

CHAPTER 6

RESEARCH DESIGN AND METHODOLOGY

6.1 INTRODUCTION

In this chapter an outline of the research approach, design and methodology that have been used in this thesis is discussed and outlined.

The study period was 2009 to 2012, starting in mid 2009, with the introduction of the Neethling creativity tools in the Ellerines business, and further enhanced throughout 2009 into 2010, with the introduction of additional strategy models and creativity frameworks. The purpose of these interventions were to enhance Ellerines' business performance, and enable continuous performance improvement tracking from 2010-2012.

Ho: Implementation of a deliberate creativity framework will enhance business performance

H1: Implementation of a deliberate creativity framework will not enhance business performance

The following objectives were crafted at the start of the study.

- Find or develop a creativity intervention that could impact or change business performance.
- Develop a retail specific creativity framework that would transform a business into a high performance entity.
- Develop a creativity programme that could be used to develop a high performance team culture.
- Use of a creativity framework to implement a change management strategy that would ensure sustained profitability.
- Develop a creativity training intervention as a means to keep the workforce energised through various synergy interventions.

By implementing and executing the Conceptual Deliberate Creativity Framework (CDCF) successfully within a company, it can be expected using a change management process to have a direct impact on business and behavioural performance.

“Implementation of a Deliberate Creativity Framework will enhance financial and behavioural performance of a company”.

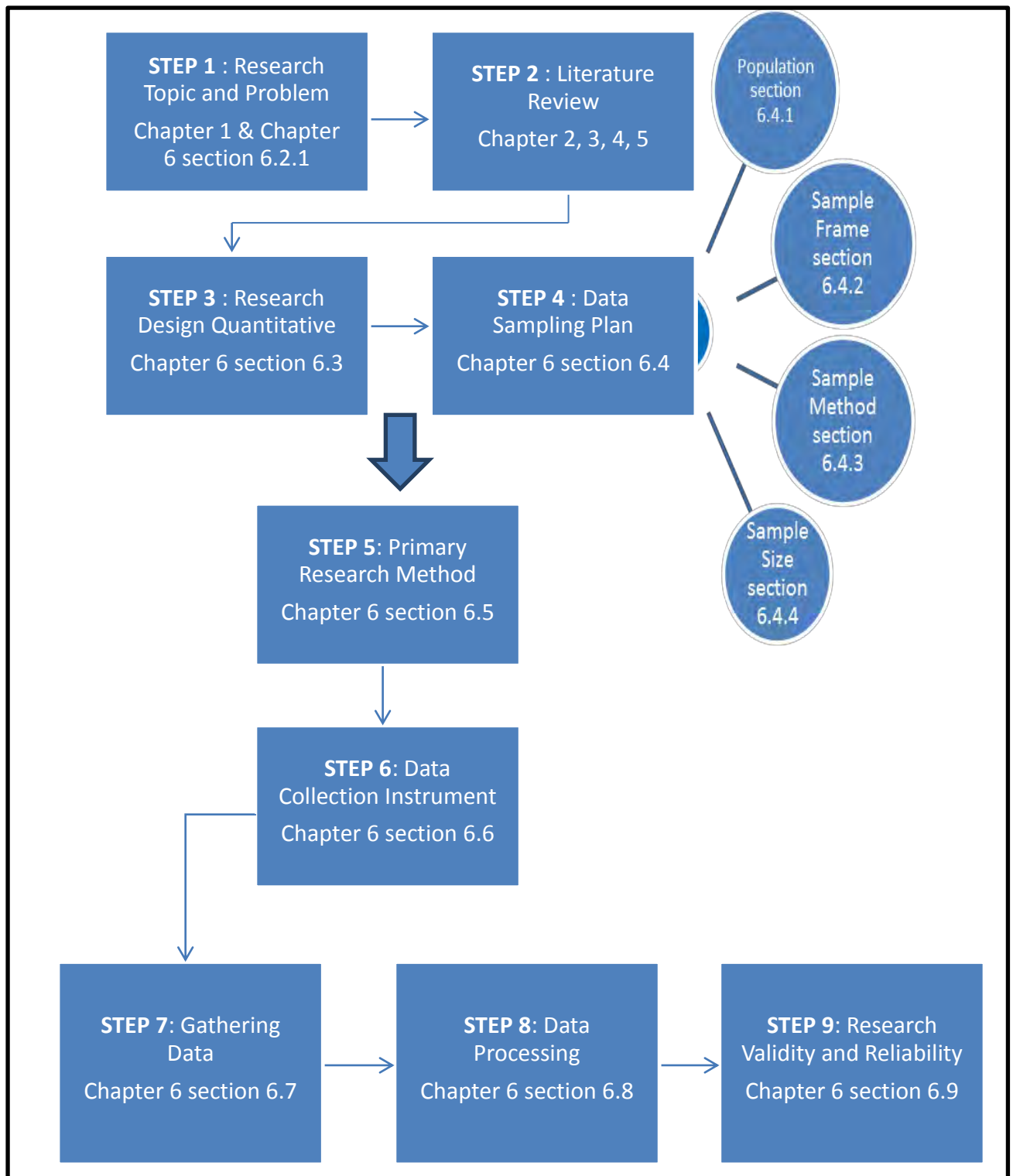
Despite the fact that a few of these objectives had been accomplished within the literature review in chapters 1, 2 and 3, the research strategy and methodological analysis in which a number of these objectives had been dealt with, together with the principles of research methodology, will be outlined in this chapter.

In considering that quantitative together with qualitative research techniques had been considered for this research study, primarily quantitative research techniques were used.

Step 1 was discussed in **chapter one**, with outlining and identifying the research problem and further highlighting the research objectives. **Step 2** details a retail industry overview, together with a comprehensive creativity literature review, discussed in **chapter two, chapter three, chapter four and chapter five**. **Steps 3 to 9** cover the essence of the research process covered in the research study discussed in **chapter six**. Furthermore, validity and reliability of the statistics are presented with the research findings in **chapter seven**.

In summary, chapter six outlines the research process deployed in this study and further details the research problem, primary and secondary objectives, research methodology and design, sampling framework, data collection instruments and techniques, and in addition the process of gathering and processing of the data.

Figure 6.1: The research process



Source: Neuman (2009:11); Welman *et al.* (2006:34) and Maree (2013:36)

6.2 RESEARCH METHODOLOGY

6.2.1 Research Topic, problem identification and objectives [Step 1 and Step 2]

Furniture retailing in SA is a complex and highly competitive industry. Over the past decade, the furniture retail industry has experienced slow growth, declining profits and stagnation with regards to retail practices and business model inefficiencies. As a result of the stagnation the furniture retail industry has been subjected to dismal financial performance by furniture retailers, making the furniture sector the most undesirable for local and international investors. To ensure sustainable long-term growth and profitability, the furniture retail industry is in need of a new operating and retailing paradigm, in the form of an enhanced operating and performance framework that will enhance retail trade and thus ensuring the survival of many furniture retailers within South Africa.

Thus, the need exists to adopt a uniquely different approach in the form of a creativity-driven strategy that needs to challenge current paradigms, discard obsolete furniture retail practices, and ultimately redefining furniture retailing by creating new furniture retailing operating models. In considering the use of a deliberate creativity-driven approach, the opportunity arises to catapult furniture retail onto a new performance curve that ultimately creates shareholder value through an enhanced customer proposition.

This holistic business innovation and creative approach seek to cement the advantages of continuous reviewing of business model relevance, in conjunction with the associated outcome, benefits, business decision trade-offs and risk profile (Asparaa *et al.*, 2010:51). Hesselbein *et al.* (2007:9) continue to comment that organisational transformation can be defined as a journey. Any sort of significant change undertaking must begin by outlining the journey's destination. It could be a drastic enhancement in operating performance, and not only financial success. Focusing on lowering cost may lead only to retrenchment, without any real improvement in the business's efficiency.

In framing and identifying the furniture retail problem, the primary objective of this research has been to establish whether a retail deliberate creativity intervention could enhance the overall business performance within the furniture retail sector in South

Africa, and in the process enhance financial success through improved profitability and shareholder value.

6.3 THE RESEARCH DESIGN [STEP 3]

Research design is often described as a process or method of working on research according to specified conditions. A design serves as an approach regarding the way a person intends to undertake a specific task, and within research this plan of action delivers a framework that will inform the researcher with regards to which theories, techniques and instruments the research study is likely to be based upon. It comprises planning and executing the research study project beginning with problem recognition, furthermore advancing through to analysis of the data (Maree, 2013:81). In selecting the appropriate research design, consideration should be given to the kind of study undertaken, and clearly understanding the research objectives, and thus the research design is a plan or blueprint indicating how the researcher will conduct the research (Mouton, 2013:55).

Within this research study, a structured research design was deployed to ensure alignment and achievement of the research study objectives. This study can be described primarily as a quantitative research study that comprises three stages within the research design process: *Stage one* commencing with an overview of the furniture retail landscape internationally and in SA, continuing with *stage two* with an extensive creativity literature review. *Stage three* consists of a range of empirical and non-empirical questions, in seeking answers to the problem statement and addressing the research study objectives.

Empirical questions included exploratory questions in identifying the critical success factors in enhancing retail business performance and the impact of business profitability, together with identifying the distinguishing features of an appropriate conceptual deliberate creativity framework.

The researcher also included correlational questions in establishing the link between business performance and individual and team brain profiles (the way teams and individuals think, act and respond). It was investigated whether there is a correlation between business performance and brain preferences, as well as establishing the

difference between a control group (no exposure to a creativity intervention) and intervention group (extensive exposure to a creativity intervention). Evaluative questions included establishing whether a deliberate creativity intervention has had an impact on business performance within Ellerines business, and has the deliberate creativity intervention been the main catalyst in driving the enhancement in profitability of the Ellerines business.

As part of the procedure of scientifically exploring researching problems, the researcher may need to differentiate regarding the different research questions and phases commonly known as the empirical cycle (Welman *et al.*, 2006:14).

Table 6.1: Empirical study overview

<i>Empirical</i>	<i>Outcome</i>
Case study	In-depth quantitative description of four Retail brands (Ellerines, FurnCity, Town Talk, Savells Fairdeal), 556 retail furniture branches (geographically dispersed across South African) that have / have not implemented a conceptual deliberate creativity framework (CDCF) or strategy.
Statistical modeling and computer simulation studies (SPSS v22, 2013)	Capturing and validating actual performance data within the real world (retail environment), by means of statistical techniques (Data Analysis Plan table1.1), and branch financial performance data within the execution of the conceptual deliberate creativity framework (CDCF).
Evaluation Research: implementation (process) evaluation	Whether a conceptual deliberate creativity framework (CDCF) or creativity intervention has been adequately implemented (process evaluation studies); whether the target group has been adequately covered and whether the intervention was implemented as designed.
Field/natural experimental designs	Quantitative study providing broad overview of a representative sample of a large population. Four retail brands (Ellerines, FurnCity, Town Talk, Savells Fairdeal), 8 provinces in SA, six operational areas comprising 556 branches and 4270 individuals

Source: Mouton (2013:146)

Non-empirical questions included conceptual questions regarding creativity and deliberate creativity as a means to enhance business performance. Theoretical questions seeking to establish the most accepted creativity and retail models, definitions or theories of retail business enhancement and creativity business enhancement. Research problems are often formulated in the form of research questions as a means of directing focus on the research problem, which requires a distinction between empirical and non-empirical questions (Mouton, 2013:53).

Table 6.2: Non-empirical study overview

<i>Non-empirical Study</i>	<i>Outcome</i>
Theory-building or model-building studies	Investigation of most widely used creativity and business enhancement models and developing new conceptual deliberate creativity framework (CDCF) and related theories to explain particular retail performance phenomena.
Literature Reviews	Creativity study to provide an overview of scholarship in the deliberate creativity discipline through an analysis of trends and debates.

Source: Mouton (2013:146)

Descriptive (investigation existing circumstances), correlational (the relationship between variables) and quasi-experimental (comparison of non equivalent groups) methods were used in this research study. By implication the researcher could not control all confounding variables and thus cannot discard alternative explanations for the results achieved. Given the nature of this quantitative research study, all responses and data were either captured into or extracted directly from a data repository of the specific data instruments (**section 6.6**) and raw data analysed to deliver research findings discussed in **chapter seven**.

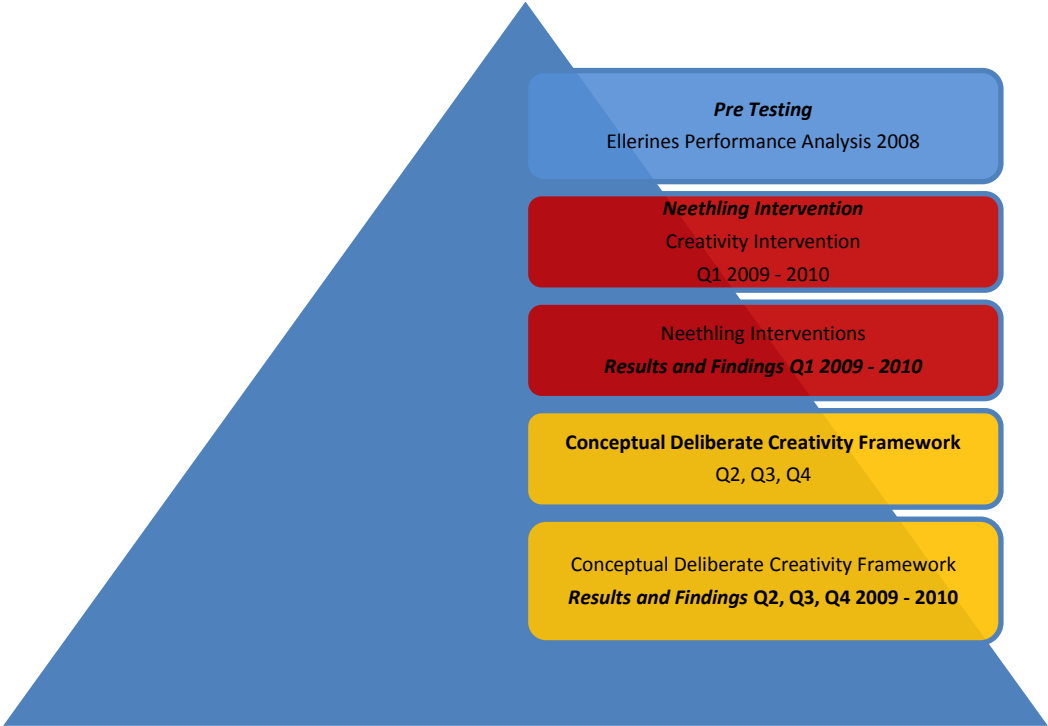
Subsequently following the research design, the selection of the participants to include in the research study was done by the researcher (**Step 4**), with the intention of developing a sampling plan.

6.3.1 Pre and post test design

Pre-test-post-test control group models (non equivalent control group design) are best with regard to researching outcomes of instructional enhancements and generally are prevalent as part of academic research (Campbell & Stanley, 1966:13). These are typically commonly examined through the use of an ANOVA or MANOVA. Benefits associated with the ANOVA and MANOVA methods are described and explained utilizing SPSS-X analyses of fabricated data sets (Dugarda & Todman, 1995:181).

Figure 6.2 describes the **pre and post testing** process that had unfolded within the Ellerines business from 2008 to 2012, before and after the implementation of the creativity interventions. To provide broader context to the period being researched and the timeline impact of the various creativity and strategy interventions, a graphical illustration follows.

Figure 6.2: Pre and Post Testing timeline 2008 to 2010



Source: Researcher own construction, 2013

1. **Pre Testing – before creativity intervention:** period of underperformance within the Ellerines business, Ellerines as a loss making business, demotivation, disempowerment, and disillusionment.
2. **Neethling Creativity intervention:** a breath of fresh air, light at the end of the tunnel, realisation of the possibility to function differently, to change the Ellerines performance trend and achieve success. Birth of the research study and research design.
3. **Neethling Creativity Intervention :** Results and Findings
4. **Conceptual Deliberate Creativity Framework:** from ordinary to extraordinary performance, from good performance to functioning beyond what was thought possible.
5. **Conceptual Deliberate Creativity: Results and Findings**

Figure 6.3 outlines the Pre and Post Test framework adopted in this thesis, and thus can be graphically illustrated as indicated below:

1. A research architecture consisting of the control and intervention retail branches was developed as the test group design (stage one).
2. Financial metrics compiled for both control and intervention groups before the creativity intervention (stage one), with financial and statistical analysis to determine the baseline performance of the control and intervention groups (Q4 2008).
3. Preliminary implementation of the Neethling creativity models and creativity tools at the end of stage one and the measurement period set at one full financial quarter (Q1- 3 months)
4. Implementation of additional creativity tools, namely the NBI brain preference profiling and OWI questionnaire were administered in **stage two**; to establish a reference benchmark, and a post-test survey for **stage three** was administered to evaluate the impact of the preliminary creativity interventions.
5. A development phase (conceptual deliberate creativity framework) was implemented in **stage three**, with testing continuing with the control and intervention group, whereby all creativity and strategic interventions were implemented across the Ellerines business.
6. A combination of financial and statistical data had been processed, to outline the impact of the creativity interventions in **stage three** (F2010 versus F2011).

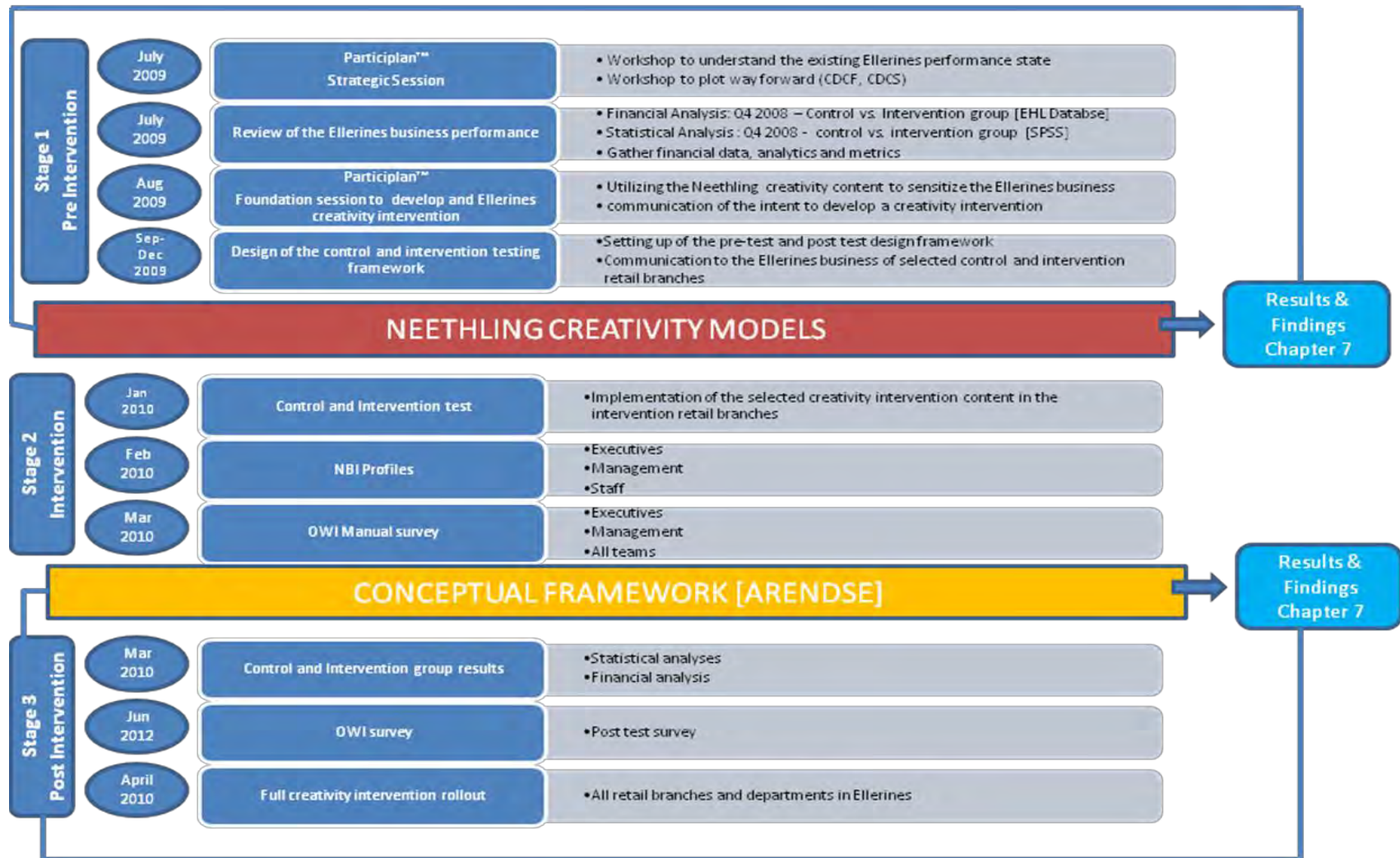
7. Full deliberate creativity and strategic interventions (CDCF, CDCS & CDCIP) were rolled out into all Ellerines branches and functional departments in **stage three**.

6.3.1.1 Neethling Creativity Model Pre and Post Test **[STAGE 1]**

As outlined in section 6.3.1, the pre and post test framework was designed to capture specific performance (financial and behavioural) with the implementation of the respective creativity interventions. The Neethling creativity pre and post test structure included identifying the initial control and intervention groups and measuring the performance of the Ellerines control and intervention groups' financial performance before any creativity intervention was implemented to set the baseline financial performance reference to test the impact of the Neethling creativity intervention after implementation of the Neethling creativity programmes. The Neethling Creativity Model Pre and Post Test can be graphically illustrated as follows.

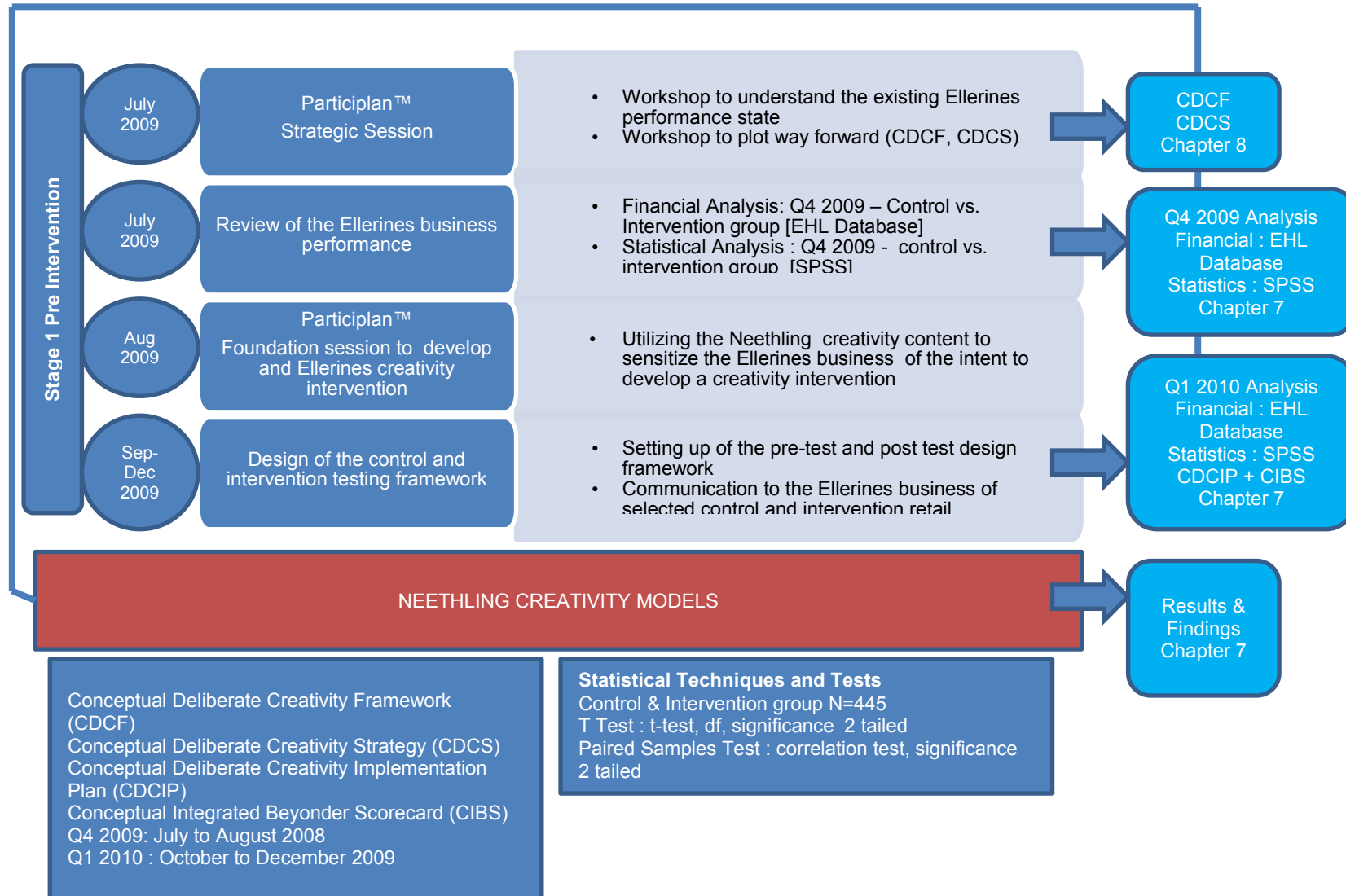
Figures 6.3 and 6.4 follow on next pages

Figure 6.3: Pre and Post Test framework



Source: Researchers own construction 2013

Figure 6.4: Neethling Creativity Model Pre and Post Test Framework



Source: Researchers own construction 2013

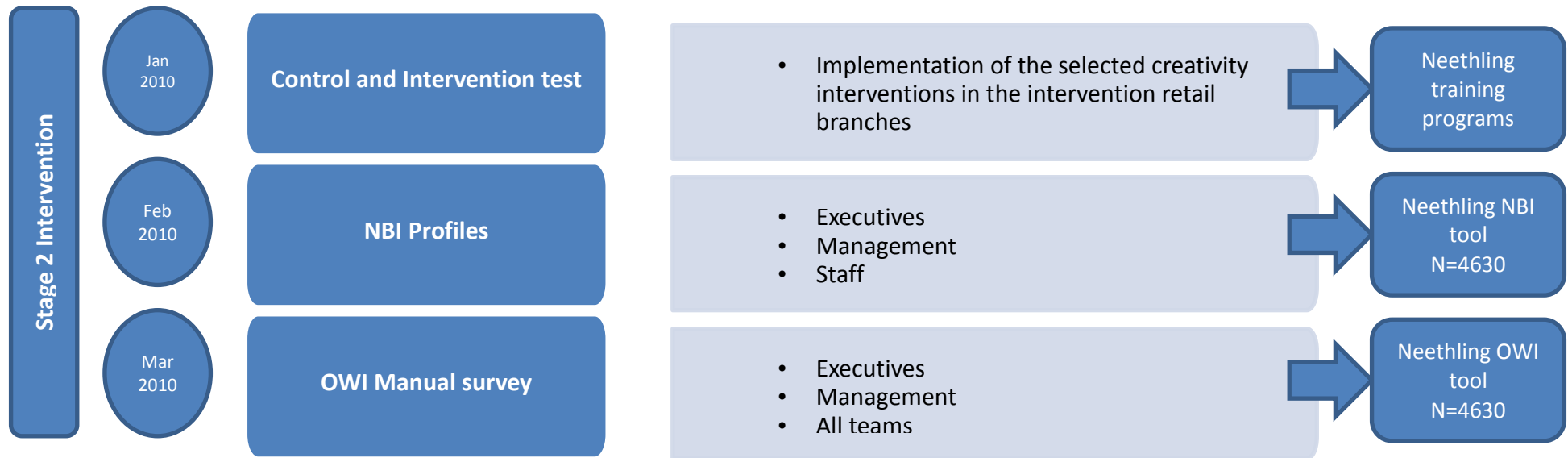
6.3.1.2 Additional Creativity Tools **[STAGE 2]**

After the initial financial and statistical analysis of the control and intervention groups performance was done, additional Neethling creativity tools was implemented to complement the findings of the initial Neethling pre- and post-testing, and also prepare for the full implementation of the conceptual deliberate creativity framework (CDCF). The Neethling NBI and OWI was used as a basis to further understand the impact of creativity within the workplace and set the foundation for the full implementation (CDCIP) of the conceptual deliberate creativity framework (CDCF), with the objective of further performance enhancement of the Ellerines business. The additional creativity tools are graphically illustrated in **Figure 6.5**.

6.3.1.3 Conceptual Pre and Post Test Framework **[STAGE 3]**

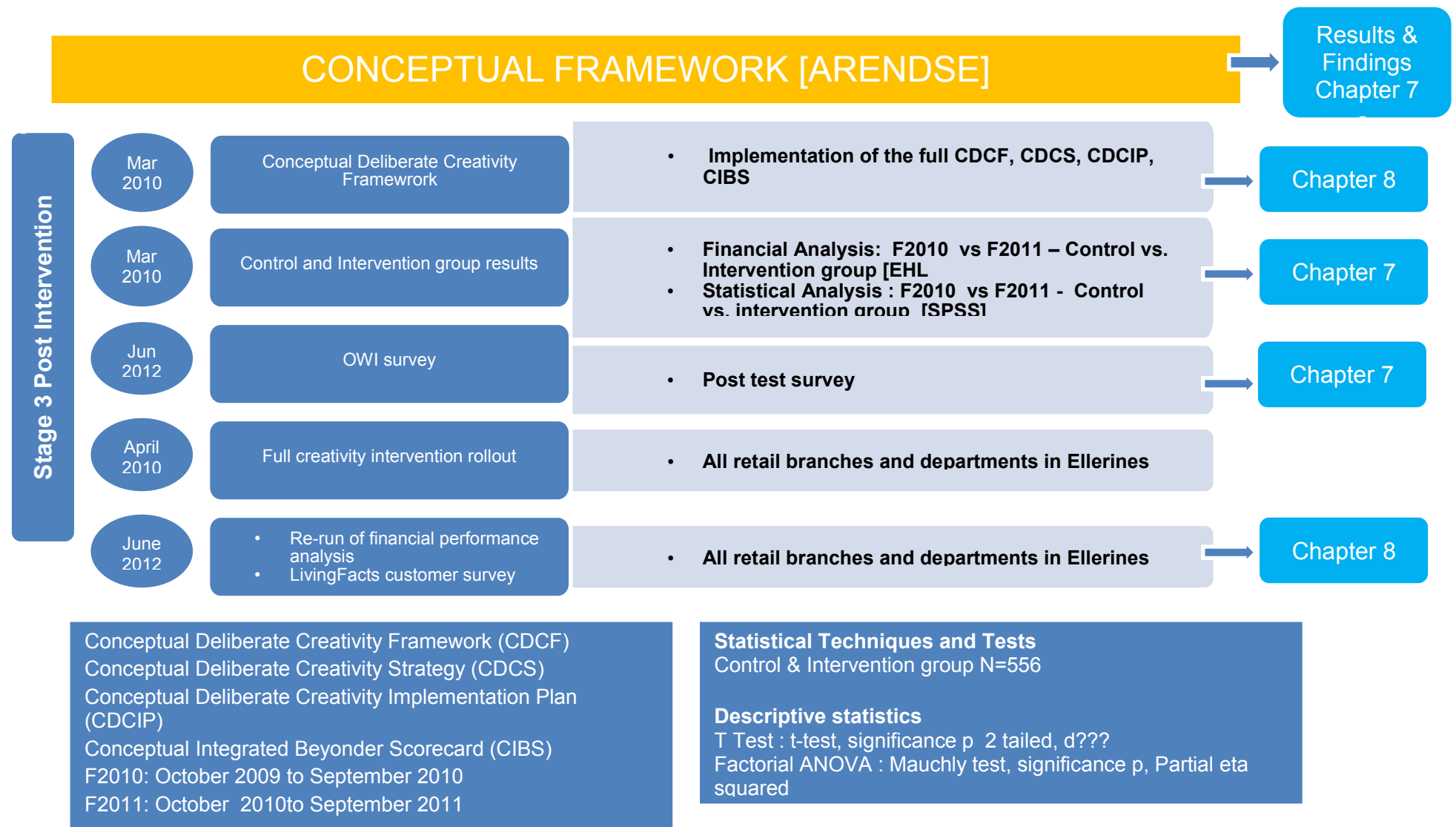
To drive further business and performance enhancement within the Ellerines business, the researcher had implemented and executed additional creativity interventions as a means to further enhance the financial and behavioural performance of the Ellerines brand. Within stage three of the pre- and post-testing framework, the full implementation of the CDCF, CDCS, CDCIP and CIBS had been executed by the researcher and the Ellerines EXCO team. The impact of the full implementation was measured within the same control and intervention group structure, with a comprehensive financial and statistical analysis on the control and intervention groups respectively (**Figure 6.6**) over the 11-month period (F2010-F2011), and further compared to an external customer survey (LivingFacts™ **Addendum 7A**) to correlate financial performance. The conceptual pre- and post-test framework is graphically illustrated in the **Figure 6.6**.

Figure 6.5: Additional Neethling creativity tools



Source: Researcher own construction, 2013

Figure 6.6: Conceptual Pre and Post Test Framework



Source: Researchers own construction 2013

6.4 DEVELOPMENT OF THE SAMPLING PLAN [STEP 4]

Sampling usually requires the selecting or extraction of a proportion associated with a chosen population, to incorporate in a research study. A population commonly includes all the individuals which researchers are contemplating studying. Nonetheless, it is almost always impossible for researchers to incorporate everyone in the population, thus a sample is chosen that is a subset of the population and also a smaller number of participants as compared to the total quantity of individuals within the population (Maree, 2013:68).

Quantitative researchers identify one or a few variables that they intend to study and then collect data specifically related to those variables. This data is collected from the population or from one or more large samples that represent the population (Leedy & Ormrod, 2013:99). Neuman (2007:218) outlines various stages within the sampling process, namely sample population identification, sample frame identification, selection of an appropriate sample method, adequate size of sample and gathering sample information. The following sections follow the subsequent steps as recommended by Neuman (2007:218).

Table 6.3 summarises the population and selected sample group of this research study that had been undertaken over three financial years in the periods 2009 to 2012.

Table: 6.3: Sample group summary

<i>Population</i>	<i>Sample Group</i>	<i>Population Rationale</i>	<i>Research Technique</i>	<i>Data Analysis</i>
Retail Brands	Ellerines: 312 branches FurnCity: 71branches Town Talk: 52 branches Savells Fairdeal: 121 branches	Multiple brand test	Quantitative	SPSS + EHL Financials
Customer Segment	LSM 1-5	Multiple customer profile	No research	EHL Financials + Living Facts
Number of Participants Control Group	1252 randomly selected	Branch teams	Quantitative	SPSS + EHL Financials

Number of Participants Intervention Group	2773 randomly selected	Branch teams analysis	Quantitative	SPSS + EHL Financials
Operational Structure	Ops Division 1: 89 stores Ops Division 2: 112 stores Ops Division 3: 92 stores Ops Division 4: 101 stores Ops Division 5: 85 stores Ops Division 6: 77 stores	Division analysis	Quantitative	SPSS + EHL Financials
Geographic Spread	Western & N Cape: 89 stores Free State: 112 stores Kwazulu-Natal: 92 stores Gauteng & Tshwane: 101 stores Limpopo: 85 stores Mpumalanga: 77 stores	Cross-section of South Africa	Quantitative	Observation
Like-Store Spread	55%:45%	Similar store dynamics	Quantitative	SPSS + observation
Good Performing Stores [Control]	121	Stores exceeding profit targets	Quantitative	SPSS + observation
Poor Performing Store [Intervention]	335	Stores not exceeding profit targets	Quantitative	SPSS + EHL Financials + observations
Regions [Control]	25 randomly selected	Cross-section of South Africa	Quantitative	SPSS + EHL Financials + observation
Regions [Intervention]	39 randomly selected	Cross-section of South Africa	Quantitative	SPSS + EHL Financials + observations

Source: Researchers own construction 2013

A sample of 556 furniture retail branches in Ellerines Holdings Limited (EHL), using NBI profiles for 4881 staff members in the retail operations divisions, and the organisational wellness survey (OWI) feedback of 4881 staff members within the 556 branches was chosen. The implementation of the deliberate creativity interventions consisted of a

comparison of 413 randomly selected intervention branches with 143 randomly selected control branches to compare performance parameters. Performance parameters include: Sales, Gross Profit, Profit before Tax (PBT), operation expenditure (opex) and staff performance management scores.

6.4.1 Population

A population or unit of analysis is a complete set of cases from which sample selection is done (Welman *et al.*, 2006:52; Leedy and Ormrod, 2013:216). The population in this research study includes retail industry workers in four retail brands within the Ellerines business and geographically dispersed across SA. The population further comprised head office functional department staff, operations department staff, and retail branch staff in 556 retail outlets, which include executives, senior management, middle management and retail operations branch staff.

6.4.2 Sample frame

A research worker operationalises a population through creating a specified listing that will closely approximate each of the elements within the population; this particular list is known as a sampling frame. An appropriate sampling frame is extremely important to effective sampling, as a mismatch involving the sampling frame together with the conceptual specified population is usually a principal source of error (Neuman, 2007:201).

A sample frame serves as a selection of population participants chosen to secure a sample (Aaker, Kumar & Day, 2005:177). Freedman, Pisani and Purves (2007:330) mention that the sample frame should satisfy the subsequent criteria:

- It ought to symbolise each of the factors of the population;
- There should be no replication of factors; and
- It needs to be devoid of unknown elements.

Within this study, the sample selection consists of retail stores within four retail furniture brands (Ellerines, FurnCity, Town Talk, Savells Fairdeal). All these retail brands are serving customers in the same target segments with similar customer profiles (LSM 1-5). A selected group of control retail stores (no deliberate creativity intervention) and

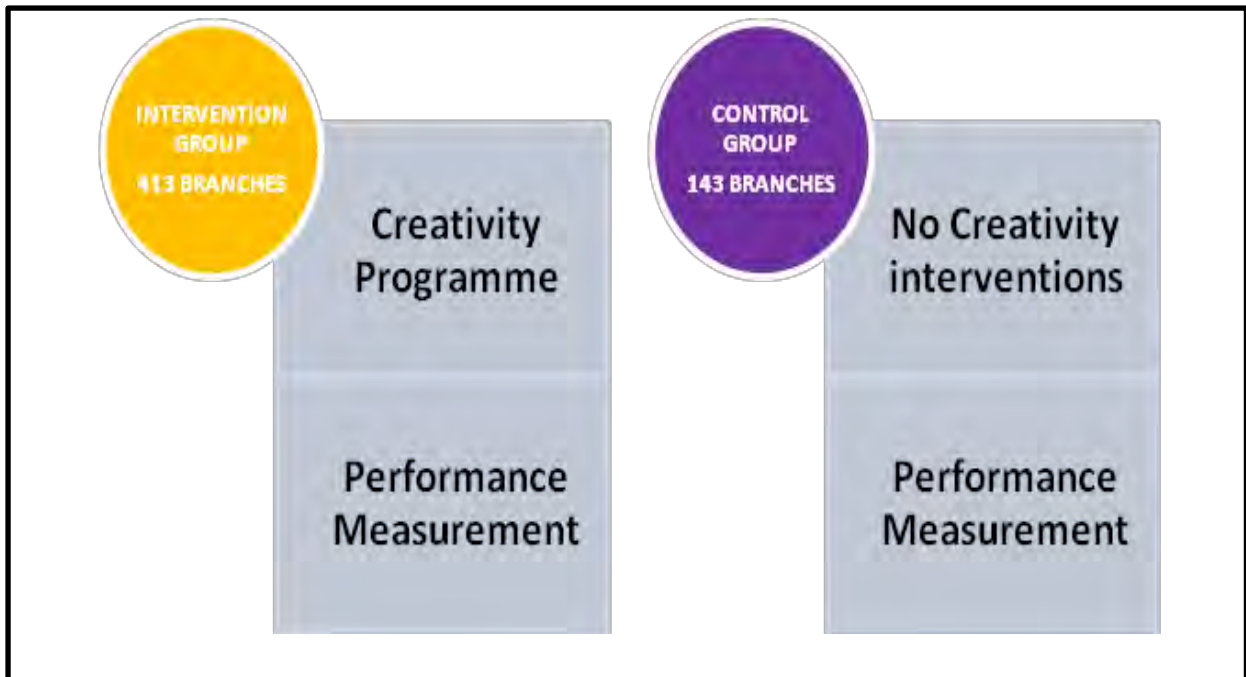
intervention retail stores (deliberate creativity intervention implemented) were chosen. Furthermore, six operations and regional retail divisions geographically spread across all provinces in SA were added. A representative dispersion of like-retail stores (retail branches with similar operations structures and business models), with a proportionate inclusion of good performing retail store (stores exceeding performance targets) and poor performing retail stores (store not achieving performance targets) were included within the control and intervention groups.

Listed below is an outline of the sample group and size that was used in the research study. A discussion of the sample and its characteristics is essential in order to understand the nature of the findings:

- 556 furniture retail branches
- 4881 furniture retail employees
- 413 randomly selected intervention branches (same sample population in pre- and post-testing)
- 143 randomly selected control branches (same sample population in pre- and post-testing)
- Management and executive group – 12 senior managers and executives, 64 regional managers, 30 middle managers and 30 supervisors.

Figure 6.7 outlines a graphical illustration of the control and intervention group sample, together with the selection structure of retail stores participants, also summarised in **Table 6.3**.

Figure: 6.7: Control and Intervention group illustration



Source: Researcher own construction, 2013

Following the sample selection from the retail population, the next step was determining the selection of some elements from the sample population, using the sample frame, and subsequently selecting the sampling method to be used.

6.4.3 Sampling method

Sampling approaches include two types of sampling, namely probability sampling and non-probability sampling. A non-probabilistic sampling approach (purposive, accidental and convenience sampling) was deployed in this research. A sample of all retail operations branches from all four retail brands (population) were selected on a basis of convenience that participants were accessible to the researcher and data could be captured at retail store level, as well as all retail branches' financial data were accessible through the Ellerines financial database. The sample in this research study may be deemed to be representative of the staff of Ellerines (total workforce 4261, sample size 4025). The results may be generalized to other companies in the retail sector where similar problems are faced.

Table 6.4: Sample size

<i>Sample</i>	<i>Data Retrieved</i>	<i>Data not Retrieved</i>	<i>Access Rate (%)</i>	<i>Sampling Instrument</i>
Financial performance data: 556 retail stores	556 stores	0 stores	100%	Ellerines financial database
Statistical data	556 stores	22	96%	SPSS version 22
<i>Sample</i>	<i>Questionnaires Distributed</i>	<i>Questionnaires Received</i>	<i>Response Rate (%)</i>	<i>Sampling Instrument</i>
Participants' brain profiles (NBI)	4217	3247	77%	NBI Tool
Participants' OWI	5950	5636	95%	OWI Tool
Customers	1230	1156	94%	Living Facts Survey Tool

Source: Researchers own construction 2013

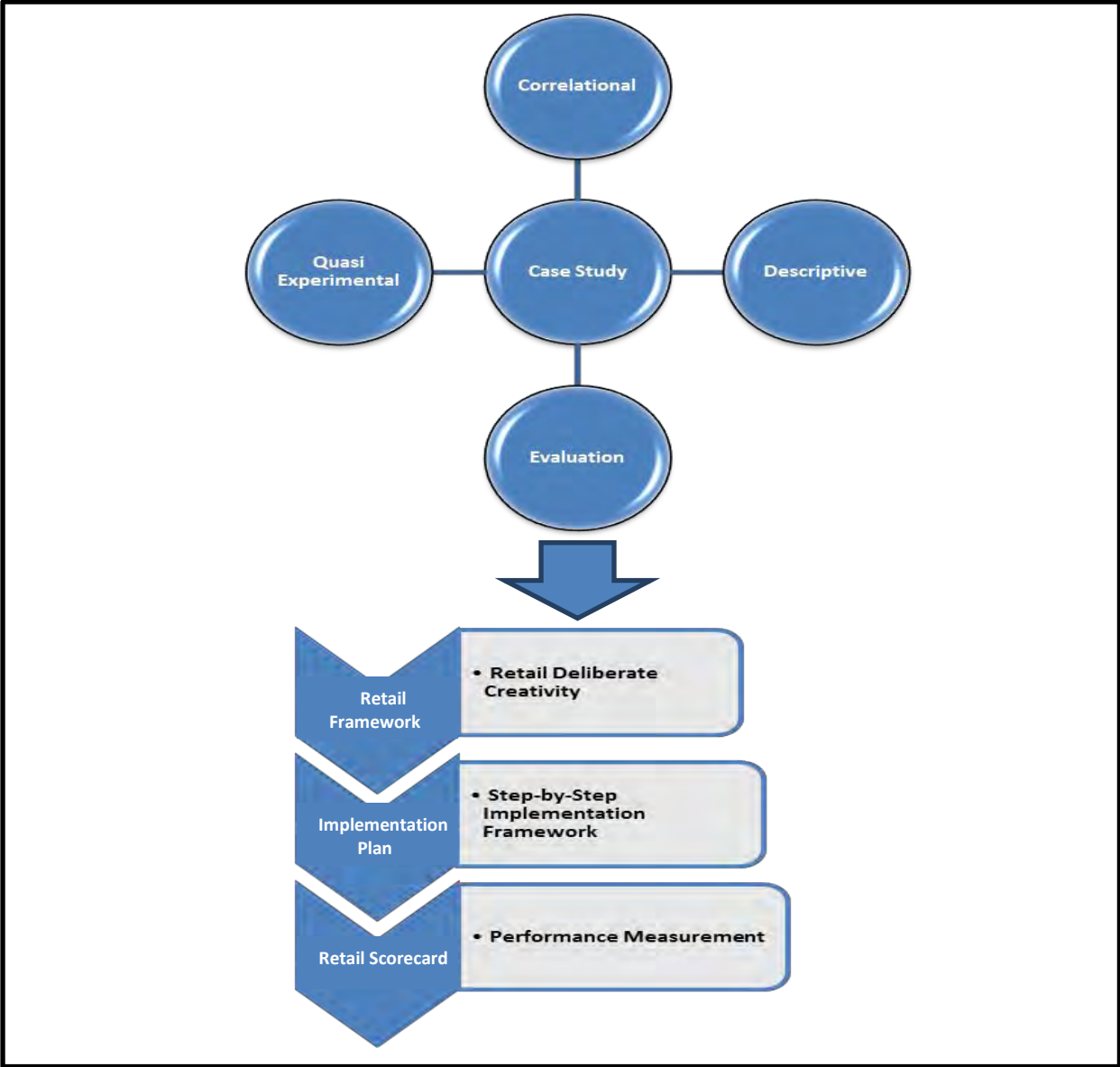
To ensure adequate data distribution, collection and capture, as well as the quality of data processing, the researcher had used independent data processing instruments within the research study detailed in the sampling instrument column and further discussed in **section 6.6**.

The subsequent section will outline the primary data collection methods used to collect and gather data from retail stores and sample group participants.

6.4.4 Data analysis

Primary data (brain profiles, organisational climate survey, customer experience survey) as well as secondary data (financial indicators) were used in this study. A combination of numeric and textual data analysis to substantiate findings and arguments was performed. Due to the nature of the deliberate creativity intervention the degree of control had been limited as the research had been conducted in natural field settings (Ellerines retail business environment). **Figure 6.8** outlines a graphical depiction of the different data analysis techniques that had been used within the research study to support the execution and implementation of the deliberate creativity intervention and the retail performance scorecard.

Figure 6.8: Research data analysis framework



Source: Researcher own construction, 2013

6.4.5 Data analysis plan

Table 6.5: Data analysis plan

Data Analysis Plan					
Research type	Question	Variables		Statistical techniques to be used	Reason for Choosing statistical technique
Descriptive	What is the nature of the responses received / how may these be described?	All categorical variables in the data set		Frequencies, percentages, graphical displays	Appropriate technique for describing categorical variables
		All scale variables in the data set		Measures of central tendency, shape and spread, graphical representations	Appropriate technique for describing
		Independent	Dependent		
Correlational	Is there a relationship between brain preference scores and financial indicators / performance scores?	Scores on the 4 quadrants	Financial indicators/ Performance scores	Pearson product moment correlation	Appropriate technique for establishing the relationship between 2 continuous variables
	Is there a difference in the financial indicators/ performance scores of respondents with different dominant quadrants?	Dominant quadrant	Financial indicators/ Performance scores	MANOVA: Independent samples t-test	Appropriate technique for testing the difference in mean scores of a continuous dependent variable in the various categories of a categorical independent variable

Table 6.5: Data analysis plan (continued)

Data Analysis Plan					
Research type	Question	Variables		Statistical techniques to be used	Reason for Choosing statistical technique
Mixed experimental design	Is there a difference in the financial indicators/ performance scores of the experimental and control group before the intervention?	Experimental / control group			Appropriate technique for testing the relationship between two categorical independent variables (one within subjects and one between subjects) and one continuous dependent variable
	Is there a difference in the financial indicators/ performance scores of the experimental and control group after the intervention?	Experimental / control group	Financial indicators/ Performance scores	MANOVA: independent samples t-test with one within subjects variable (Before and after intercantion)	
	Is there a difference between the before and after measure for the experimental group	Before / After intervention	Financial indicators/ Performance scores	and one between subjects variable (Experimental and control group)	
	Is there a difference between the before and after measure for the al group	Before / After intervention			
	Is there an interaction between the independent variables	Before / After intervention; Experimental / control group			

Source: Researchers own construction 2013

6.4.5.1 Descriptive research

At the most basic level, the research will have a descriptive component. Variables contained in the data set will be described using appropriate statistical techniques for the level of measurement. These will include such frequencies, means and standard deviations. The purpose of this will be twofold. On the one hand, it will provide an initial impression of the data for descriptive purposes. On the other, it will enable the

researcher to test the assumptions of further, multivariate analyses to be done, such as the assumptions of normality and the homogeneity of variance.

6.4.5.2 Correlational research

The study has a strong correlational component, where the relationship of the dependent variables (financial indicators and performance) with brain preference as well as membership of the experimental group, was investigated. Prior to the multivariate analyses described below, the relationship between the dependent variables (financial indicators and performance scores) and the dominant brain preference was determined by means of a MANOVA: Independent samples t-test. A Pearson correlation between the actual scores on the 4 quadrants and the dependent variables was calculated. The relationship between the dependent variables and membership of the experimental and control groups respectively was investigated by means of an independent samples t-test of one-way ANOVA. These relationships were also investigated by geographic region and the Ellerines divisional structure, within the following job levels:

- Regional Managers
- Branch Managers
- Sales Staff
- Executive Structure

6.4.5.3 Predictive study

In addition to correlation, the purpose of this study was to also determine the extent to which the implementation of a Deliberate Creativity programme can be used to predict financial performance.

6.4.5.4 Quasi-experimental research

This research can be typified as a quasi-experimental design. These designs typically include some sort of intervention and provide a comparison between groups, but they lack the degree of control found in true experiments. A lack of randomisation is the hallmark of quasi experimental designs (Gersten *et al.*, 2005:152). These are recommended when true experimental designs are not feasible.

Selection of the control (143) and experimental groups (413) consisted of an unequal group of poor performing, average performing and high performing branches, scattered across various geographic locations in SA. Each geographic location consisted of a combination of branches within the poor, average and high performing categories.

The experimental and control groups were thus non-equivalent, thus implying a non-equivalent control group design. However, the fact that the dependent variables (financial indicators and performance appraisal scores) were also measured before and after the intervention, adds another dimension to this research, namely a pre-and post-test or repeated measures dimension. This kind of design, with two independent variables, one between groups (experimental / control) and one within groups (pre- and post-test), is known as a mixed design. The research may therefore be typified as a quasi experimental mixed design.

6.4.5.5 Evaluation Research: implementation (process) evaluation

This thesis contains components of programme evaluation as dependent measures, both before and after the intervention, were obtained and compared.

6.4.5.6 Theory-building or model-building studies

A comparative review of eight Creativity Models was used to develop a Retail specific conceptual deliberate creativity framework (CDCF), which includes a retail specific scorecard and implementation framework, as a secondary outcome of the study.

6.4.5.7 Literature reviews

There are two ways of considering the literature study: either as a study on its own, which some people prefer to call a “literature study”, or as the first phase of an empirical study. Either way, it is essential that every research project begins with a review of the existing and new literature (Mouton, 2001:86). Within this research a detailed literature study contextualised deliberate creativity within business practice. The different models and definitions regarding deliberate creativity were discussed, as well as the implications on business performance.

6.5 PRIMARY DATA COLLECTION METHOD [STEP 5]

Leedy and Ormrod (2005:93-94) mention that research methodology may be applied as a way to express significance from the data and therefore various research questions result in various research styles and methods. Data gathering and collecting is the method by which data is likely to be accumulated in the field. Primary data is collected by using qualitative and quantitative techniques. Data can be collected through different collection methods and also include two basic types of data, namely textual and numeric data (Mouton, 2013:123).

6.5.1 Quantitative and qualitative data

Leedy and Ormrod (2005:94) further state that qualitative research is applied to respond to questions relating to the sophisticated aspects of phenomena to be able to explain and comprehend the phenomena originating from a participant's viewpoint. Denzin and Lincoln (2000:3) concur and add that qualitative experts examine factors as part of the natural configurations.

Within this study a quantitative research approach has primarily been deployed. All data, namely the financial data (Ellerines financial performance of stores) could be extracted directly from all retail branches (100% accessibility), as well as questionnaire responses from participants (NBI and OWI, 77% and 95% response rate respectively) and customers (Living Facts survey, 97% response rate) were captured (and), collected and processed with the specified data collection instruments outlined in **section 6.6**.

6.5.2 The mixed method design

With previous notations, during the last couple of years dialogues have dominated the research sphere regarding the supremacy of qualitative or quantitative research (Mactavish & Schleien, 2000:1; Trochim, 2006:1; Olson, 1995:1; Imel, Kerka & Wonacott, 2002). One particular facet of these dialogues has centred on the suitability of blending quantitative and qualitative techniques within one research study.

Johnson and Chirstensen (2006:1) express views in which mixed method research designs tend to be categorised based upon two significant dimensions, namely, time

order (that is, concurrent versus sequential) and paradigm emphasis (that is, equal status versus dominant status).

Leedy and Ormrod (2005:94) most likely summarise the main advantages of employing a mixed method approach most effectively stating that “not one road directs us solely towards an improved comprehension of the unknown”.

This research design was formulated to employ primarily quantitative research methodologies with certain inferences derived from qualitative data. As mentioned in par. 6.2.5 among the list of mixed method approaches, as reported by Tshakaorri and Teddlie (as quoted by Mactavish & Schleien, 2002:4), is to apply the outcomes gained by using one particular approach as the beginning of the investigation of some other data produced from the alternative approach. Within this study the outcomes associated with branch and individual performance using SPSS analysis (quantitative) and the NBI test (quantitative analysis and qualitative inferences) had been applied. Contained in this study and in accordance with the definition of Johnson and Christensen (2006:1), the quantitative approach offers the “prominent standing” within this study.

Although quantitative research dominates this research study, qualitative inferences and observations can be extracted throughout the execution of the conceptual deliberate creativity framework (CDCF) within the Ellerines business, which is discussed in **chapter seven** and **chapter eight**.

6.5.3 Ellerines brand data collection framework

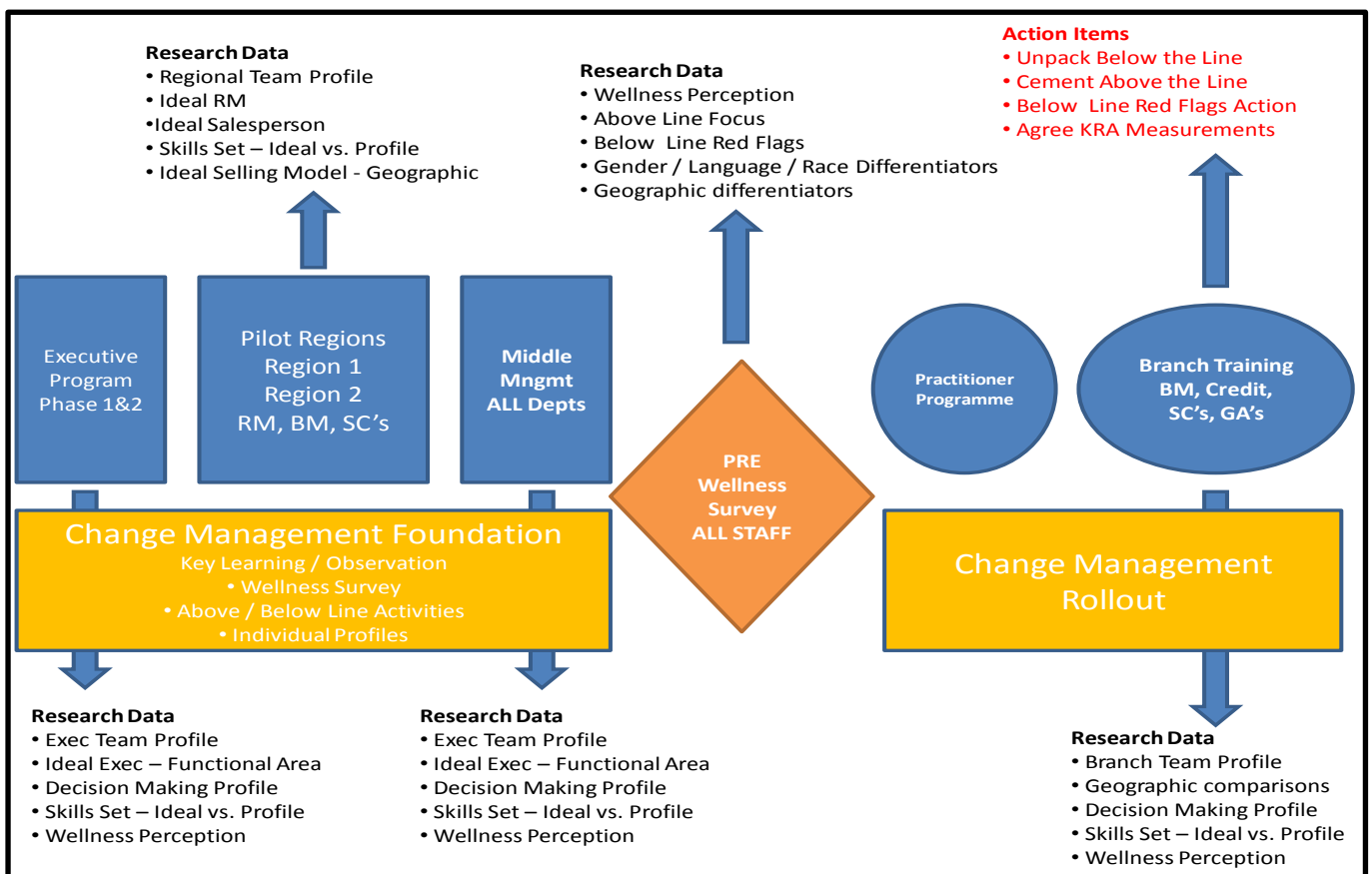
The data collection framework has been created by the researcher to guide the research structure, sequence and systematic approach to collecting data throughout the research study. This was done to ensure that key measurement points are established to be able to extract critical observations and data points for analysis and possible incorporation in the conceptual deliberate creativity framework (CDCF). The researcher commenced with the change management foundation phase that includes the training of creativity practitioners, from senior Ellerines executive down to branch level teams and individuals. The purpose of this phase was to cement ownership of the creativity intervention at all levels. At key milestones, measurements of organisation wellness

(OWI culture and mood) were performed, giving input to the execution strategy for the continuous improvement of conceptual creativity implementation plan (CIP).

The conceptual deliberate creativity framework (CDCF) and conceptual deliberate creativity implementation plan (CDCIP) is discussed in **chapter 8**.

Figure 6.9 summarises graphically the data collection framework of this research study that had been undertaken at the start of the implementation of the deliberate creativity intervention.

Figure 6.9: Data collection framework



6.6 DATA COLLECTION INSTRUMENTS [STEP 6]

Data had been gathered coming from two sources, specifically primary and secondary information sources. Primary data is described as the data placed “nearest to the original source from the real truth underlying the phenomenon” (Leedy, 1997:101). Three sources of information had been used to be able to generate meaningful insights and accurate findings.

EHL Financial and Management Accounting System: financial and performance data extracted from all participating Ellerines furniture branches and input into the SPSS statistical database for analysis and interpretation as outlined in Figures 6.3, 6.4 and 6.6.

Neethling Brain Instruments Tool (NBI): survey data captured from participant electronic and manual questionnaires (**Addendum 5D**) processed using the NBI analysis database of Solutions Findings.

Organisational Wellness Instrument (OWI): survey data captured from all participants from either manual or electronic questionnaires (**Addendum 5G**) and also processed on the Solutions Findings database.

Living Facts Pty (Ltd): external consultants contracted to conduct a retail industry and customer survey (**Addendum 6A**) to outline industry and furniture competitor analysis.

The motivation for making use of the SPSS data analysis system was largely for its statistical rigour in analysing a big dataset, selection of participants and cost effective access to interpretation software. The NBI was chosen due to its relation to the creativity intervention, as well as cost effective access to interpretation software. The Neethling Brain Instrument, Organisational Wellness Instrument, Living Facts Survey engine and SPSS data analyser software were applied, which are all addendums available for perusal.

Additional insights were captured through observations, experimental controlled recordings, systematic field observations and participant observations. A prognosis and interpreting of results (Chapter 7) including a detailed explanation of the various interventions belonging to the Conceptual deliberate creativity framework (CDCF) appears in Chapter 8. All statistical analysis, interpretation and observations are outlined in Chapter 7, with conclusions, suggestions, limitations and further research recommendations also outlined in Chapter 8.

6.6.1 EHL financial and management accounting database system

The current EHL financial and management accounting system is used to capture, report, analyse and account for all financial transactions and management accounting. EHL financial and management accounting system are used to generate the annual financial and auditors reports. All financial and management accounting processes are compliant with governance standards, namely General Accepted Accounting Practices (GAAP), Institute of Auditors (internal auditing) and the King III Report on corporate governance. **Figure 6.10** presents a graphical illustration of the financial architecture of the EHL financial and management accounting system.

Figure 6.10: Ellerines Holdings Limited (EHL) Financial Reporting Architecture



Source: Ellerines Holdings Information Technology Strategy, 2012

6.6.2 Neethling brain instrument (NBI)

The NBI is a business tool and brain preference assessment package available from Solutions Findings Pty (Ltd).

As discussed in **chapter 5**, the NBI is a brain preference tool to make associations between creativity, thinking styles and brain dominance. It consists of 120 questions (ranking from most important to least important). **Addendum 5A** provides a comprehensive outline of the NBI, with related validity and reliability test outcomes.

6.6.3 Neethling organisational wellness instrument (OWI)

The OWI is a business tool and behavioural assessment package tool available from Solutions Findings Pty (Ltd).

Also discussed in **chapter 5**, the OWI is a behavioural tool to assess the organisational wellness (mood, engagement and work environment health). Consisting of 12 factors (**section 5.7.5.1 chapter 5**) with a six priority response option (most important to least important) collated in the above the line (positive) or below the line (negative) response matrix. **Addendum 5E** outlines the validity and reliability testing conducted for the Neethling OWI tool.

To ensure adequate and accurate assessment of the level of ownership, acceptance and commitment of the conceptual creativity implementation plan (CIP), a second measurement of the organisational wellness (OWI culture and mood) was done in 2012. This was performed to triangulate financial, productivity and organisational wellness and establish a relationship or association between these factors over the period 2009 to 2012 (results discussed in **chapter 7**).

6.6.4 LivingFacts™ customer survey instrument

6.6.4.1 LivingFacts™ approach to client satisfaction and value measurement

In developing a measurement model (**Addendum 6B**) which evaluates customer satisfaction and value, LivingFacts™ incorporates the academic thinking of:

- **Parasuraman, Zeithaml and Berry (2004)**: when measuring transactional satisfaction: This team was instrumental in developing the first robust theoretical model for service and it was done in the banking sector. It still has relevance today for transactional elements that need to be measured. However, its weakness lies in not incorporating the now holistic understanding of Customer Satisfaction and Loyalty.
- **Gale (1994)**: Value Management: Bradley Gale wrote his seminal book, Understanding Customer Value on how satisfaction incorporated far more than transactional satisfaction. This thinking is still very relevant and is used in LivingFacts models today.
- **Reicheld (2006)**: Developer of the Net Promoter Score and Loyalty theory (Books: 1996, 2001, 2006): Reicheld further expanded on Customer Satisfaction Measurement and explored the intentions of customer satisfaction – to ensure loyalty. His resultant professorship and theoretical works are now widely used in American and European Satisfaction measurement.
- LivingFacts™ had developed a Customer Satisfaction model for EHL that incorporates the thinking of all of the above academics; all of whom are considered to be international experts in understanding and measuring customer experiences.

LivingFacts™ customer survey validity and reliability is presented in **Addendum 6C**

6.6.4.2 LivingFacts™ survey methodology

Interviews with customers in the EHL brands were conducted telephonically using the CATI system from lists provided by EHL. Competitor customer interviews were conducted on an intercept basis outside competitor stores. A structured questionnaire with a 10-point rating scale was used (**Figure 6.11**)

Figure 6.11: LivingFacts™ customer survey rating scale

1	2	3	4	5	6	7	8	9	10
Totally useless									Excellent

Source: LivingFacts™ report, furniture retail and EHL customer survey, 2012

It remained important to obtain an external independent perspective and verification of behaviour and business performance, to ensure credibility of the conceptual deliberate creativity framework (CDCF), by ultimately testing the customer response and shopping experience throughout the execution of the conceptual deliberate creativity framework (CDCF). This would be the ultimate test, and verify the translation of key creativity interventions into beneficial business enhancement actions, resulting in increased customer satisfaction that would translate into increased sales and profits.

6.7 GATHERING DATA [STEP 7]

A primary phase in collecting data is gaining access to the subjects of research, whether it be participants' archival records, workplace information, interviews; it remains critical to gain access to ensure credible data (Maree, 2012:88).

6.7.1 Financial and management accounting data

All the financial and management accounting data for the period 2009 to 2012 of the deliberate creativity intervention was extracted from the EHL financial database (section 6.6.1) by a chartered financial accountant. Data was collated for the control and intervention retail stores on a MS Excel spread sheet, packaged and handed over to the statistician and data analysis expert (Dr. Liezel Korf) for processing in the SPSS version 22 computer programme. Permission to extract data and submit for analysis to the statistician was granted by the CEO of EHL.

6.7.2 Neethling brain instruments (NBI) data

Given that the NBI tool is a web based assessment programme, no manual capture interventions were necessary, but results were simply extracted directly from the software.

Before the NBI tool was administered, the following preparatory work had been concluded to ensure all participants were comfortable with the NBI profile administration:

1. Communication was disseminated throughout all head office, divisional, regional and branch operations to communicate the NBI process, administration and capturing deadlines. **Addendum 6E**
2. Participlan™ workshops were conducted with head office staff, creativity champions (creativity training facilitators) and all management individuals as a form of pre-testing the NBI questions and to ensure understanding of the NBI process, question structure, administration compliance and question interpretation (to eliminate any ambiguity regarding question context and interpretation). **Addendum 6F**
3. Teleconference and video conferencing sessions were held with all branch managers throughout SA, to further ensure understanding of the NBI process, question structure, administration compliance and question interpretation as well as to ensure that branch managers could facilitate any challenges with the NBI administration process.
4. Computer terminals were set up in head office, divisional and regional centres and retail branches to ensure accessibility for all participants to complete the NBI assessment.
5. A specific NBI capturing day was allocated (Monday 08h00 to 12h00), to ensure deadline management and high response rates.
6. A head office call-centre number was created to respond to any IT systems issues, further NBI clarity issues and to report progress.

This intervention was very successful and yielded a high response (77%) and completion rates from participants (90%), within the specified deadlines.

6.7.3 Neethling Organisation Wellness (OWI) data

A similar approach for the OWI assessment was followed to that of the NBI assessment, as outlined in section 6.7.2. Once again the execution recipe yielded a good response (95%) throughout all geographic locations and departments.

Addendum 6E: OWI communication

Addendum 6F: Participlan™ workshop

6.8 DATA PROCESSING [STEP 8]

After the data collection process had been concluded (outline in **sections 6.7.2 and 6.7.3**), data processing was done by the respective assessment administrators and statistician. Data processing for the NBI tool was done by the NBI assessment and administrators (Solutions Findings Pty Ltd), with NBI profiles and reports generated for individuals, teams and functional departments (presented in **chapter 7**). OWI assessments were also processed by the Solutions Findings Pty (Ltd) team, with the respective data analysis and reporting done for teams and departments within the Ellerines business. Financial data was extracted directly from the EHL financial and management accounting system, then directly inserted into the SPSS version 22 program.

6.8.1 Data editing

Editing helps to ensure that surveys are completed correct and thorough (McDaniel & Gates, 2001:291). As indicated by Shoa (2006:41), editing includes examining questionnaires that have been completed for deficiencies, omissions, unfinished or perhaps useless responses, illegibility and apparent inconsistencies. Zikmund and D'Amico (2001:141) mention that unfinished surveys will likely adversely impact the validity belonging to the information gathered.

Within the case of the Ellerines NBI and OWI exercise, Solutions Findings Pty (Ltd) had singled out a dedicated team to administer both the Ellerines NBI and OWI, with immediate feedback to the participant or line manager in cases of incorrect or incomplete capture, with the participant re-doing the NB and OWI assessment on the same day, giving reasons for errors or illegibility of assessments. No financial data editing was required as financial data had been extracted directly from the EHL financial and management accounting system and inserted directly into SPSS version 22, was no data editing required.

6.8.2 Data cleaning

Diamantopoulos and Schlegelmilch (2000:40) defined data cleaning as an error verifying procedure performed following entry of data and prior to data analysis to

determine omissions, ambiguities as well as flaws within responses done throughout entry of data. This can be prevented by avoiding unclear questions and also by pre-testing the surveys. Tuskin, Ligtheim, Martins and Van Wyk (2005:471) believe that research workers should seek to clean the dataset from potential coding and data recording errors.

Within the data analysis process, a review meeting was conducted with the respective data management parties (Ellerines financial chartered accountant and Solutions Findings Pty Ltd.) by the researcher to ensure adequate data cleaning administration. Anomalies, trend errors and inaccuracies were corrected immediately after the data gathering intervention.

6.8.3 Data Analysis

A pair of overarching statistical techniques is widely-used within quantitative research, namely descriptive and inferential statistical techniques, which is to examine data in order that various other researching experts are able to duplicate the research study (Maree, 2012:119). The data collected within this research study had been analysed through the SPSS version 22, by a qualified statistician and will be presented in **Chapter 7**.

6.9 VALIDITY AND RELIABILITY OF THE RESEARCH [STEP 9]

6.9.1 Validity of a research study

Cooligan (1992:35) states that validity is considered with the degree that the research findings precisely express what is actually occurring in the specific situation. Two types of validity are typically referred to with regard to research studies. The first is internal validity which refers to the integrity of procedures used in the research. Research errors, which include flawed research procedures, inferior samples, and erroneous or misleading measurement, will weaken validity (Welman *et al.*, 2006:142). The different categories of validity which associate with the independent variable include construct validity and criterion-related validity.

The second is external validity which relates to the extent to which findings from the research study may be generalized beyond the particular sample. The sample in this research study may be deemed to be representative of the staff of Ellerines (total workforce 4261, sample size 4025). The results may be generalized to other companies in the retail sector where similar problems are faced.

6.9.2 Validity of the measuring instrument

Validity: Is the accuracy and reliability of an instrument really testing precisely what it should really measure as well as the degree that a selected measure is devoid of methodical and arbitrary errors? (Diamantopoulos & Schlegelmilch, 2009:33). As reported by Bisschoff and Kade (2010:4), validity is characterised through “the degree to which an experiment measures exactly what it affirms to measure.” Many types of validity are identified with regard to measuring instruments. These include face validity, construct validity, and criterion validity.

The strength regarding the research study to scientifically address the research question that it undertakes to resolve is just what the definition of validity represents. It will be essential thus that the test remains valid during the valid interpreting and application of outcomes (Field, 2000:134).

6.9.3 Reliability of a study

Reliability relates directly to the findings regarding research and pertains to the trustworthiness regarding the findings. Whenever establishing whether or not the findings happen to be reliable, attention needs to be directed at whether evidence as well as results will withstand in-depth examination (Welman *et al.*, 2006:144).

6.9.4 Reliability of an instrument

Reliability is understood to be the persistence associated with a collection of measurements or measuring instrument, designed for describing a test (Williams, 2009a). Consequently the measure ought to continually mirror the construct it is actually measuring. The level of quality regarding the measurement is precisely what reliability is centered on. Reliability refers to the “repeatability” or perhaps the “consistency”

concerning a measure (Welman *et al.*, 2006:77). The research instrument that generates the identical outcomes each time it is in use within equivalent circumstances features significant reliability (Field, 2007:666). Internal consistency, test-retest reliability and alternate form reliability are some of the reliability measures available.

6.9.5 Validity and reliability of the research design

Great care was taken to ensure the validity and reliability of the research design. The rigorous and controlled procedures used for the administration of the NBI as well as the training intervention provided evidence of internal validity. The fact that financial measures were drawn directly from the financial and management accounting system had left no room for variation and interpretation and thus may be seen as particularly valid.

As indicated by Lincoln and Guba (1985:124), the transportation of the outcomes research would likely rely on the amount of similarity involving the initial circumstances along with the circumstance to which it can be transferred. This holds true in varying degrees within this research study. The widespread underperformance of the furniture retail industry and lack of results driven interventions to improve business performance has been reflected in many furniture retail companies' annual financial reports in the research study period. It is therefore proposed that the results of the study may be equally relevant in other retail companies.

Reliability was enhanced by the consistency of the methods used and the proper training of administrators and facilitators. With regard to the financial measures there was once again no room for inconsistent measurement which supports the reliability of the research design.

6.10 THE LIMITATIONS OF THIS STUDY

When embarking on the study, the researcher had ensured compliance with all academic requirements in the planning and design of this thesis. Although the ultimate aim and objective was to prove or disprove the hypothesis, and ensure achievement of the research objectives, it was impossible to include all independent variables within this

research project. Adding to the complexity and dynamics of the retail furniture industry was the challenge of the uncontrollable factors and conditions that could have had an impact on the research study. Included in these uncontrollable factors were both internal and external factors, namely:

External Factors

1. Fluctuations in the credit lending policies which would impact on the ability of customers to purchase on credit, thus impacting sales and profitability of the retailer.
2. Economic conditions (cost of living, rise in household expenditure, fuel inflation, food inflation) all impacting on the amount of surplus cash available for customers to spend thus impacting sales and profitability of the retailer.
3. Increase in bad debt with financial institutions, caused customers' ability to service credit debt and thus causing credit retailers to reduce credit lending and capital amounts to customers.

Internal Factors

1. Ellerines as a mass market furniture retailer has a high concentration of lower income customers, which are largely affected by the external factors and macro economic impacts.
2. Control and intervention group design could not in all cases prevent contamination of the implementation of creativity programs, specifically in locations where control and intervention group branches were in the same town.
3. Middle and regional managers from control groups would liaise with colleagues from intervention group and review best practices and learnings from creativity enhancements and implement these in poor performing stores.
4. The geographic dispersion, sample size and momentum of the implementation and execution of all creativity interventions, made it impossible to implement creativity activities simultaneously and thus the performance improvements had a lagging effect when gathering results from the data.

6.11 SUMMARY

Throughout this study a sequential mixed method approach, including quantitative in addition to qualitative research methods, was applied. The researching paradigm had been mainly constructivist-interpretive along with a phenomenological research strategy was adopted. The techniques of data collection incorporated the NBI, OWI, financial and accounting data and real workplace observations.

The design of a Conceptual deliberate creativity framework (CDCF), Creativity Implementation Plan and Retail Creativity Program forms an essential part of this study and is particularly an endeavour to respond to the “how” question regarding the practical enhancement of businesses using a creativity intervention, instead of being confronted by a plethora of theoretical arguments, business model jargon and philosophical statements.

The researcher has been granted approval to embark on this business case research study project using Ellerines data from Ellerines Holdings (**Addendum 6G**).

The quantitative data findings and observations, together with all the qualitative interpretive findings and observations will be comprehensively discussed in **chapter 7**.