense of coherence was examined as a total score in determining its relative predictive power. In addition, the subscores of the construct were also focused on in order to examine the relative contribution of each component to readiness for change.

Additional Analyses

Independent samples t test

An independent sample t-test was undertaken on the data to detect whether organisationally statistically significant difference existed within the variance of companies one and company two on each of the variables. Hence, this test was conducted as a method of comparison in order to assess whether significant differences existed between organisational climates, sense of coherence and readiness for change on the groups drawn from the two companies utilised in this study. 't' tests are a common univariate method that have as their aim, the testing of significance which is employed to judge the tenability of the null hypothesis of no relation between variables (Rosenthal & Rosnow, 1991). The focus of t-tests thus rests on the comparison of means of two groups: a sample and population paired sample, or two independent samples (Kerlinger, 1986). Possibly the most common use of the t-test involves testing the difference

between the means of two independent groups against the background of intra-group variability (Howell, 1995). It was possible to conduct such an analyses in the current research as the two groups were presumed to be independent of one another. This assumption implies that the results in one group are not influenced by the results in the second group.

The following assumptions should be considered when performing independent sample t-tests, which is a parametric statistic.

1. The assumption of normality underlies all parametric statistics, especially t-tests. This assumption dictates that the sample under consideration be drawn from a population that is normally distributed. It is said that if the populations from which the samples are drawn are not normal, then statistical tests that depend on the normality assumption are vitiated (Kerlinger, 1986).
2. There should be a homogeneity of variances of the two populations under consideration. That is, the variances within the groups should be statistically the same. The reason for this statement is that if variances do in fact differ, it inflates intra-group variances, once again nullifying the test (Kerlinger, 1986).
3. A third assumption is that the measures to be analysed are continuous measures with equal intervals.

The data was analysed to ensure that the assumptions were met before continuing with the t-test

First order partial correlation

First order partial correlations were conducted in order to expand on the associations found between the variables through the correlational analysis, thus strengthening the findings of the established relationships in the study. First order partial correlations are designed to measure more directly the contribution of each variable to the variation of the dependent variable (Clarke & Clarke, 1972). The partial correlation coefficient is a measure of the strength of the relationship between two variables after controlling for the effects of the other variable(s) (Kleinbaum & Kuper, 1978). Interpretation of the partial correlation coefficients is done in a similar way to that of simple correlation coefficients (Clarke & Clarke, 1972). The order of the partial correlation coefficient depends on the number of variables that are being controlled for.

The present study used partial correlations to test the relationship between sense of coherence (independent variable) and readiness for change (dependent variable), partialising out/controlling for organisational climate (independent variable). Hence, this study conducted first order partial correlations in that only one variable was controlled for.

In first order partial correlations, three variables are involved, one of which is held constant. These variables are numbered 1, 2 and 3 formerly. r_{12} indicates the zero order correlation between variables 1 and 2, the symbol for partial correlations between variables 1, 2 and 3 held constant is $r_{12.3}$ (Clarke & Clarke, 1972).

$$r_{12.3} = \frac{r_{12} - r_{13}r_{23}}{\sqrt{1-r_{13}^2} / \sqrt{1-r_{23}^2}}$$

CHAPTER SEVEN

RESULTS

Biographical Analysis

The results of the analyses conducted on the biographic characteristics of the sample are presented in Chapter 6. In addition, a Pearson's chi square analysis was conducted in order to determine whether the two groups differed in the relative distribution of observations among the biographic characteristics of age, population group, education level, and language. The chi square analysis showed no significant difference in the range of age ($\chi^2_{(5)} = 3.47$; $p = .628$), gender ($\chi^2_{(1)} = 0$; $p = 1$); population group ($\chi^2_{(3)} = 5.389$; $p = .1115$); education level ($\chi^2_{(4)} = .5019$; $p = .285$) and language ($\chi^2_{(6)} = 6.648$; $p = .335$) across the two companies.

Table 3

Means and standard deviations, comparisons on sense of coherence, organisational climate and readiness for change across the two companies

MEAN (SD)							
Sample	N	SOC Tot	Manage	Meaning	Compre	Org Clim	Read for change
Company 1	57	4.5448 (.9623)	4.2295 (1.0791)	5.0673 (1.1565)	4.3754 (1.1408)	4.1739 (.6679)	5.4898 (.9554)
Company 2	88	4.6454 (.9223)	4.2585 (1.0844)	5.2765 (1.1587)	4.4523 (.9935)	4.4658 (.6619)	5.2194 (.8380)