

FURTHERING THE EDUCATION OF YOUNG ADULTS – AN ANALYSIS OF STATISTICS  
SOUTH AFRICA'S INTERNSHIP PROGRAMME

by

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**DECLARATION**

**Student number: 35642726**

I declare that:

***FURTHERING THE EDUCATION OF YOUNG ADULTS – AN ANALYSIS OF  
STATISTICS SOUTH AFRICA’S INTERNSHIP PROGRAMME***

is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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GWENDOLINE HILARY VAN DER BERG

.....  
DATE

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## **DEDICATION**

I dedicate this dissertation to my beloved late mother, Dinah McClune, and my late grandmother, Annie Smith, who taught me the value of perseverance and to keep going long after everyone else has given up. You instilled the values of hard work and dedication in me which inspired me to follow my dreams and to always aim higher. I regard myself blessed to have had the honour of being your daughter and granddaughter.

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## **ABSTRACT**

The purpose of this study was to analyse the effectiveness of Statistics South Africa's internship programme in developing the statistical skills of interns.

A mixed method approach which included semi-structured interviews, document study and electronic questionnaires was used to gain insight into the thoughts and perceptions of 38 participants.

The study revealed that many of the crucial elements for a successful internship programme are present in the current internship programme. It was also found that the interns do not get the opportunity to implement or utilize their skills in the areas in which they are being placed. The absorption and retention strategy also seems to pose a challenge for the internship programme of which the goal is to retain as many statisticians as possible. Finally, a proper absorption strategy, better and more formal assessments, and a higher salary level for interns being absorbed into the organization should also be considered.

### **Key Words:**

Intern; Internship; Learning contract/plan; Mentor; Skills utilization; Vocational training

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## CHAPTER 1

### GENERAL ORIENTATION

#### 1.1 INTRODUCTION AND BACKGROUND

The Skills Development Act 97 of 1998 and subsequent National Skills Development Strategy for South Africa led to an increase in the usage of internships as an effective approach to further the education of young adults, thereby enhancing their employability and career development. Students enrolled in higher education institutions as well as those who completed their studies need to be properly prepared for the corporate or business environment. With an unemployment rate of 24% in South Africa ([www.statssa.gov.za](http://www.statssa.gov.za)) competition for employment is fierce among young adults. Higher education institutions and the corporate sector need to work together to provide opportunities for young adults to develop the necessary skills and further their education to make them more employable. One way of doing this is through internship programmes, where young adults gain the theoretical knowledge from higher education institutions and get the opportunity to further enhance and develop these skills through vocational or practical training in the workplace, thereby giving effect to the notion of life-long learning.

Cord and Clements (2010) advocate a learning-orientated pedagogical approach to internships where student learning should be at the heart of internship programmes. They are of the opinion that these young adults should be allowed to practice their skills and knowledge, and that the programme should promote an assessment framework which focuses on learning generic workplace skills such as teamwork, culture and reflection. They further maintain that students should be allocated a mentor within the workplace to assist them and nurture their development. Kirshner and Whitson (1997) support the idea of learning during internships by advocating a situated learning approach, whereby knowledge and skills are learned by applying it in everyday situations. Stein (1998:1) strongly emphasizes the fact that situated learning should be an “immersion in and with the experience and not merely reflecting upon and drawing implications from previous experiences.” This shows the importance of fully engaging interns during the internship experience.

Internships are supposed to give students workplace experience or an opportunity to practice the skills that they have acquired and will practice in future. Internships in the public service are supposed to be planned, structured and managed programmes that provide work experience (vocational training) for a specific period. A designated mentor is a pre-requisite to support an intern in the public service in order to support the intern's learning.

In South Africa, internships are practical programmes to assist with the continuous development of people. These programmes are mainly directed at graduates who have completed their studies and are unemployed (*The Public Service Internship Program Step by Step Guide* – Department of Public Service and Administration, South Africa).

The role of Statistics South Africa, the official statistics agency in South Africa, is to also provide and promote the development and training of statisticians in South Africa as a whole. Developing and promoting statistical skills is not only applicable to Statistics South Africa but also to its partners in the National Statistics System (NSS) and other government departments.

The Statistics South Africa internship programme is intended to address a skills shortage in the public sector, especially in the core areas of statistical production (Nthangeni, 2011). Suitable university graduates are identified and recruited, and given intensive training for a period of twelve months. During this period, the interns need to be assessed regularly on a number of tasks with a view to ascertain their level of skill and suitability for permanent deployment within Statistics SA as well as in the National Statistics System (NSS).

The purpose of this study was to investigate whether the internship programme in Statistics South Africa is effective in developing the statistical skills of interns and thereby contributing to addressing the critical statistical skills shortage experienced in the organisation. This was done by analysing the training that interns are exposed to during their internship period and its relevance and impact, the processes and systems of the internship programme, which include the matching of qualifications to the areas in which they are placed, whether interns are mentored or left to be on their own, and the learning and assessment plans that are being used.

## 1.2 PROBLEM FORMULATION

Fouché and De Vos (2005:99) point out that the identification of the problem can be seen as the first step by the researcher to mould the problem into a formulated form. According to Bless and Higson-Smith (2001:19), problems are special kinds of questions that arise and which require knowledge to be sought. Welman and Kruger (1999:67) indicate that the first step in any research project is to choose a research area, and that this process requires the delineation of a problem area and the description of one or more research problem(s).

The main focus of this research was on the problem of the shortage of statistical skills in Statistics South Africa and the effectiveness of their internship programme to address such shortage. This research tried to address the above problem by analysing the training that interns were exposed to and the utilization of their skills in the areas in which they were placed.

Most research on internships (Graebner, 1959), (Thompson, 1950), (Cord & Clements, 2010), (Green, 1997) and (Merrit, 2005) explores the benefits of internship programmes to learners and organisations. Little research has been done on the effectiveness of these internships in the development and enhancement of specific skills. A need existed to examine the effectiveness of internship programmes in developing interns' specific skills and thereby furthering their prior education.

The major problem highlighted in this research is that of the inadequacy of an internship programme not properly administered in the development of statistical skills of interns. This problem leads to interns not developing the necessary skills and competencies to be deployed in statistical areas where a shortage of skills is experienced.

This research tried to establish what factors need to be considered and included in the training and development of statistical interns to ensure the furthering and enhancement of their prior education to make them more employable in statistical areas. These findings and recommendations will hopefully assist Statistics South Africa in making suitable adaptations to their internship programme.

The researcher observed a limitation in studies which focus only on the benefits of internships to individuals and organizations without focusing on the development of specific skills, in this case statistical skills of interns participating in the programme. It is also hoped that the results of this particular research would serve as a knowledge base on a small scale for organizations who wish to develop specific skills and thereby furthering the education of interns in order to employ them where a scarcity of skills exist. Hereunder follows a section on the aims and objectives of the study.

### **1.3 AIM AND OBJECTIVES OF THE STUDY**

The aim of this study was to analyse the effectiveness of Statistics South Africa's internship programme in developing the statistical skills of interns.

#### **Objectives**

The objectives of the study were:

- to determine whether the qualifications of interns were considered when they were placed in specific areas
- to examine whether interns were exposed to relevant, appropriate and practical, hands-on experience (vocational training) to make them more employable in statistical areas
- to establish whether interns were given the opportunity to utilize their statistical skills in the areas in which they were placed
- to determine whether the training that interns were exposed to (short courses) were relevant in developing their statistical skills
- to examine the involvement of mentors in the development of interns' statistical skills
- to determine whether there is a formal process that links successful interns with the recruitment process of permanent members of staff

The research strategy and methods employed by the researcher will be discussed next.

## **1.4 RESEARCH STRATEGY AND RESEARCH METHODS**

Due to the structure of this research, the researcher chose a mixed-methodology design together with the case study. As qualitative methods were mostly used, the quantitative method was used to a lesser extent. These research methods will be discussed in detail in chapter 3. 49 interns were selected using non-probability sampling by a purposive method from a cohort of interns who participated in Statistics South Africa's internship programme between 2006 and 2010. The criterion for selection simply was graduates who possessed statistical qualifications.

### **1.4.1 Data collection methods**

The researcher conducted semi-structured individual interviews with the young adults who participated in Statistics South Africa's internship programme. In addition, the researcher also studied official documentation of the Statistics South Africa internship programme and administered electronic questionnaires.

### **1.4.2 Data analysis**

For the purpose of this study, data analysis is the process of systematically searching and arranging interview transcripts, notes and other materials to understand the phenomenon of how interns experience the development of their statistical skills and thereby furthering their education. Through the process of data analysis, the researcher will be able to present the findings in chapter 4.

## **1.5 SIGNIFICANCE OF THE STUDY**

The Statistics South Africa internship programme is a result of a strategic government initiative (Human Resources Development Strategy for the Public Service – 2002). Statistics South Africa used this as an opportunity to increase their own capacity in statistical skills by investing in retired staff from the national statistics offices in Australia and Canada to address the acute skills deficit in the organization. The objective was for them to provide technical expertise to Statistics South Africa and to impart their much-needed skills and experience to newly recruited South Africans/interns (Theunissen, 2005). One way of achieving this objective was through an internship programme.

In order to derive some benefit from the internship programme, Statistics South Africa should be in a position to retain all the interns who successfully completed the internship programme or deploy them to other government departments upon their successful completion of the programme. The year-long internship programme is designed to focus on developing the statistical skills of interns, thereby building on their existing knowledge gained through formal education, in order to address the statistical skills shortages in the organization.

A number of questions were raised by this study about the relevance of the training and experience that interns were exposed to during their internship, and whether interns were placed in areas where they could optimally utilize and develop the statistical skills acquired during their formal studies. This study aimed to establish whether or not the internship programme is indeed developing the statistical skills of interns, and thereby contributed towards addressing the statistical skills shortage in the organisation.

## **1.6 CLARIFICATION OF CONCEPTS**

### **Intern**

According to Green (1997), an intern is a student who engages in real-world work experience in a temporary role as a worker in an organization.

### **Internship**

Patton and Dial (1988) defined internship as “a form of on-the-job training in which people gain supervised experience and practical knowledge that is relevant to a specific field”.

### **Learning contract/plan**

This is typically a form of contract signed by both the mentor and the intern outlining clear learning goals (Green, 1997). It should also indicate the outcomes against which interns will be assessed.

## Mentor

For the purpose of this study a mentor is a person who is trained and appointed to offer advice, knowledge, wisdom and insight that is useful for the intern's professional and personal development. (*The Public Service Internship Programme – Step by Step Guide*, 2006).

## Skills utilization

Skills utilization is about ensuring the most effective application of skills in the workplace to maximise performance, through the interplay of a number of key agents (e.g. employers, employees, learning providers and the state) and the use of a range of human resource, management and working practices. Effective skills utilisation seeks to match the use of skills to business demands/needs ([www.cfe.org.uk/SkillsUtilisationLiteratureReview](http://www.cfe.org.uk/SkillsUtilisationLiteratureReview)).

## Vocational training

Training that emphasizes skills and knowledge required for a particular job function ([www.businessdictionary.com/definition/vocational-training.html](http://www.businessdictionary.com/definition/vocational-training.html)).

## **1.7 CHAPTER OUTLINE**

Table 1.1 below outlines the chapters that will be covered in the dissertation.

**Table 1.1: Outline of the chapters of the study**

Chapter 1: General Orientation	This chapter consist of an introduction and background information on the research topic. The statement of the problem, aims and objectives, the research strategy and research methods, data collection methods, data analysis and definitions of concepts are also outlined in this chapter. This section also provides an overall view of how the research report will be structured.
C0,chapter 2: Literature Review	Chapter 2 contains the literature review on the furthering of education of young adults through internship programmes. The focus will include

	a conceptualisation of internships, key contributing factors for the development of specifically statistical skills such as the training interns are exposed to, the placement of interns, the involvement of mentors and the retention strategy.
Chapter 3: Research Methodology	Chapter 3 describes the research design, research methodology, research question, population, sample and sampling technique, data collection procedure, focus group interviews, document study, questionnaire, data analysis, research ethics and verification as well as the delimitations and assumptions of the study.
Chapter 4: Data Analysis and Interpretation	Chapter 4 contains the research findings on the development of interns' statistical skills.
Chapter 5: Overview and Conclusions	In this section the researcher provides an overview, draws conclusions and makes recommendations that could be used in enhancing the Statistics South Africa internship programme.

## 1.8 SUMMARY OF THE CHAPTER

Chapter 1 provided a background to the study and presented the underlying problem, which gave rise to the study. The research aims and objectives, research strategy and methods which included data collection methods and data analysis were discussed. This was followed by explaining the significance of the study and clarifying the concepts used in the study. The outline of the chapters of the dissertation was lastly indicated.

In chapter 2 the researcher explores the various definitions of internships and what the goals of internships should be. This chapter will look at Kolb's (1984) influence on experiential learning as an approach that highlights the learning aspect of creating knowledge through experience. The chapter also contains a literature review of the critical success factors for successful internships as mediums to further the education of young adults participating in these programmes.



## CHAPTER 2

### LITERATURE REVIEW: FURTHERING THE EDUCATION OF INTERNS THROUGH INTERNSHIPS

#### 2.1 INTRODUCTION

Chapter 2 reviews the literature on the development of interns' skills, thereby furthering their education. Henning, Van Rensburg and Smit (2004:2) are of the opinion that a literature review will allow the researcher to synthesize and engage critically with the literature on a topic.

To fully understand how internships contribute to the development of skills of interns who participate in the programme, it is important to take a closer look at how internships are defined. Factors that influence the success of internships, such as the goals of internships and how they are linked to the furthering of the education of interns, will be discussed. The key features of successful internships, which include learning and a learning plan, assessment, qualifications, placement and meaningful work, and the importance of mentors, as outlined by various authors, will lastly be discussed.

#### 2.2 DEFINITION OF INTERNSHIP

In South Africa, internships are regarded as practical programmes to assist with the continuous development of people for future appointment in the labour market. These programmes are mainly directed at graduates who have completed their studies and are unemployed (*The Public Service Internship Programme Step by Step Guide* – Department of Public Service and Administration, RSA). This definition does not necessarily provide for the development of skills of interns, but the main focus is rather on the enhancement of employability. This definition suggests that as long as interns undergo an internship programme they are more employable, whether their skills were enhanced or not. There is no focus on furthering their education or enhancement of their knowledge.

Finkle and Barclay (1997:236) concur that an internship provides practical experience to advanced college students, but they also add the very important component of supervision to this definition. Once again this definition also shies away from developing skills or the

furthering of education of interns, because a mere reference to practical experience does not necessarily imply that interns are indeed given the opportunity to further develop their skills and training by applying classroom teaching. Interns could be placed in areas where their prior skills and knowledge are not considered at all and they could gain practical experience in a totally unrelated field.

Mihaly Csikszentmihalyi's reference to internships as a form of service-learning due to the practical component thereof, brings us one step closer to properly defining internships (Taylor, 2005). This definition suggests that learning still takes place during internships and there is reference to the expansion of knowledge.

When engaging in internships, students should be able to apply classroom learning, theories, and experiences to professional settings (<http://education.stateuniversity.com/pages/2132/Internships-in-Higher-Education.html>).

This definition of internships is the closest to emphasizing the fact that there is indeed an opportunity for interns to enhance their prior training and knowledge by getting an opportunity to put their classroom learning into practice. This brings about an opportunity to further their education by possibly discovering new knowledge. For purposes of this study, this definition is particularly relevant because of the emphasis on the application of classroom learning and experiences, and the suggestion and implication that interns' education is furthered or enhanced through internships.

According to Parilla and Hesser (1998) it is important to establish goals for the internship programme in order to make the internship experience more than just an effective preparation for future employment. It is, therefore, important to pay closer attention to the goals of internships.

### **2.3 GOALS OF INTERNSHIPS**

Kolb (1984:38) maintains in his theory on experiential learning that learning is the process whereby knowledge is created through the transformation of experience. Schon (1983) concurs by emphasizing that the real power of experiential learning comes when it enables students to comprehend previously learned material in new and different ways. Howery (1983) (as cited by Dukes et al., (2003:336)) adds to this concept by pointing out that internships should allow students to "link theoretical material, perspectives, and ideas to the

practical concerns of concrete examples". The general goal of all internships should be to allow students to apply learning, as well as acquire new knowledge, because internships significantly increase the students' learning as well as enhance intellectual and skills development

(<http://education.stateuniversity.com/pages/2132/Internships-in-Higher-Education.html>).

Thompson (1950) concurs by stating that one objective of internship programmes is to help the student bridge the gap between academic theory and practical application. He uses the example of an accounting/auditing student to demonstrate this concept. "It is extremely difficult to teach auditing to a student who has not worked with accounting records, or to teach cost accounting to a person who has not been inside a factory. On-the-job experience supplies this background that is so necessary to properly understand accounting work" (Thompson, 1950:395). Kish (1978) agrees when he emphasizes the importance of practical application by raising the important question on whether anyone would accept a physician or a surgeon who only has theoretical training.

The same principle can be applied to the statistical internships. It is only by being exposed to the whole statistical value chain that interns can properly understand statistical work. Interns need to be able to reflect upon, analyse, and critique their experiences in a way that demonstrates that they have acquired greater knowledge of statistical concepts and ideas at the end of their internship. Internships are supposed to, among other things, provide valuable practical experience through actual work in real situations in order for further learning to take place.

Quinn (2003) highlights that "a sociological analysis of internship programs found internships that function effectively become that important link between formal education and practice" (as cited by Kelly Wilkinson, 2008:2). The knowledge that interns gain at tertiary institutions, therefore, only becomes valuable if they get the opportunity through internships to apply that theory in actual practical situations, because "experience enriches the lessons students previously learned and grounds them in reality" (Parilla & Hesser, 1998:312). Sweitzer and King (2009:3–4) concur by stating that an internship is both a chance for students to apply what they have learned, as well as to develop the relationship between theory and practice.

According to Meyer, Trost and Vukovinsky (1998:204–205), the academic training of statisticians should be contextualized by providing students with relevant and appropriate work experience and training. Kish (1978) concurs by stating that there should be a better integration of theory with application. He emphasizes the fact that theory should improve the quality and efficiency of applied work and that application should be the testing ground for statistical theory and methods.

Internships are other learning opportunities for participants because internships should also teach soft skills such as teamwork, problem-solving, decision-making and critical thinking skills. Learning soft skills should, therefore, be another very important goal of internships. These skills are particularly important, because as Sweitzer and King (2009:4) rightfully state, internships are both an intellectual as well as a human experience. This emotional, human side of internships is very real and important when dealing with clients and should, therefore, not be neglected during the training of interns. Stovall and Stovall (2009) concur by pointing out that learning soft skills is important for professional and organizational success and that the successful demonstration of these soft skills can be linked to employability. Goleman (1995) maintains that soft skills can attribute to an intern's success or failure more so than intelligence or technical skills.

Many researchers have explored the advantages of internships. Merrit (2005) argues that internships provide invaluable experience and can change students' lives. According to him it can also increase students' maturity levels and can improve their self-confidence and self-concepts. Internships also offer students a chance to bridge the gap between classroom expectations and the reality of the working environment (Dennis, 1996). Graduates who participated in internships are generally better prepared to enter the job market and enjoy greater job satisfaction (Gault, Redington, & Schlager, 2000). Employers are looking for students who have gained hands-on experience, and internships supply students with the real-world experience required by employers (Taylor, 1988). Green (1997) concurs by emphasizing that recruiters, professors and professionals from various career fields recognize that graduates are provided with much needed tools to compete effectively in the job market through work experience which is academically oriented.

Merrit (2005) also refers to the fact that internships not only benefit students, but also the organizations providing them. This is further substantiated by Green (1997) and

Coco (2000) who both highlights the fact that companies do not necessarily employ interns solely out of the goodness of their hearts, but that they perceive interns to be a source of inexpensive or sometimes free labour. Finkle and Barclay (1997), Green (1997) and Coco (2000) all emphasize the fact that companies create a pool from which to recruit full-time employees through internships. Therefore, it makes sense that companies should invest as much as possible in the training programmes and practical training that interns are exposed to, and ensure that this training is relevant and targeted in order to properly develop intern's skills.

In order for internships to be beneficial to both interns and the hosting organizations, it is important to explore what the key features of a successful internship are.

Many scholars (Meyer, Trost & Vukovinsky (1998), Parilla & Hesser (1998), Sweitzer & King (2009)) agree on the following as key elements in an internship programme that successfully further interns' education.

## **2.4 KEY FEATURES OF A SUCCESSFUL INTERNSHIP PROGRAMME**

### **2.4.1 Learning should take place and be guided by a learning plan/agreement**

Collins, Brown and Newman (1987) and Young (1993) advocate a methodology of situated learning where interns execute tasks and solve problems in an environment that reveals the various intended uses of their acquired knowledge. The external support should, however, fade as the intern's skill and autonomy increases. Parilla and Hesser (1998) support this idea by pointing out that internships should offer an extended opportunity to apply previously learned knowledge and understanding in real settings and that it should also provide interns a chance to acquire new knowledge and insights, by "linking established concepts to new situations" (Ewell, 1997:5).

In order to acquire the desired knowledge, Young (1993) emphasizes that mentors need to select situations that will engage the learner in complex, realistic, and problem-centred situations.

Gallo (1971) is of the opinion that in order for learning to take place, learners need to see the relevant relationships. It is important that all aspects of solving a problem should be

open to investigation in order for the learner to view the parts of a meaningful whole. Interns should be afforded the opportunity for exploration on a trial-and-error basis in order for them to learn. It is, therefore, important that internship programmes allow learners some leeway, as adults may react better and learn faster if there is not too much pressure on them.

Parilla and Hesser (1998) believe that the acquisition of new knowledge can happen when integration (students making connections between classroom-based knowledge and knowledge learned from their experience) takes place. When considering Kolb's (1984) learning cycle, this can happen in the following ways.

Firstly, the mentor introduces interns to statistically relevant facts or skills. This can happen when an intern in the data collection section gets the opportunity to either contact respondents telephonically or during face-to-face encounters. The intern experiences an actual work activity during the first stage or concrete experience, e.g. data collection via telephone. Secondly, during the reflective observation (i.e. the second stage) the intern consciously reflects on whether the telephonic data collection went well or not. Freire (1973) is of the opinion that one major purpose of education is to enable learners to reflect on their own learning and to put this knowledge into practice. This combination of reflection and action is termed "praxis" (Mayo, 1999:63). Thereafter the intern will attempt to create a theory of what he or she experienced or observed – if one remains calm with an irate respondent and explains the importance of collecting the data, the respondent becomes more co-operative. Kolb (1984) refers to this as the third stage of learning or abstract conceptualization. During the fourth stage or active experimentation, the intern will try to test the theory by explaining the importance of the data collection and remaining calm with the respondent in a different scenario.

Another example is when interns are exposed to the principles of questionnaire design in a statistical office. Theoretical experience could be gained by working through questionnaires of different surveys that are currently being used by Statistics South Africa. As new series are researched, the intern can be expected to draft a questionnaire to be used in the survey (concrete experience). The draft can then be discussed with various internal and external users of the eventual dataset. This face-to-face interaction with potential users of the data is used to make amendments to the questionnaire (reflective observation). The improved questionnaire could then be tested with actual data providers,

either through the actual administration of the questionnaire or through other observational techniques such as behind-the-glass tests (abstract conceptualization). Feedback from both the data providers as well as the data users is lastly combined with the theoretical knowledge gained at the outset to ensure that a quality data collection instrument (questionnaire) is developed (active experimentation).

According to Parilla and Hesser (1998) students' experiences should also serve as catalyst for deeper investigation into topics that were not covered in depth in the classroom. In this way students also acquire new knowledge. Interns can utilize internships to generate new knowledge through original research. They should be encouraged to write papers for local and international conferences, etc.

Interns allocated to rotate to research divisions could be given the opportunity to research topics of interest on which limited local knowledge and experience is available. This could involve initial desktop research of a topic that is new to the statistical agency, e.g. data on "research and development". A limited number of other statistical agencies produce statistics and international best practice documentation is available from agencies and international organizations. These recommendations and frameworks need to be researched and adapted to the South African situation. This could be done through interaction with users and producers as well as alignment with the practical considerations in the country. This process could be repeated in different seminars and expert group sessions, with the eventual outcome that the South African Framework for Research and Development statistics is available and accepted by all the role-players in the industry, whilst remaining of a sufficient quality to ensure international comparability and the status of official statistics.

A formal guide or a systematic plan for the internship programme will guide interns on what important activities to focus on daily. Rothman (2007) is of the opinion that task clarity will enhance internship effectiveness because a clear plan about the job content will give structure to the programme and will indicate that the company is serious about the programme and the development of interns. Ad-hoc tasks could lead to boredom and it is, therefore, important that organizations should have clear plans in place for interns.

Learning plans should preferably be developed by both the intern and the mentor. This will ensure that expectations are clarified early on. Knowles (1986) and Kolb (1984) are of the

opinion that a learning plan/agreement assumes that learners are self-directed and accountable.

Both the intern and the mentor should give thought to the following all important question: “What do I need to know and learn and what does my mentor think I need to know and learn in order to develop my statistical skills?” Parilla and Hesser (1998) are of the opinion that the learning plan should typically include the following elements:

- Application of academic-conceptual learning. This could include statistical terminology learnt at university and how it is utilized in the organization.
- Application and acquisition of new skills related to statistics. The utilization of SAS application to analyse datasets is of particular relevance. Learners mostly take an introductory course on SAS theory at tertiary institutions, but here they actually get the opportunity to put theory into practice and to analyse real datasets.
- Personal developmental objectives. The intern and the mentor need to agree and focus on objectives which will contribute to the personal development of the intern. This needs to be formalized in the learning plan or agreement.
- Specification of the learning objectives to be achieved and against which the intern will be assessed. Formalizing objectives in the learning plan or agreement will ensure that there is structure and that learning can take place through real activities.

According to Knowles (1984) student learning objectives must be clearly specified in “behavioural” terms. For example, “to be able to properly analyse a statistical dataset using the SAS application” will be easier to evaluate than “to learn how the organization works with statistical datasets”.

Parilla and Hesser (1998) are also of the opinion that each learning objective should have specific activities or strategies that will enable the student to reach the outcomes. In order to determine whether these learning objectives or outcomes have been reached, it is important that regular assessments be conducted. The importance of assessment will be discussed next.



## 2.4.2 Assessment

Assessment is of particular importance for the Statistics South Africa internship programme. This is the case as the organization needs to determine whether interns have acquired the necessary skills and knowledge and are competent enough to be deployed (absorbed) into positions in the organization for which their skills and knowledge are suitable.

Internships should have formal objectives or outcomes which should be accompanied by a well-developed guide explaining how student experiences will be evaluated. This is essential in order not to compromise the credibility and integrity of the internship (Young & Baker, 2004). Cord and Clements (2010) maintain that the programme should promote an assessment framework which focuses on learning. This is an important element to determine whether interns can successfully demonstrate and apply the skills which they were supposed to learn. Mueller (2005) supports this idea by emphasizing the use of authentic assessments. These kinds of assessments should indicate whether students can apply their acquired knowledge and skills in the real world or not. It is, therefore, important when designing assessment instruments to take cognizance of the fact that these assessments should not only test theoretical knowledge, but more importantly, the implementation of that knowledge in real situations.

According to Mueller (2005) it is important that criteria by which learner performance will be evaluated are clearly indicated. The researcher also suggests that the criteria against which interns will be evaluated should be communicated early on in the process. This will assist in clarifying expectations and eliminate uncertainty among interns. When interns know what they are working towards and how they will be evaluated, they will have a sense of security. It is, therefore, advisable that an assessment plan be developed together with the learning plan or agreement. These two documents should be mutually dependent.

It is also important to note that assessments should be on-going and not a once-off event, because as Gallo (1971) emphasizes, students depend on feedback in order to learn. He also points out that studies have shown that students who receive regular feedback and are made aware of their successes, failures and progress, achieve better than those who receive no communication about their performance. In support of the idea of regular assessments, a paper entitled *Assessment for Learning: Formative Assessment*, published by the Centre for Educational Research and Innovation promotes the idea of formative

assessment. This overview suggests that formative assessment promotes the goals of lifelong learning, and leads to higher levels of student achievement. It is, however, important to note that formative assessment should be accompanied by developmental feedback from the mentor to assist the interns to improve in areas where they are lacking. Feedback does not necessarily have to be a formal, written process only, but it can be informal and verbal on an-going basis as well.

A comprehensive assessment plan allows for students to reflect on their experiences and should make them more active participants in the assessment process (Wilkinson, 2008). Adults have a need to reflect on their own experiences to make sense of the experience and to put it into context. By involving adults in the assessment process, they are encouraged to suggest improvements or to point out areas that need to be addressed by the mentor and of which the mentor might not be aware.

### **2.4.3 Considering qualifications during placement and assigning meaningful work**

Ramus (1997), Berger (1991) and Wurfel (1985) are all of the opinion that in order for an internship to be beneficial to students, students should be assigned professional-level work, and not mere menial tasks which do not complement their qualifications. Ramus (1997) further elaborates that interns should be given projects that are challenging and which require a substantial amount of responsibility, for “learning occurs best in the context of a compelling ‘presenting problem’...[and] reflection” (Ewell,1997:4).

It is important to recognize that adult learners bring rich and diverse stories into the workplace. Through situated learning, the internship experience can be transformed from the mentor being the source of data to interns being a resource for interpreting, challenging, and creating new knowledge (Stein, 1998). If interns are not regarded as empty vessels, but as adults coming with knowledge and experience, then it should be easy for the mentor to assign meaningful work.

It is also important that interns need to be placed in areas that are commensurate with their qualifications. Placing an intern with statistical qualifications in a human resources environment would not necessarily expose the intern to appropriate and relevant work experience. The intern might also lose the valuable knowledge and skills obtained during formal studies.

Meyer, Trost and Vukovinsky (1998:205) further emphasize the importance of matching the intern's qualifications to the role in which they are placed: "Anyone skilled enough to be a very good statistician may be less valuable to the company in a role that is less statistical; that is, the move is a net loss to the company over the short term... This is especially true if the company has experienced difficulties in recruiting good statisticians". This, once again, highlights the importance of placing interns with statistical qualifications in statistical related areas in order to close the perceived statistical skills gap. Meyer, Trost and Vukovinsky (1998) also highlight the fact that the managers and supervisors (mentors) are the most important people in meeting the challenges of statistics as a profession, because they are the people responsible for assigning relevant tasks and duties to interns in the workplace.

The importance of mentors in assisting interns to build on previously acquired knowledge and with the acquisition of new knowledge and skills will be discussed next.

#### **2.4.4 Mentors**

The quality of the supervision that the intern experiences in the workplace mainly determines the quality of the experience (Ryan, Toohey, & Hughes, 1996:372).

According to Steinmann (2006:3) mentoring is the process "where a person with a serving and inspirational attitude (the mentor) firstly sees development potential in a still-to-be-developed person (the protégé)." He is of the opinion that a mentor needs to support, guide, advise and influence the protégé. The mentor should also play a significant role in influencing the protégé in realizing his/her potential. This implies that there needs to be a special kind of relationship between the mentor and the protégé.

Cord and Clements (2010) maintain that, in order to nurture their development, students should be provided with support in the form of mentors within the workplace. They further maintain that encouragement and support of students by their mentors will provide them with learning opportunities and will place them on the pathway for self-development and lifelong learning. Taylor (1988) concurs by stating that interns need to be provided with constructive feedback by their mentors in order to enhance the internship outcome. He is of the opinion that mentors should provide assignments which will increase learning opportunities for interns. Mentors should be the people providing the interns with practical

work tasks, assessing progress, making recommendations on areas of development and providing regular and constant feedback.

Collins, Brown and Newman (1987) support the use of mentors who should provide external support in the form of ideal modelling of the performance, hints, reminders, explanations, or even missing pieces of knowledge to assist the interns during task execution. Interns coming into the workplace for the first time need this kind of guidance and support from experienced specialists in their various areas.

#### **2.4.5 Addressing a shortage of skilled personnel by enhancing employability**

The Statistics South Africa internship programme is intended to address a skills shortage in the public sector, especially in the core areas of statistical production (Nthangeni, 2011). Suitable university graduates are identified and recruited, and given intensive training for a period of twelve months. During this period, the interns need to be assessed regularly on a number of tasks with a view to ascertain their level of skill and suitability for permanent employment within Statistics South Africa as well as in the National Statistics System (NSS).

Graebner (1959) asserts that the overall results of an internship programme properly conducted should reduce turnover and enable graduates to get into production of quality business more quickly. Interns should, therefore, be prepared through relevant training to be work-ready upon the completion of the internship.

*The Public Service Internship Programme – Step by Step Guide* of 2006 stipulates that the general shortage of qualified and skilled people in the workforce should be resolved by giving interns the necessary practical experience and that the employability of unemployed graduates should be enhanced by providing them with valuable practical work experience.

Cord and Clements (2010) are of the opinion that a properly administered internship programme should substantially relieve the problem of recruiting new employees since the employer is able to observe the intern at work during the training period and can then make permanent job offers only to trainees who have demonstrated their worth and indicated their potential. Thompson (1950) concurs by stating that the programme should afford students the opportunity to practice their skills and knowledge, thereby increasing their chances of obtaining permanent employment.

Meyer, Trost and Vukovinsky (1998:204–205) assert that a statistical internship should lead to increased opportunities for statistics graduate students to become more employable.

## **2.5 SUMMARY OF THE CHAPTER**

It was gathered that in order for internships to be successful in furthering the education of young adults, they have to meet certain criteria. These include that learning should take place and that it should be guided by a learning plan/agreement. This will not only ensure a structured programme, but more importantly that expectations are clarified early on in the programme for both the intern/learner and the mentor by specifying the goals of the internship.

In order to determine whether learning indeed took place, it is important that a proper assessment plan be developed and implemented. This assessment plan should be linked to the learning plan/agreement. These two components may not operate in isolation, but should be dependent on one another.

Another criterion to ensure the success of the internship programme is that the qualifications of interns should be considered when they are placed, and that meaningful work should be assigned. This aspect is crucial in order for learning to take place, because it will not serve any purpose to place interns in areas for which their qualifications are not suitable. They may end up losing the valuable skills and knowledge which they have obtained through formal studies. In order to ensure continuous learning, it is also important that meaningful work be assigned, because adults learn by doing. Doing menial jobs will not expand and build their existing knowledge. Adults want to be challenged mentally, and this can be obtained through assigning meaningful tasks which require of them to be cognitively engaged and feel that they are contributing and making a difference.

Mentors are the people who are responsible for ensuring that the prior education of interns are furthered and enhanced in the workplace. Mentors determine the quality of the internship experience. They need to be experienced specialists who should ensure proper skills and knowledge transfer. Mentors are crucial in the learning process because they are responsible for assigning mentally challenging and meaningful tasks to the young adults. They also play a major role in the assessment process to determine whether learning took

place and whether skills were developed to the extent that interns can be deployed in areas where a shortage of skills are experienced.

It was interestingly noted that a major goal of most internship programmes is for organizations to “grow their own timber”. Through internship programmes, organizations are aiming to fill a gap where a shortage of specific skills is experienced. Furthering or continuing education addresses the need for the acquisition of skills, which can be obtained through practical programmes like internships. It is, therefore, advisable that in order for organizations to attain the goal of closing skills gaps, they invest as much as possible in the development of specific skills, statistical skills in this instance, by ensuring that all the crucial areas for success are incorporated not just on paper, but in the actual implementation and daily operation of the internship programme.

Chapter 3 describes the research design, research methodology, case study, interviews, document study, population, sampling procedures and sample size. The measuring instrument, data collection procedure, focus group interview, individual interviews, data analysis, research ethics and the trustworthiness of the research are also discussed.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 RESEARCH DESIGN

A research design can be seen as a plan, structure or strategy of investigation, which provides answers to research questions (Kumar, 2005:84). De Vos and Fouche (1998:123) describe the research design as the framework which guides how data are to be collected to facilitate the investigation of the research question.

In order to achieve the aim of the research, the researcher conducted an empirical study. The researcher chose a mixed methodology design together with the case study. Because multiple methods of data collection and analysis will be conducted, a combined method approach will be followed (Creswell, 1994:174). The combination of both quantitative and qualitative data will provide a better understanding of the research problem and questions than either method by itself (Creswell, 1998:552). This research will use the dominant-less dominant design which Creswell (1994:177) describes as a design in which the main focus will be on one (qualitative) paradigm with one small component drawn from an alternative (quantitative) paradigm. This design requires the researcher to formulate the literature review, research purpose and research question in support of the dominant design.

##### 3.1.1 The basic characteristics of qualitative research

The dominant research methodology falls within a qualitative framework. McMillan and Schumacher (2006:401) maintain that qualitative research describes and analyses people's individual and collective social actions, beliefs, thoughts and perceptions and that it is important for improvement of educational practice, theory generation and policy development. Through this study the researcher gained insight into the thoughts and perceptions of participants of the internship programme about the development and utilization of their skills.

According to Holliday (2008:5) qualitative research looks deeply into behaviour within specific social settings rather than at broader populations. For the purpose of this study, the

researcher aimed to investigate the phenomenon of the efficacy of the Statistics South Africa internship programme in developing the statistical skills of interns from the interns' perspective. This type of research measures qualitative data in words rather than in numerical form (Trochim & Donnelly, 2007:143). Fouché and Delport (2005:74) concur by emphasizing that qualitative research methods rely on using descriptive data in a mostly holistic manner.

The researcher concurs with the above view, since the purpose of the study was not to measure how many interns completed the programme as an indication of its effectiveness, but rather to use interns' own words as input for proposing improvement to the existing internship programme.

The use of qualitative research also further enabled the researcher to gain an understanding of how interns viewed and experienced the development of their skills and to explore possibilities for the improvement of the programme using their input. This ties with the issue of context which Hittleman (1997:43) believes is central to qualitative research, because in this instance the researcher was concerned with understanding the interns' experiences in context.

### **3.1.2 The basic characteristics of quantitative research**

The less-dominant research methodology was done within a quantitative framework. This method makes use of a type of instrument or device to obtain numerical indices that correspond to characteristics of the subjects. The numerical values are then summarized and reported as the results of the study (McMillan and Schumacher, 2006:178).

Leedy and Ormrod (2005:179) are of the opinion that quantitative research aims to describe a situation as it is. The researcher used a survey research design which aimed to gather information which included but were not limited to characteristics, opinions, attitudes or previous experiences (Leedy & Ormrod, 2005:183).

The research was conducted as a case study. "A case study can be regarded as an exploration or in-depth analysis of a 'bounded system' (bounded by time and/or place), or a single or multiple case, over a period of time" (Creswell, 1998:61). A case study was used, because the case being studied may refer to a "process, activity, event, programme or



individual or multiple individuals” (De Vos et al., 2005). Denscombe (1998:30) sees this focus as a “spotlight on one instance”. The case under investigation in this instance was the internship programme at Statistics South Africa.

### **3.2 RESEARCH QUESTION**

According to Mouton (2001:48), a research question is a clear and unambiguous statement of the object of a study. This implies that one should immediately know what the study is all about just by looking at the research question.

The main question in this study is as follows:

**How effective is Statistics South Africa’s internship programme in furthering the education of young adults through developing their statistical skills?**

#### **3.2.1 Sub-questions:**

- 1) How are the qualifications of interns matched to the specific areas where they are placed to gain practical (vocational) training?
- 2) What is the relevance of the short courses which interns are exposed to in developing their statistical skills?
- 3) How does the interns’ experience (vocational training) make them more employable in statistical areas?
- 4) How are interns utilizing the statistical skills which they have acquired through their formal studies in the areas in which they are placed?
- 5) What is the extent of mentors’ involvement in the internship?
- 6) How are successful interns linked with the recruitment process of permanent members of staff?

### **3.3 RESEARCH POPULATION, SAMPLE AND SAMPLING METHOD**

According to Strydom (2005a:193), population in research refers to individuals who possess specific characteristics that are of interest to the researcher. Population may also refer to groups, organisations, human products or events (Welman & Kruger, 1999:47). The population chosen for this research was the interns who participated in the Statistics

South Africa internship programme between 2006 and 2011 and who hold statistical-related qualifications.

A sample is defined as elements of the population that are included in the actual study so as to understand the population as a whole (Strydom, 2005a:194). The sample for this research consisted of all interns with statistical qualifications who were drawn from a pool of interns who participated in the Statistics South Africa internship programme between 2006 and 2010. A total of 147 interns participated in the internship programme between 2006 and 2010. Only 49 of these interns held statistical qualifications. All 49 interns who possessed statistical qualifications were sampled.

The researcher is of the opinion that the intention of the study was not to generalize to the entire population of interns in all government organizations, but to get input and develop recommendations about the development of specific skills of interns participating in the programme to the extent that the information shared could be used for all interns in the same institution.

The researcher chose non-probability sampling by a purposive method as method of choice. According to Strydom and Delport (2005:328) purposive sampling means that a particular case is chosen due to the fact that it might illustrate certain features of interest to conduct a particular study. The researcher selected the respondents based on her own judgment (Babbie, 2005:486) and her knowledge of the population as well as for the purpose of the study (Babbie, 2001:179). In this instance, information was gathered from interns with statistical qualifications because they were the participants in a programme which was specifically designed to develop statistical skills of interns to fill a gap where a shortage of skills was experienced. These interns are also the ones to pave the way for future interns to benefit from proper administration of the programme.

### **3.4 DATA COLLECTION PROCEDURE**

According to Denscombe (1998:84) it is acceptable to use different data collection techniques or procedures to collect data about the same phenomenon as more data becomes available. By doing this, the researcher can gain multiple perspectives on the research. Creswell (1994:148) maintains that data collection also involves aspects such as

setting boundaries for study, collecting information through interviews, documents and visual material.

Before the researcher commenced with data collection, she sought permission from the management of Statistics South Africa to conduct the research in the organisation (see annexure B). The researcher also obtained the consent of the respondents to participate in the study (annexure C) and explained what the purpose of the study was (annexure D). The participants also had to agree on the date and time for the interviews and focus groups. The researcher conducted the interviews at Statistics South Africa and gained access to documentation regarding the internship programme from the management of the programme.

The following research techniques were used to collect data:

#### **3.4.1 Semi-structured interviews**

This study also made use of face-to-face verbal exchanges in the form of interviews. Interviews can be regarded as the transactions that take place between those seeking information and supplying information on the part of the other (Cohen, Marion & Morrison, 2005:268). Greeff (2005:292) regards qualitative interviews as an attempt to understand the world from the participants' point of view. The researcher sought inputs from interns on whether or not they felt that their skills were properly developed, and to gain insight into their views on what can be done to enhance the successfulness of the internship programme.

Interviewers normally use an interview guide to assist them in asking questions and recording answers consistently for all respondents (Lewis-Beck, Bryman & Liao, 2004:518). The researcher used a semi-structured interview schedule but allowed room for flexibility in order to allow the interns to express themselves and to share their own ideas (Greeff, 2005:295).

Although semi-structured interviews are perceived to be time-consuming (Greeff, 2005:297), the interviewer felt it necessary to use this approach to gain as much insight into interns' perceptions as possible. The researcher explained the purpose of the study and ensured the participants that their confidentiality would be respected. In addition,

the researcher also explained to interns how valuable their inputs were to ensure that suitable adaptations were made to the programme in order to ensure the success thereof (Greeff, 2005:287).

The interviews lasted 45 minutes to an hour, and a total of 10 respondents were interviewed, but the sample size could be increased until a saturation point was reached. The interviews were conducted in English.

The interview schedule was pilot tested on three interns who were not part of the main study but who represented the same population as the one in the study (Kumar, 2005:22). The pilot test was conducted under the same conditions as those of the main study. This pre-testing ensured that errors were identified before the tool was used in the main study (Babbie, 2005:210).

#### **3.4.2 Document study**

Official documentation on the Statistics South Africa internship programme, specifically in statistical areas, was studied. Cohen, Marion & Morrison (2005) cite Bailey (1994:294) by referring to official documents or non-personal documents as those documents that are compiled and maintained on a continuous basis by large organizations such as government institutions. Official documents are also more formal and structured than personal documents (Bailey, 1994:294). Documents such as learning plans, assessment plans and documentation containing information regarding the qualifications of interns and the types of training that they were exposed to were studied. The researcher also had access to policies and procedures regarding the internship programme. Annexure F provides a summary of the documents accessed and indicates how these documents were significant to the study.

#### **3.4.3 Questionnaire**

Self-administered questionnaires were used to acquire quantitative data. These were appropriate due to the nature of the research study, and the type of questions that had to be answered. Questionnaires allowed for the identification of interns' qualifications and the areas where they were placed in order to determine whether they were correctly placed to

optimally utilize their skills. It was also useful to determine the kind of training that interns were exposed to, and to determine the extent of involvement of the mentors.

Rating questions were used to collect opinion data (Saunders et al., 2009). Likert scales were used to assess how strongly the participants agreed or disagreed with a statement (Saunders et al., 2009), for example 'My skills are fully utilized in the area where I am currently placed.'

The questionnaire was pilot tested with a control group who was not part of the main study. Kumar (2005:22) is of the opinion that this group interns should represent the same population as the one in the study. The pilot test was done under similar conditions as those of the study. The questionnaire was also pre-tested with a few experts (executive management) in Statistics South Africa to ensure that errors were omitted before administering the tool in the main study (Babbie, 2005:210). A statistician also approved the questionnaire before it was piloted, to determine whether a proper data analysis will be possible. It was suggested that to get an indication of the areas in which interns were placed, they should not be given the option to type in the name of the section or division, but that they should rather select the division or section from a drop-down list. This was the case because the questionnaire was administered electronically and respondents could easily erroneously type the name of the division incorrectly or differently, thereby influencing the data analysis.

### **3.5 DATA ANALYSIS**

Huberman and Miles (1998:180) are of the opinion that data analysis is an interactive process which contains three sub-processes, namely, data reduction, data display and conclusion drawing/verification. According to them, data reduction involves choosing a conceptual framework, research questions, cases and instruments. They define data display as the organisation, compressing of the information that permits the drawing of conclusions and/or taking action. The drawing of conclusions and verification immerse the researcher into interpretation, which entails the drawing of meaning from the displayed data.

McMillan and Schumacher (1997:221) are of the opinion that the aim of the analysis and interpretation of qualitative data is to discover patterns, ideas, explanations and

understanding. One should, therefore, systematically search and arrange the interview transcripts, field notes and other sources to increase your own understanding thereof and be able to present your findings to others (Creswell, 1994:153).

De Vos et al., (2005:333) describes data analysis as the “process of bringing order, structure and meaning to the mass of collected data”. This process should enable the researcher to identify common themes in people’s descriptions of their own experiences (Leedy & Ormrod, 2005:140). By analysing this description, it can be said that what and how people feel about what they have experienced, is more important than the amount of data gathered. The researcher, therefore, tried to establish how interns experienced their internship and tried to gather information based on these experiences in order to make suggestions of improvement of the programme to make it achieve its objectives.

Even before data were recorded, the researcher requested permission from the respondents to use a tape recorder in order to ensure the accuracy of information (Trochim & Donnelly, 2007:146). The researcher also, with the help of a co-facilitator, recorded notes during the interviews to serve as a reminder of what was said.

The interview questions, questionnaire and documents obtained were summarised, coded and clustered around main themes in an effort to understand the way in which Statistics South Africa goes about developing the skills of interns in their programme. In order to logically analyse the data in explaining how the programme currently operates and what can be done to improve it, the data were sequenced according to where interns were placed, what their major subjects were, the utilization and development of their statistical skills, the involvement of their coaches, the training they were exposed to, and suggestions made for improvement of the programme.

Immediately after the interviews were conducted, the researcher collated and reviewed the rough notes, after which summaries were made of the different documents provided by the management of Statistics South Africa. Summarizing the documents also assisted the researcher in finding links, emerging patterns and sometimes inconsistencies, between what was said during the interviews and how it was recorded in the official programme documentation. The collation process also enabled the researcher to see emerging patterns and themes. After the initial field notes were reviewed and corrected, the relevant

data were translated on to a summary form (see annexure F) and encoded. The researcher used abbreviations of key words to code the data in ways that she understood.

The advantage of using a summary form is that it allows the researcher to do preliminary data reduction without losing any of the basic information. The impressions and reflections of the interviews were captured and data were collapsed for further reflection and analysis (Miles & Huberman, 1994:52).

The next step was for the researcher to consider the extent to which the available data answered the question about whether or not interns' statistical skills were developed and what adaptations could be made to enhance the existing programme.

According to De Vos et al., (2005:339), the last step in the information analysis is the search for alternative explanations. The researcher had to consider the various ways in which interns experienced the development of their statistical skills. The final result was a report on the extent to which interns agreed or disagreed with whether or not their skills were developed, and a summary of suggestions from interns themselves on suitable adaptations to the programme.

The report was presented in a way that could be understood by the general public. The instrument also reflected the major categories of the analysis and discussion of the findings.

### **3.6 ETHICAL ASPECTS**

The researcher sought permission to conduct the research from the Ethics Committee of the College of Education at UNISA (annexure A). After permission was obtained from the College, permission to conduct the research on their premises using some of their interns (who are now employees in the organization) as respondents was also sought from the management of Statistics South Africa (annexure B). The following statement aims to address the rest of the ethical challenges in the research.

All participants were informed of

- the aims, purpose and methods of the research

- the maintenance of confidentiality and anonymity through eliminating all kinds of materials or information that could lead others to identify the subjects involved
- the subjects' right to refuse taking part in the research

Focus group and individual interviews were conducted with the permission of the interns' line management and were scheduled early in January before the organization was fully operational. This was done to minimize the impact on the organization's productivity.

In the reporting of the data the names of the interns were omitted to ensure that confidentiality was maintained throughout the research process.

In order not to violate the privacy of the interns, the researcher requested their permission to use a recording device during the focus group interviews to verify the accuracy of the collected data.

Strydom (2005c:63) maintains that researchers have an ethical obligation to ensure that they are competent and adequately skilled to undertake the proposed investigation. The theoretical modules studied by the researcher provided the groundwork for the process of empirical research.

Strydom (2005c:65) is of the opinion that findings should be presented in clear, unambiguous and unbiased ways which acknowledge all participants in the study. This includes crediting all sources consulted to understand the phenomenon. The researcher will release the findings in the form of a thesis which will be available to the public, including the respondents and the management of Statistics South Africa, electronically and in print at libraries.

### **3.7 VERIFICATION**

Validity in this research is mainly focused on the qualitative design of this study, since this will be the main or dominant design of the research. Leedy and Ormrod (2005:100) maintain that validity within a qualitative framework is rather referred to as a verification process.



The nature of the research design provides a great deal of verification or validity due to comparing multiple data sources in investigated themes. These data sources include focus groups, individual interviews and document studies that support the main qualitative design. Besides using comparisons of data sources, this research also relied on additional verification strategies for the qualitative design such as the use of respondent validation and feedback and opinions of experts in the field. A representative sample of the intern community at Statistics South Africa was obtained to enhance external validity.

### **3.8 ASSUMPTIONS**

Certain assumptions were made about the internship programme, the organization from which the target population was drawn, and about the individual participants.

Firstly, the study assumed that interns have a basic understanding of the best way in which their statistical skills can be developed through an internship programme, and that they would be in the best position to provide input and recommendations for the enhancement of the programme.

The second assumption was that all interns have a clear understanding of the most relevant areas in the organization where their qualifications could be optimally utilized.

Thirdly it was assumed that all interns would be able to identify the specific courses/training that was most suitable and relevant for the development of their skills.

The fourth assumption was that interns would fully engage and agree to the interviews knowing that their confidentiality will be respected.

The fifth assumption was that participants would actively and willingly participate in the data collection and that the sample would be representative of the whole organization.

The sixth assumption was that interns did not get the full support of the mentors assigned to them, if mentors were assigned at all.

Finally it was assumed that the management of the relevant organization would grant permission for the study to be conducted.

### **3.9 SUMMARY OF THE CHAPTER**

In this chapter, the research design and research methods were discussed. The research population, sample and sampling techniques as well as the data collection techniques, which included focus group interviews, individual interviews, document study and questionnaires, were discussed. Finally the data analysis, ethical aspects, verification, and limitations and assumptions were elaborated upon.

Chapter 4 contains the research findings on furthering the education of young adults through an internship programme.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND INTERPRETATION**

#### **4.1 INTRODUCTION**

In this chapter, the researcher dealt with empirical findings derived from the case study of 10 participants from Statistics South Africa who were interviewed and 28 participants who completed questionnaires. All participants were interns who participated in the internship programme between 2006 and 2011.

The researcher used a non-probability sampling method to select 15 participants for the pilot study (interviews) and 10 for the actual study. 30 participants were selected for the pilot study for the completion of the questionnaires, and 28 for the actual study. The discussion of the research findings was based on themes and sub-themes identified during the semi-structured interviews through the use of a guide, information obtained through the document study as well as through a statistical analysis based on the questionnaires.

#### **4.2 RESEARCH METHODOLOGY**

##### **4.2.1 Research approach**

The researcher used both a qualitative and quantitative research approach to gather data from the participants. For qualitative research the dominant approach was used and for quantitative research the less-dominant approach was used. The rationale for utilizing the dominant qualitative approach was to gain first-hand insight into how interns experienced the internship programme and what improvements they could suggest to the current programme.

##### **4.2.2 Research design and procedures**

The researcher used semi-structured interviews as well as electronic questionnaires to gather data from interns. The interviews were scheduled to take place for 45 minutes to one hour. The researcher obtained permission to conduct the study from the Ethics Committee (see annexure A), which regulates all research related activities within the

institution. Permission was also sought from the management of Statistics South Africa (see annexure B). On receipt of approval to continue with the study, the researcher distributed informed consent forms (see annexure C) to all participants who had been randomly selected. After the signed consent forms were received back from the participants, the researcher used e-mail to distribute the electronic questionnaires and to schedule appointments to conduct the actual interviews. Data were gathered by means of an electronic questionnaire as well as a semi-structured interview based on an interview schedule (see annexure D).

Prior to the interview, the researcher once again discussed the consent form with the participants to ensure understanding of all procedures. All interviews were recorded on a recording device to maintain accuracy and consistency when analysing and interpreting the data gathered from the respondents.

#### **4.3 PROFILE OF RESPONDENTS**

All the participants were young adults who participated in the internship programme between 2006 and 2011. All the sampled interns presented statistics as one of their major subjects, or at least at second-year level. One could conclude that this group of interns had enough experience to share their experiences on the internship programme and to propose suitable recommendations for the improvement of the programme.

All the participants are now permanent employees of Statistics South Africa and they get to engage with new interns who arrive in the organization every year, thereby having first-hand insights into what the interns are experiencing.

All the interns that were sampled had at least one mentor while they were on the internship programme. One of the interns was about to leave Statistics South Africa at the end of January 2012. Three interns were actively looking for alternative employment. Three interns were happy to remain in the organization, and three interns were unsure as to how long they might remain with the organization. All interns interviewed were currently employed in a statistical area.

## 4.4 QUALITATIVE DATA

### 4.4.1 Central themes

The recorded data obtained from respondents by conducting the interviews were transcribed and analysed by using Tesch's method of open coding in order to identify categories, themes and sub-themes (Creswell, 1994:155). The following table indicates the different themes and sub-themes identified by the respondents in their understanding of the effectiveness of an internship programme.

**Table 1: Themes and sub-themes**

<b>Themes</b>	<b>Sub-themes</b>
<b>Learning through training</b>	Relevance of training, application of skills
<b>Learning plans</b>	
<b>Assessment</b>	
<b>Placement</b>	Considering qualifications, meaningful work
<b>Mentors</b>	
<b>Retention</b>	Absorption process, developmental path, salary

### **THEME 1: LEARNING THROUGH TRAINING**

The first theme identified was the respondents' thoughts on whether their statistical skills were developed through the training they were exposed to during their internship programme. The responses were divided into two sub-themes: relevance of training and the application of skills.

#### **Sub-theme 1: Relevance of training**

All ten (100%) respondents indicated that the training which they received was relevant for developing their statistical skills because of courses like SAS (Statistical Analysis Software), SADC (Southern African Development Community) survey methodology and basic sampling courses provided by Statistics South Africa. They, therefore, were of the

opinion that their academic training was contextualized through relevant and appropriate experience and training in the organization (Meyer, Trost & Vukovinsky, 1998).

This led the researcher to the conclusion that the training that interns at Statistics South Africa are exposed to is relevant and that the skills that they gain through this training can be applied in any statistical area. The following statements are an indication of the respondents' responses:

<b>Respondent 1</b> "Training was relevant because some of the training we did apply it in the job positions which we've occupied."
<b>Respondent 2</b> "SADC training for statistics is very, very important because of all the surveys that Stats conduct. So training was very relevant for developing my statistical skills."
<b>Respondent 3</b> "Trainings were relevant to develop statistical skills."
<b>Respondent 4</b> "Extremely relevant. SAS is extremely relevant and important."
<b>Respondent 5</b> "It was relevant because some of the stuff that we learnt from the training, we apply them on our daily work."
<b>Respondent 6</b> "It was relevant. I went through SAS and SADC and I was trained on how to develop questionnaires and write reports."
<b>Respondent 7</b> "I think it was relevant although we did some of the stuff in first year but it was really helpful. Basic sampling helped, at university it was just theory but nothing practical."
<b>Respondent 8</b> "Training was relevant. SADC, SAS and the training was broad."
<b>Respondent 9</b> "The training was relevant. SADC training exposed us to the practical part, and at varsity we got the theory. The training was practical."
<b>Respondent 10</b> "It was relevant. We only had course work and no real work in survey methods before. SADC exposed us to lots of knowledge."

## Re-contextualizing with literature

In order to acquire the desired knowledge, Young (1993) emphasizes that learners should be engaged in situations which require complex, realistic and problem-centred situations. One can thus conclude that learning is indeed taking place because learners can definitely see the relevant relationships between what they learn and the development of their statistical skills (Gallo, 1971).

### Sub-theme 2: Application of skills

Six (60%) of the ten respondents indicated that they could apply the skills which they gained through training. Four (40%) of the 10 respondents, however, felt that their skills were not utilized in the areas in which they were placed. This led the researcher to the conclusion that the majority of interns at Statistics South Africa get the opportunity to apply the skills that they gained through their training. The following statements are an indication of the respondents' responses:

#### Respondent 1

"Like with SAS training you could apply it in any other department. But as a developer, that training you can only like use in an IT area... In ADAPT they didn't actually use my statistical skills, but they used my IT skills. But when I came to NSS, I had to edit specifications on databases from education. It I did in SAS. I enjoyed it."

#### Respondent 2

"Most definitely the training prepared me to be utilized in any statistical area. So doing the exercises actually prepared you for what you can expect in reality when you actually have to go and do those things. I programmed in SAS, because in Statistics SA you use SAS, so I think it most definitely utilized my skills."

#### Respondent 3

"They give you a variety or range of statistical, computer and all the trainings... they can take you anywhere in the organization... the application of the training is important. I found myself in a situation where I didn't really use much of the skills that I have been trained on... because you might have been trained on SAS, but then you don't use SAS because you are not working on any analysis. So it means that your SAS skills, though you have them, you can't utilize them."

#### Respondent 4

"We did economic indicators and that gave me training in different areas and the SAS we used they focused on general things. I could write programs so I was exposed to different things and I could use it anywhere in Stats. During my internship I was involved in the research, I did some data collection, basically analysing a survey, so I was involved in the different aspects of a survey."

**Respondent 5**

"It was relevant because some of the stuff that we learnt from the training, we apply them on our daily work... I was working in Household Stats. Creating tables using SAS to create tables. Same SAS that I learnt during my internship training. I did utilize those skills in that particular division where I was in."

**Respondent 6**

"...because now I think I can work in any division in Stats and still cope and still deliver. I can adapt easily. I went through SAS and SADC, and trained on how to develop questionnaires and write reports, but my skills were utilized for five months. The rest of the months I was doing admin work. Organize meetings, taking minutes, etc."

**Respondent 7**

"Pretty basic stuff I had to do. You only do basic stuff so I felt my skills were not utilized. What we do here and what is done in private sector is totally different."

**Respondent 8**

"Yes, training was broad. I received a lot of technical support."

**Respondent 9**

"The surveys were practical."

**Respondent 10**

"During my internship I was not placed where my statistical skills were used. The kind of work did not tap into my statistical skills."

### **Re-contextualizing with literature**

According to Parilla and Hesser (1998), internships should offer an extended opportunity to apply previously learned knowledge and understanding in real settings. It appears that the majority of interns were of the opinion that they indeed got the opportunity to apply their skills during their internship year in Statistics South Africa. Interns, therefore, acquire new knowledge because they can make connections between classroom-based knowledge and knowledge learned from their experience (Parilla & Hesser, 1998).



## THEME 2: LEARNING PLANS

In order for learning to take place the activities that interns are involved in need to be guided and structured. Task clarity will also enhance the effectiveness of the internship programme (Rothman, 2007). Skills which interns obtained through training could also be lost if there is no plan in place to ensure that the skills are utilized.

All ten (100%) of the respondents indicated that learning plans are an essential element of the internship programme. Three (30%) interns were of the opinion that the learning plans do not get implemented properly. This led the researcher to the conclusion that although learning plans are regarded an important element of the internship programme in Statistics South Africa, more attention should be directed to the actual practical implementation of the learning plans. The following statements are an indication of the respondents' responses:

**Respondent 1**

"I would assume that learning plans would state what kind of learning you think the intern should go on that will help him progress in the field that he is working in and that after that you can assess whether he has acquired the recommended skills that he needed. Learning plans doesn't get implemented."

**Respondent 2**

"One should match whether what is being stated in the learning plans are actually being done, because in that way you can also really determine whether the coach actually wants to give that person relevant work to do or not."

**Respondent 3**

"If you've got a learning plan in order to make sure you learn what you are really supposed to learn, you need to have a track on what you have done, and then look on your learning plan to see this month have I achieved at least one thing..."

**Response 4**

"I think that the learning plan is good because it gives you an indication as an intern of what to expect. You need to feel like you know what's gonna happen next. So you know beforehand what the outcomes should be. So you have a guideline of what needs to be done and you will be assessed on it, so it's good."

**Respondent 5**

"You keep track what an intern is doing throughout the year. They are important and they should remain. You keep track of intern of whether they working or just sitting there."

<p><b>Respondent 6</b></p> <p>“They are important. They should be used and developed. The reason why I was exposed in LSS is because I had a learning plan. But in NSS it took them a long time to develop it for me.”</p>
<p><b>Respondent 7</b></p> <p>“A work plan of what you plan to achieve at the end of the year. It should be utilized fully.”</p>
<p><b>Respondent 8</b></p> <p>“It is a good idea. It is however not properly utilized.”</p>
<p><b>Respondent 9</b></p> <p>“A learning plan is a good idea to know what is expected.”</p>
<p><b>Respondent 10</b></p> <p>“It is a good thing to structure learning to take place. It assists with the management of the intern.”</p>

### **Re-contextualizing with literature**

From the interviews as well as the documents which were studied, it was evident that personal development objectives as well as learning objectives against which interns are to be assessed are specified and formalized in the learning plans for interns. These are important elements to consider and ensure the success of the internship programme (Parilla & Hesser, 1998).

### **THEME 3: ASSESSMENT**

Assessment is of particular importance in Statistics South Africa, because the organization needs to determine whether interns obtained the necessary skills as was planned and set out in their learning plans. This is the case because of the retention strategy of the organization, which should be linked to the outcomes of the assessment.

All ten (100%) of the respondents indicated that assessment is an important tool to monitor the progress of interns and to determine whether they actually gained the skills which they had to gain. This led the researcher to the conclusion that assessment is regarded an important element of the internship programme in Statistics South Africa.

The empirical evidence which will be explored further below seems to be in support of the literature reviewed regarding the importance of assessment. The following statements are an indication of the respondents' responses:

<p><b>Respondent 1</b></p> <p>"You can assess whether he has acquired the recommended skills that he needed."</p>
<p><b>Respondent 2</b></p> <p>"The interns should be assessed, because there are a lot of them that's coming here to get it on their CV's that they did the internship but then they haven't actually worked."</p>
<p><b>Respondent 3</b></p> <p>"If you've got your reports back then you can see the progress. That now you have learned this, and now you can move onto learning the next thing."</p>
<p><b>Respondent 5</b></p> <p>"They must be assessed to know if you doing something right or wrong. Whether you progressing or not."</p>
<p><b>Respondent 6</b></p> <p>"Assessment plans should be utilized for the intern to see their progress. To remind you this is your work, you are this far now, whether you coping and what needs to be improved."</p>
<p><b>Respondent 7</b></p> <p>"Assessments are to be discussed quarterly to see ok if you achieved that now I can move on. It's a progress monitoring tool. It should be utilized fully."</p>
<p><b>Respondent 8</b></p> <p>"Assessments are handed in but more can be done with those."</p>
<p><b>Respondent 9</b></p> <p>"One should be assessed to check progress."</p>
<p><b>Respondent 10</b></p> <p>"If you are not assessed they can't measure whether a person learnt anything. You can identify areas for development."</p>

### **Re-contextualizing with literature**

Mueller (2005) supports the use of authentic assessment which should determine whether students can apply their acquired knowledge and skills in the real world or not. It is evident

from the instruments which were examined and the responses from interns that the implementation of knowledge in actual situations is measured.

The criteria by which learners were to be assessed were clearly spelt out and it was evident that these criteria were communicated to learners early in the process because it was also part of the discussions of the learning plans (Mueller, 2005).

Students depend on feedback in order to learn and those who receive regular feedback tend to learn more (Gallo, 1997). Information gathered from the assessment instruments indicates that interns are assessed at least once a quarter, and again at the end of the internship year.

#### **THEME 4: PLACEMENT**

Interns normally join an organization without prior knowledge of the areas in the organization for which their qualifications would be most suitable. It is, therefore, important that the mentors guide them in order to ensure proper placement. Incorrect placement could prove disastrous for an intern because this could mean that the intern's potential is not optimally utilized and that an intern's skills are not developed. Incorrect placement is not beneficial to either the intern or the organization. From the empirical findings it was clear that the two aspects below were crucial in ensuring proper placement, thereby ensuring that the statistical skills of interns are developed.

##### **Sub-theme 1: Considering qualifications**

If interns are not placed in an area which complements their qualifications, then valuable knowledge and skills could be lost. The purpose of internships is specifically to ensure that interns get the opportunity to put in practice the theoretical knowledge which they have gained during their formal studies. This will then enhance further learning because their academic training will be contextualized (Meyer, Trost & Vukovinsky, 1998:204–205). If statisticians are not placed in statistical areas, then their development could be stunted.

Although all ten (100%) interns indicated that it was important to consider qualifications for placement, four (40%) of the interns were of the opinion that there was no proper match

between qualifications and placement. The following statements are an indication of the respondents' responses:

<p><b>Respondent 1</b></p> <p>"If you studied stats, you should be placed in a statistical area. If you studied IT, you should be placed in an IT area. When you have both qualifications, they should allow you to work in both areas to determine where you would prefer to work in which area."</p>
<p><b>Respondent 2</b></p> <p>"I'm not doing any statistical analysis, and sometimes you get really bored if you're doing something which you really didn't study for so what they should do is that if you know its statisticians, you they should be placed in survey areas. I think there is a mismatch between qualifications and placements."</p>
<p><b>Respondent 3</b></p> <p>"I don't think there was a proper channel to look at what people/intern qualification they have. They just look like someone would just ask the mentors, do you want some interns, and they'll ask them which ones, like who has what qualification and they would say no we need statisticians with statistics, we need those with computer science, economics and all that."</p>
<p><b>Respondent 4</b></p> <p>"Well, it obviously has to be linked. There are different areas in stats."</p>
<p><b>Respondent 5</b></p> <p>"There is not necessarily a proper match."</p>
<p><b>Respondent 6</b></p> <p>"I think mostly they are properly placed, but the problem sits with the division whether they use you or not. But interns are properly placed."</p>
<p><b>Respondent 7</b></p> <p>"We have our own preference as interns. I for one wanted to go to National Accounts but there was a restriction because of qualification. I think the way we are placed it depends on where there's a need for more employees, so you have to deliver and not learn."</p>
<p><b>Respondent 8</b></p> <p>"Qualifications and skills are not matched. They should follow a more focused approach."</p>
<p><b>Respondent 9</b></p> <p>"Yes the qualifications are considered. Interns are correctly placed."</p>
<p><b>Respondent 10</b></p>

“The qualification is not good enough to make a good placement. There should be a discussion with the intern.”

### **Re-contextualization with literature**

Students should be in a position to apply what they have learned, as well as to develop the relationship between theory and practice and an internship should ideally provide this opportunity (Sweitzer & King, 2009:3). As indicated by Kish (1978) statistical interns should, therefore, be placed in statistical areas where they can apply statistical theory and methods.

### **Sub-theme 2: Meaningful work**

Interns need to be exposed to actual work in real situations in order to enhance their learning. Kolb (1984:38) maintains in his theory on experiential learning that learning is the process whereby knowledge is created through the transformation of experience.

Seven (70%) of the 10 interns indicated that they were not exposed to meaningful work during their internship year. Only three (30%) interns indicated that they were assigned real or actual work during their internship year. This led the researcher to the conclusion that a lot more attention needs to be paid to this all-important element of a successful internship programme. It is of no use to invest a lot of time and effort in the training of interns if they don't get the opportunity to put into practice what they have learnt. If interns are not exposed to meaningful work, then they also cannot be assessed authentically to make proper judgments of whether or not they are suited to be utilized in the organization beyond their internship year. The following statements are an indication of the respondents' responses:

#### **Respondent 1**

“I could not fully use what I learnt in my formal studies. You don't get meaningful work. Because a lot of interns that were in the same year as me weren't actually given any work to do. They were sitting around doing nothing. No growth.”

#### **Respondent 2**

“If your coach feels threatened by you, then they just gonna give you work that is irrelevant.”

**Respondent 3**

"I didn't pick up a lot of skills during my internship year. The kind of work that I was doing, it only wanted me to use Excel. So I've just used a little of my knowledge in Excel to do this and that, but mostly what I was expecting was for me to be hands-on in some certain skills, like some analysis. They will let you sit there, I was expecting to do more."

**Respondent 4**

"The training that we did and the work that we did allowed you to become a professional. I mean it's not just about the intern doing the work, but it's about the intern being exposed to what the professional is doing. I have noticed that some of the interns are doing administrative work."

**Respondent 5**

"In National Accounts I was not doing anything related to Stats. It was just research. You sit there and you read and then you come up with documents. But when I moved to Household Labour Force Surveys, I utilized those skills. I did really benefited. So it was just another division I didn't utilize it, but when I got to another division, I utilized them. Some will just put you in the corner, they don't give you work."

**Respondent 6**

"I wasn't exposed to stats side. I did a lot of admin work which was not relevant for my studies. They should know in advance what they want the intern to do when he/she arrives, and they should communicate with the intern before."

**Respondent 7**

"As interns we have this great expectations and when they aren't met, we feel like our skills are not being utilized. You have to deliver. Your genius and creativity is not allowed. It depends on who wants you to do what. You are not allowed to give inputs. We cannot explore things."

**Respondent 8**

"Even though I was an intern, I was taken on as an employee, and I had to do actual work. To ensure meaningful work, the mindset of the managers needs to change. Interns are seen to be a nuisance to some managers."

**Respondent 9**

"The two areas I was placed in were more focused on research skills, finding documents on the internet. It was not really focused on statistics. There should be an upfront discussion with the intern and the supervisor to develop and gain experience and knowledge instead of just handing work not getting to where the intern can be developed."

**Respondent 10**

“The mentor he was pushing in doing work. I did sampling, so I was doing actual work. Real work.”

### **Re-contextualization with literature**

Interns should not be given mere menial tasks to do just to keep them busy, since this could lead to boredom. For the internship to be beneficial to interns, they should be assigned professional-level work (Ramus, 1997). The empirical evidence above suggests that interns want to be involved in challenging, actual work which will optimally utilize their skills and further enhance their learning.

### **THEME 5: MENTORS**

The mentor plays a major role in influencing the intern in realizing his/her potential through assigning meaningful work, providing guidance and support, giving regular feedback, drafting of a learning plan, and assessing the intern on an on-going basis. Seven (70%) of the interns indicated that they had supportive mentors who exposed them to relevant work and who guided them through their development. Three (30%) of the interns indicated that they did not have supportive coaches at all.

Therefore, the researcher concluded that the relationship between the mentor and the intern is one of the most important relationships which needs to be nurtured and developed, and that the coaches need to be prepared for their all-important role as confirmed by the empirical evidence below. The following statements are an indication of the respondents' responses:

#### **Respondent 1**

“My coach was useless. Whenever I had a question and I go to her, she would tell me to go and Google it. So after that, whenever I had a question, I would go to anyone else except her. And that's why I rotated. They should go on training to be mentors and they should be given a specific plan on what they need to do and goals that they need to achieve for that year as mentors and if they don't achieve those goals then they shouldn't be recommended for coaches the following year.”

#### **Respondent 2**

“My coach was very passionate about the internship programme, so she did a very, very



good job. Nothing went wrong there. I didn't have any problems with her. If you didn't have work, you could just go to her and she would make sure that she gives you work, and relevant work that's important to you that will build your skills. And she exposed you to so many things. I was one of the lucky ones I think."

**Respondent 3**

"The role of the mentor or coach is to make sure that you have got something to do. And if you have something to do it must be outlined somewhere and that's why I talked about the learning plan. If that is developed, then it is the mentor's role to make sure that you are learning whatever you have decided on learning for each period that it has been agreed that it will be on a quarterly basis or on a monthly basis. So have follow-up meetings with the coach, one-on-one meetings with the coach on seeing where you're lacking, where you're really moving forward."

**Respondent 4**

"I had two, the one was extremely supportive, he basically involved us in everything that was there, I was always involved and knew what was going on. The second coach that I had, we had a very good relationship he always involved in the projects, so when there was a project, I was always assigned something to contribute towards it. I always felt part of the team or part of the project. Even if I wasn't specifically working on it, they always showed me what they were doing, so I could at least see what they were doing. The coach should be someone that will guide you through the internship process. They should be able to show you what is happening in their division, train you, help you and expose you to the different processes, projects and show you around."

**Respondent 5**

"Mentors were supportive to some extent. They are busy people so you have to bear with them. They tried their best to assist you. I was given work all the time. The role of coach is to transfer skills, to show you what they have learnt and to develop you."

**Respondent 6**

"Role of the mentor was to check if I'm doing the work that I was to do regularly and also to assist me with difficulties that I might encounter when doing that. In general also to guide you in terms of your career as well. They were very supportive. In LSS didn't really have a supportive coach, but in NSS I had a supportive coach."

**Respondent 7**

"Mentor was friendly. We shared the same vision. He was also previously an intern. He understood how to take me from here to there. Even on assessment he indicated where I needed to improve. He gave lots of support. He understands the frustrations that interns

go through. He was quite helpful.”

**Respondent 8**

“A mentor needs to monitor the work of the intern. After assigning work to the intern, the mentor should check over the work of an intern and it should be monitored. Mentors should manage more than what they are currently doing. They should provide more guidance and especially more structure, instead of bits and pieces.”

**Respondent 9**

“My mentor was willing to work with us. He was helping us. He gave us more work. He was an intern. Mentors should be work shopped and they should choose to be coaches.”

**Respondent 10**

“A mentor is there to guide you through exercises. He did that. They did well in giving guidance.”

**Re-contextualizing with literature**

Mentors should encourage and support students as well as provide them with opportunities for self-development (Cord & Clements, 2010). Regular and constructive feedback and assignments (meaningful work) which will increase learning opportunities should be provided by the mentor (Taylor, 1988).

**THEME 6: RETENTION OF INTERNS**

Since Statistics South Africa is experiencing a shortage of statistical skills, they should try to retain the interns in whom they’ve invested such a lot of time, money and effort. According to Nthangeni (2011), the organization identifies and recruits suitable university graduates and trains them intensively for a period of twelve months. The interns are then assessed regularly on a number of tasks with a view to ascertain their level of skill and suitability for permanent employment within Statistics South Africa. Although they would like to retain only the best interns, it would appear that all interns are absorbed/ retained, regardless of whether their skills have been sufficiently developed to be utilized by the organization.

### **Sub-theme 1: Absorption process**

Absorption is the process whereby the interns are allowed to stay on in the organization upon completion of their internship year, but not necessarily employed permanently by the organization. The goal is then to find suitable permanent positions to recruit these interns. All the interns (100%) indicated that they didn't think that the organization had a clear and structured plan or strategy in place for the absorption process. This also created a lot of uncertainty and fear amongst the interns. Since interns are not absorbed into specific available positions, some of them are placed incorrectly and end up doing menial tasks just to occupy them.

The empirical evidence below confirms the researcher's conclusion that the organization needs of a proper plan or strategy regarding the absorption process in order to retain the interns. The following statements are an indication of the respondents' responses:

<b>Respondent 1</b> "I think the absorption process is ridiculous. I don't think they have a proper retention/absorption process/plan."
<b>Respondent 2</b> "No proper strategy in place for the absorption process."
<b>Respondent 3</b> "They don't have a plan in place. I'm saying that because in my group we were lucky, because we were told that we are all going to be absorbed. But from there they kept on saying that ok they'll see if they're going to absorb or not."
<b>Respondent 4</b> "It should be improved on since they say that interns won't be absorbed in the beginning of the internship year. I don't know if it's still said now. They said in the beginning of my internship year that no one will be absorbed, so it created fear amongst the interns. Why am I being trained in this specific area if I'm not going to be absorbed? So interns feel that they gained these skills only to use it outside, and they're not even sure if they could use it outside."
<b>Respondent 5</b> "Because of the economic situation it is important that people should be absorbed. They should be assessed to see whether they were performing or not performing. Whether they can be absorbed or not. But if you are using automatic approach, then it becomes

dangerous. You cannot absorb people who didn't want to work! There should be criteria of absorption not just automatic."

**Respondent 6**

"I wasn't sure. Because contract was supposed to end. Only 12 months. It was up to the division whether to absorb you or not. But luckily enough I was one of the first interns to be absorbed in 2009. Once they absorb you, you work as an intern, but everything is different when you're an employee. You are not given work sometimes weeks/months not doing anything. Even the support is not as strong as an intern."

**Respondent 7**

"Absorption: Hell of a thing. Some were absorbed, others absorbed into something they didn't like."

**Respondent 8**

"Absorption is the major weakness of the programme. There is no clear strategy. Specific positions should be allocated for absorption. There should be competition. Not all interns should be absorbed. Only those who deserve to be absorbed. The organisation is not successful in retaining the right interns. The way they are treated is not fair. The working environment is not good. Interns are bored and do not have a lot to do. Managers should assign more work to latch onto interns."

**Respondent 9**

"The process is not structured. It's a one year internship. They did not know whether they were going to absorb us or not in December. Interns should know in the beginning of the year."

**Respondent 10**

"I was lucky I got a job before finishing my internship. The absorption is not clearly communicated. There is a lot of uncertainty."

**Re-contextualizing with literature**

An internship programme which is properly conducted should enable the intern to get into production of business more quickly (Graebner, 1959). This becomes a challenge if there is no plan in place to get the interns into production as soon as possible. According to Meyer, Trost and Vukovinsky (1998:204), a statistical internship is supposed to lead to increased opportunities for statistics graduate students to become more employable.

## **Sub-theme 2: Developmental path**

Retaining quality statisticians should be a priority for Statistics South Africa, especially since the organization is experiencing a shortage of statistical skills. One way of doing this is to have a proper developmental path in place in order for interns to envision a future for themselves in the organization. Six (60%) out of the ten interns indicated that they were not aware that there was a developmental path for them in the organization. Four (40%) of the interns thought that there was a path for them in the organization, even though this was not formally communicated to them.

The empirical evidence below confirms the researcher's conclusion that in order to make the interns feel valued and to retain them, the organization needs to pay attention to having career discussions with interns which could be linked to talent management in order to retain the highly skilled interns. The following statements are an indication of the respondents' responses:

### **Respondent 1**

"No, because after the internship, they do not have a clear view about in which department you gonna be located in because usually in the end of the year they start running around, trying to find out where there is vacant positions within the organisation to place interns in and then you get absorbed on a level 6 which is ridiculous. There is nothing beyond absorption."

### **Respondent 2**

"Yah there is a clear developmental path. Just as an example, it's very difficult for people that are studying other things like IT, because as an intern I know it's very difficult for them to develop in the organisation because of the skill they have. For me being a statistician, I can get opportunities much more than they could because they are not statisticians."

### **Respondent 3**

"It depends on where you have been placed when you get a permanent position that is after you have been absorbed. That one it depends on where you are and on the people who are above you. 'Cause I believe that even though it shouldn't be like that, favouritism is still there. So you know it depends on who you are and where you are, because in some places you may find that you are stuck in one place."

### **Respondent 4**

"I think initially there was a path. It was actually clear that there was an opening for me to

move and progress. Not just one path but two. So I didn't go with the initial path but with the other path which was brilliant because as I say there was more than one path to go. There was a development plan for me and there was more than one. Got position immediately after the internship."

**Respondent 5**

"Not necessarily that, but what the internship did, was just to prepare me obviously. They are partly successful in retaining interns. Situation where people are being absorbed, but you just being dumped, and you have to find your own way. They should monitor how interns are progressing after absorption to see how people are being utilized. They shouldn't just be placed and left to their own devices."

**Respondent 6**

"Yes path in place. As I started as an intern 2 years back, it didn't take me long as compared to other staff to move to the next level. So I'm still growing and will move in stats as long as I'm still here."

**Respondent 7**

"If it's there it's not clearly defined because you're placed in a division that you don't know anything. You expected to produce and to know the know-hows and everything. It's random placement. Not much thought into that. Recruitment process should be linked to what they teach interns. Not fair for interns to go through interview. I proved myself for a year, now I need to go through another process of proving myself. Interns are just brought here because it's government. Now that I'm there I need to manoeuvre my way up. This is frustrating."

**Respondent 8**

"As an intern you feel let down. There is no clear path for you. No promotional prospects. "

**Respondent 9**

"Yes in the division I've developed. I'm on a higher level. A developmental path was not communicated to me."

**Respondent 10**

"Yes. With training and tasks. I had a discussion with my manager about my development."

## **Re-contextualizing with literature**

Employee commitment to the organization, increased productivity and decreased absenteeism and turnover have been linked to practices such as career development in many organizations (Grawitch et al., 2006).

### **Sub-theme 3: Salary**

The way in which employers structure the compensation of their employees is critical to attract, engage, and retain key employees. Employees need to be rewarded and recognized through an appropriate, market-driven, compensation structure (<http://humanresources.about.com/od/compensation-structure/compensation-structure.htm>).

The level of job satisfaction that interns experience is a major contributing factor of whether they would remain with an organization or not. Job satisfaction could influence productivity, turnover as well as organizational effectiveness. Income in itself can also influence job satisfaction (Ball & Razmi, 2002:171).

All the interns (100%) indicated that the salary level at which interns were being absorbed was the major reason why many interns left the organization. They experienced the absorption process as a demotion since there was a drop in the level of income which they received as interns.

The empirical evidence below confirms the researcher's conclusion that the organization needs to reconsider the level at which interns are being absorbed as a matter of urgency if they have any hopes of retaining the interns. The following statements are an indication of the respondents' responses:

#### **Respondent 1**

"Because in the organisation a level 6 hey, the qualifications that you have as you enter the programme, you are supposed to get paid higher than a level 6, but then they absorb you on a level 6. Yah, it's ridiculous. They not successful in keeping interns here. Don't have plan in place on how to keep them, how to utilize them and how to make them grow. Because they actually wasting their money on interns, because after the internship... they

use a lot of money from their budget to send the interns on training and to develop them, but in the end they can't keep them, they can't retain them. Because the level 6 that's staring them in the face with their qualifications, they don't see themselves growing here, and even living on that level 6."

**Respondent 2**

"A lot of these interns study to make a decent living. Interns are normally absorbed on level 6. Apparently it was not the case before, but in my internship year it was the case. People don't want to stay for that because a lot of interns are coming from other provinces. So having to make a living on this side, it's very difficult for them to make a living on level 6. And I think that's mostly the reason why they leave, and not because of any other reason. I've already heard a lot of them saying that statistics is what they did at school. And that's why they would even get a counter offer and come back but even that is not the case anymore. Org should look at increasing the level at which they absorb interns. As an intern, a master's student would get stipend of X amount. And if you're an honours student you get a different amount. So, if you get absorbed as a master's student you are getting absorbed on a lower level than what they actually were at as an intern which makes it difficult for them to actually stay. Why would you want to be demoted instead of promoted?"

**Respondent 3**

"And that's another thing, but I think the organisation is trying their best to keep the interns even though they leave, mainly because of the salaries. Because you know, people wouldn't want to sit on the same level for 5 years, 3 years, especially looking at the fact that depending on your qualification when you enter the internship, you might earn higher, but through absorption, you might even go less. Because you were absorbed on a lower level than you were as an intern. Depending on qualifications that interns are having, they can be appointed as interns and earn higher, but when they are absorbed they earn less. Used to salary level X and then as employee is less. How can person try to adjust a life?"

**Respondent 4**

"...but the reason why interns leave, they don't feel valued. I've progressed, but I'm still treated as just an intern. I'm still earning the same as I earned as an intern. So they leave because they get offers where someone will say you're a professional now. Just to think someone values me, I'm not just an intern."

**Respondent 5**



"When you are absorbed you get absorbed on lower level. But you have acquired some skills, but private sector they have better offers. So after absorption interns shouldn't spend more than a year on the same level. If they stay at that level for too long, they most probably will leave."

**Respondent 7**

"More can be done. As we are young we are money driven. Being absorbed a level lower is not fair. The level should be for qualified statisticians. The absorption process should be addressed. We feel redundant and used. Some interns still on L6 and that's not fair."

**Respondent 8**

"The organisation is not successful in retaining the right interns. The way they are treated is not fair."

**Respondent 9**

"The salary should be relooked."

**Respondent 10**

"The salary should be reconsidered. It is still the same."

**Re-contextualizing with literature**

Although money does not serve as a motivator for all employees, it can actually be used to motivate a large percentage of the workforce. "Studies show almost everyone is motivated by money to some degree, many to a moderate degree, and most to a great degree when compensation is properly designed" ([www.personnelsystems.com/motivate.htm](http://www.personnelsystems.com/motivate.htm)).

**4.5 QUANTITATIVE DATA – STATISTICAL REPORT OF THE MAIN STUDY**

**4.5.1 Reliability of the instrument**

Reliability refers to the extent to which a scale produces consistent results if the measurements are repeated a number of times. Reliability analysis is determined by obtaining the proportion of systematic variation in a scale, which can be done by determining the association between the scores obtained from different administrations of the scale. Thus, if the association in reliability analysis is high, the scale yields consistent results and is, therefore, reliable. A measurement is reliable if it reflects mostly true scores relative to the error.

One of the most popular reliability statistics in use today is Cronbach's alpha. Cronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability.

In this case Cronbach's alpha was used to measure the reliability of the instrument. **Cronbach's  $\alpha$  (alpha)** is a coefficient of reliability. It is commonly used as a measure of the internal consistency or reliability of a psychometric test score for a sample of examinees. In our case table 1 shows that the Cronbach's reliability test gave a value of 0,933.

**Table 1: Reliability Statistics**

Cronbach's Alpha	N of items
0,933	32

A test with a Cronbach alpha of 0,933 indicates that the test will be 93,3% reliable in practice, so that the higher the Cronbach alpha, the more reliable the test results will be. In this case our test has a reliability rate of 93,3%.

#### 4.5.2 Demographic detail

A total of 28 respondents participated in the survey out of an intended target of 28 giving a response rate of 100,0%. This is a very high response since when one uses self-administered questionnaires the response rate might be even less than 50%. This was achieved since the researcher constantly made follow ups.

53,6% (15) of the participants were male, while 46,4% (13) were female. The ratio of males to females is almost one to one. One can conclude that there seems to be gender balance at the organisation.

All 28 respondents indicated their age as shown in the table 2 below.

**Table 2: Age (N = 28)**

Age	Frequency	%
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20–24 years	15	53,6%
25–34 years	7	25,0%
35 years and above	6	21,4%

The majority of the respondents were between 20 and 34 years old. The largest percentages of respondents (53,6%) were in the range 20–24 years as indicated in table 2.

Looking at table 2, one can conclude that most of the respondents that are undergoing internship are very young. In terms of occupational level, the majority of the respondents, that is, 71,4% (20) were in level 6 while 28,6% (8) were in levels 7–14.

In terms of population group a total of 28 responses were valid. About 60,7% (17) of the respondents to the survey were Africans followed by 21,4% (6) whites. The other categories (Indian, Asians and Coloureds) only comprised 17,9% (5) of the respondents.

The majority of the respondents, 71,4% (20) had undergone the internship in 2011 while the rest did their internship earlier.

A clear majority, 82,1% (23) had done statistics as a major subject while 17,9% (5) did not have statistics as a major. The respondents were asked to indicate the reasons why they joined Statistics South Africa. The information is shown in table 3.

**Table 3: Reason why the respondents joined Statistics South Africa (N = 28)**

Reason	Frequency	%
I wanted to put into practice what I've learnt during my studies	23	82,1%
Because of the remuneration	1	3,6%
I could not find alternative employment	1	3,6%
Previous interns encouraged to apply	1	3,6%
The potential to learn more from a large organization	1	3,6%
Bursary	1	3,6%

Most of the respondent joined the organisation to practice what they have learnt.

Table 4 below indicates the section/division where the respondents completed their internship.

**Table 4: Section internship completed (N = 28)**

<b>Section</b>	<b>Frequency</b>	<b>%</b>
Other	8	30,8%
National Statistics System (NSS)	4	15,4%
Social Statistics	4	15,4%
Methodology and evaluation	4	15,4%
Stakeholder relations and marketing	2	7,7%
Methodology and standards	1	3,8%
Financial statistics	1	3,8%
Prices	1	3,8%
QES	1	3,8%

Twenty three of the respondents (78,3%) did their internship at the head office while 21,7% (5) did the internships at the provincial office.

The respondents were asked to indicate their level of agreement in issues concerning the Statistics South Africa internship programme. The following levels were used:

- Strongly agree (SA)
- Agree (A)
- Undecided (U)
- Disagree (D) and
- Strongly disagree (SD)

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The areas covered were:

- Retention/absorption (items 7, 8, 9, 26, 27, 28, 29 and 30)
- Placement in relevant areas (items 10 and 11)
- Training and development of statistical skills (items 12, 13, 14, 18, 19, 20 and 38)
- Assigning meaningful work (items 15, 16 and 17)
- Coaches/mentors (items 21, 22, 23, 24, 25 and 27)
- Learning plans (items 31 and 33)
- Assessment (items 32, 34, 35 and 36)

#### **4.5.3 Retention/absorption**

The statements were ranked from 1 to 8 with 1 being the highest level of agreement as shown in table 5.

**Table 5: Opinion on retention / absorption (N=28)**

Statement	Level of agreement					Rank
	SA	A	U	D	SD	
A9: There is a clear developmental path for me in the organisation.	21,4% (6)	28,6% (8)	17,9% (5)	25,0% (7)	7,1% (2)	1
A7: The internship programme met my expectations for joining Statistics South Africa.	14,3% (4)	35,7% (10)	17,9% (5)	21,4% (6)	10,73% (3)	2
A8: I would like to remain with the organisation.	25,0% (7)	21,4% (6)	28,6% (8)	17,9% (5)	7,1% (2)	3
A27: Interns are given preference during the recruitment process.	3,6% (1)	14,3% (4)	35,7% (10)	25,0% (7)	21,4% (6)	4
A29: There is a clear plan for interns at the end of the internship year to be absorbed in the organisation.	7,1% (2)	10,7% (3)	17,9% (5)	32,1% (9)	32,1% (9)	5
A26: The organization is actively filling vacancies with interns who participated in the programme.	3,6% (1)	10,7% (3)	35,7% (10)	35,7% (10)	14,3% (4)	6
A28: Interns are offered positions which are commensurate with their qualifications and experience.	3,6% (1)	7,1% (2)	28,6% (8)	53,6% (15)	7,1% (2)	7
A30: The level at which interns are being absorbed is appropriate.	-	14,3% (4)	21,4% (6)	39,3% (11)	25,0% (7)	8

In all the statements the respondents agreed on two aspects with 50,0% each respectively.

These are:

- *There is a clear developmental path for me in the organisation*
- *The internship programme met my expectations for joining Statistics South Africa*

One can conclude that the respondents felt that there was a clear development plan and that the internship programme met with their expectations. However, in other aspects the respondents seemed to mostly disagree.

#### 4.5.4 Placement in relevant areas

The highest ranking statement was “*My qualifications were relevant for the area in which I was placed*” with an agreement level of 60,7% as shown in table 6.

**Table 6: Opinion on placement in relevant areas**

Statement	Level of agreement					Rank
	SA	A	U	D	SD	
A10: My qualifications were relevant for the area in which I was placed.	32,1% (9)	28,6% (8)	-	25,0% (7)	14,3% (4)	1
A11: My statistical skills were fully utilized in the area in which I was placed.	7,1% (2)	28,6% (8)	10,7% (3)	32,1% (9)	21,4% (6)	2

The respondents seemed to disagree that they were fully utilising their statistical skills in the areas that they were placed. Thus, one can conclude that the respondents are fully qualified but are not utilising their skills.

#### 4.5.5 Training and development of statistical skills

The respondents were asked to agree/disagree on certain statements on the training and development of statistical skills. The levels of agreement are provided in table 7.

**Table 7: Opinion on training and development of skills**

Statement	Level of agreement					Rank
	SA	A	U	D	SD	
A12: The training that I was exposed to during my internship was relevant for developing my statistical skills.	28,6% (8)	64,3% (18)	-	7,1% (2)	-	1
A13: The training that I was	25,0%	50,0%	10,7%	14,3%	-	2

exposed to will make me more employable in any statistical area.	(7)	(14)	(3)	(4)		
A20: The short courses were targeted and structured to develop a specific set of skills.	17,9% (5)	57,1% (16)	10,7% (3)	14,3% (4)	-	3
A14: The training that we were exposed to as interns was targeted, structured and designed to specifically develop our statistical skills.	17,9% (5)	53,6% (15)	7,1% (2)	17,9% (5)	3,6% (1)	4
A19: The short courses (e.g. Customer care, Emotional intelligence, Time and stress management) that I was exposed to adequately prepared me to function as an employee in the organization.	14,3% (4)	53,6% (15)	7,1% (2)	21,4% (6)	3,6% (1)	5
A38: I was given ample developmental opportunities through formal courses.	14,3% (4)	42,9% (12)	17,9% (5)	14,3% (4)	10,7% (3)	6
A18: I was exposed to the whole statistical value chain.	3,6% (1)	21,4% (6)	3,6% (1)	42,9% (12)	28,6% (8)	7

In terms of training and development of statistical skills, the aspect “*I was exposed to the whole statistical value chain*” was the only one with an agreement level of 25%, which is below 50%. In all the statements the respondents agreed and the following aspects had agreement levels of over 70%.

These are:

- *The training that I was exposed to during my internship was relevant for developing my statistical skills (92,9%)*
- *The training that I was exposed to will make me more employable in any statistical area (75,0%)*
- *The short courses were targeted and structured to develop a specific set of skills (75,0%)*

- *The training that we were exposed to as interns was targeted, structured and designed to specifically develop our statistical skills (71,4%)*

#### 4.5.6 Assigning meaningful work

In terms of an opinion on assigning meaningful work, only the aspect *“The tasks that were assigned to me gave me an opportunity to fully utilize my statistical skills that I’ve acquired during my studies”* had an agreement level below 50% (39,3%) as indicated in table 8.

**Table 8: Opinion on assigning meaningful work**

Statement	Level of agreement					Rank
	SA	A	U	D	SD	
A15: The tasks that were assigned to me as an intern were on a professional level.	28,6% (8)	39,3% (11)	10,7% (3)	17,9% (5)	3,6% (1)	1
A16: The tasks that were assigned to me as an intern made me feel valued as an employee.	21,4% (6)	39,3% (11)	7,1% (2)	21,4% (6)	10,7% (3)	2
A17: The tasks that were assigned to me gave me an opportunity to fully utilize my statistical skills that I’ve acquired during my studies.	10,7% (3)	28,6% (8)	14,3% (4)	32,1% (9)	14,3% (4)	

The respondents seemed to agree that the tasks assigned were on a professional level and made them valued as employees. There seemed to be a trend in terms of utilisation of the knowledge that the employees had acquired. It seems as if the employees seem to be given tasks that do not fully utilise their skills.

#### 4.5.7 Coaches/mentors

The respondents were asked their level of agreement on statements relating to coaches or mentors. The information is provided in table 9 on the next page.



**Table 9: Opinion on coaches/mentors**

Statement	Level of agreement					Rank
	SA	A	U	D	SD	
A23: My coach was an expert in his/her area of speciality.	46,4% (13)	32,1% (9)	7,1% (2)	14,3% (4)	-	1
A25: My coach encouraged and motivated me.	28,6% (8)	50,0% (14)	7,1% (2)	14,3% (4)	-	2
A22: My coach was supportive.	28,6% (8)	39,3% (11)	14,3% (4)	14,3% (4)	3,6% (1)	3
A21: My coach assisted me to perform my duties adequately.	32,1% (9)	32,1% (9)	17,9% (5)	17,9% (5)	-	4
A24: My coach provided me with regular and constant feedback on my performance.	21,4% (6)	42,9% (12)	25,0% (7)	10,7% (3)	-	5
A37: Steps were taken by my coach to improve my performance in areas where my skills were lacking.	14,3% (4)	35,7% (10)	14,3% (4)	28,6% (8)	7,1% (2)	6

In all the statements the respondents agreed with two of the aspects having an agreement level of almost 80% each. These are:

- *My coach was an expert in his/her area of speciality*
- *My coach encouraged and motivated me*

One can conclude that the employees were satisfied and valued their coaches' contributions and expertise.

#### **4.5.8 Learning plans**

In terms of opinion on learning plans, the respondents agreed on all aspects as indicated in table 10.

**Table 10: Opinion on learning plans**

Statement	Level of agreement					Rank
	SA	A	U	D	SD	
A33: My learning plan was developed jointly by me and my coach.	14,3% (4)	53,6% (15)	7,1% (2)	21,4% (6)	3,6% (1)	1
A31: A proper, well-developed learning plan was in place for my development.	10,7% (3)	46,4% (13)	10,7% (3)	25,0% (7)	7,1% (2)	2

In terms of planning we can conclude that the learners assisted their coaches in designing their learning plans, which were well developed.

#### 4.5.9 Assessment

The respondents were asked to agree/disagree on certain questions on assessment. The levels of agreement are provided in table 11.

**Table 11: Opinion on assessment**

Statement	Level of agreement					Rank
	SA	A	U	D	SD	
A32: I was regularly assessed based on the objectives or outcomes as outlined in my learning plan.	10,7% (3)	60,7% (17)	7,1% (2)	17,9% (5)	3,6% (1)	1
A34: The assessments were fair and developmental.	21,4% (6)	46,4% (13)	10,7% (3)	17,9% (5)	3,6% (1)	2
A35: The evaluation criteria were clear and well formulated.	21,4% (6)	42,9% (12)	17,9% (5)	17,9% (5)	-	4
A36: Areas for development were pointed out to me during my assessments.	17,9% (5)	39,3% (11)	10,7% (3)	25,0% (7)	7,1% (2)	5

All the aspects had agreement levels of over 50%. The highest agreement level was 71,4% on the aspect "*I was regularly assessed based on the objectives or outcomes as outlined in my learning plan*".

#### **4.6 SUMMARY OF THE CHAPTER**

In this chapter, the data were analysed and interpreted. The research approach, design and procedures were briefly touched upon. The profiles of the respondents were also elaborated upon. The central themes and sub-themes which emerged as well as the respondents' responses were recorded and re-contextualized with literature. The statistical analysis of the data obtained was lastly interpreted.

From the interviews and responses to questionnaires and the document study, it was revealed that although many of the important elements to successfully further the education of young adults through an internship programme in Statistics South Africa were present, many areas could be improved upon to make the programme more effective.

Chapter 5 contains an overview of the study, draws conclusions, and makes recommendations for further research and also highlights limitations of the study.

## CHAPTER FIVE

### OVERVIEW, CONCLUSIONS, RECOMMENDATIONS FOR FURTHER RESEARCH AND LIMITATIONS OF THE STUDY

#### 5.1 OVERVIEW

The aim of this study was to analyse the effectiveness of Statistics South Africa's internship programme in developing the statistical skills of interns. The organization is experiencing a shortage of statistical skills and in order to address this shortage, they recruit interns to participate in a year-long internship programme which is designed to focus on developing interns' statistical skills. This background should provide the reader with an understanding of the contextual setting wherein this study took place.

From the literature review that was carried out a theoretical framework emerged, which focused on the goals of internships as related to elements of experiential learning. It was established that, in order to further the education of young adults, it is important that the interns are able to link theory to practical and concrete examples. Interns should, therefore, be allowed to apply learning, as well as to acquire new knowledge. The best ways to allow students to do this were then explored. The need for an empirical study using case study method to explore the issues regarding the development of statistical skills of an internship programme was identified. The researcher also employed a mixed method approach, using both qualitative and quantitative methods because she believed that a combination of both types of data will provide a better understanding of the research problem and questions than either method by itself. This allowed the researcher to obtain insight into the experiences and views of interns who participated in the internship programme since its inception. Research in the field of the development of specific skills during internship programmes within the South African context was also found to be limited.

#### 5.2 CONCLUSION

In Chapter 1 the research question was posed as follows: **How effective is the Statistics South Africa's internship programme in furthering the education of young adults through developing their statistical skills?** The conclusions discussed in this section have been drawn from the data derived in this study and as discussed in chapter 4, and

compared with documented literature on internships and the development of skills as provided in the literature review in chapter 2.

It was found that the success of internship programmes in furthering the education of young adults should possess the following elements:

- learning through training which should also include components of relevance and should make provision for application
- learning plans which should set out specific objectives to be achieved
- assessments which specify the criteria by which learner performance will be evaluated
- placements where qualifications should be considered and interns need to be assigned meaningful assignments
- mentors who are committed to the development of interns
- a retention strategy

The majority of interns indicated that the main reason why they decided to join Statistics South Africa was because they were hoping to put into practice the skills which they have obtained through their formal studies. The training received by statistical interns, for example the SADC Survey Methodology and Basic Sampling, SAS as well as the soft skills, are relevant for developing and applying their statistical skills. The challenge, however, arises when it comes to implementing these skills in the areas in which interns are placed. Many interns still feel that they are not afforded the opportunity to fully apply the skills which they gained through either their formal studies or through the internship programme in Statistics South Africa. There were instances where statisticians were only tasked to perform administrative functions. This situation needs attention because valuable skills are lost if interns do not get the opportunity to apply their skills.

Learning and assessment plans are being utilized as a method to give direction to the daily assignment of interns as well as to measure their progress. Even though learning plans are developed for interns, the learning plans are not necessarily implemented and interns feel that learning plans are merely completed for compliance. This has a direct influence on the assessments that are supposed to take place quarterly. Interns regard the assessments as crucial for giving them an indication of their progress. Many interns feel that even though they are assessed, nothing actually happens after the assessments. This is an opportunity for mentors to identify developmental opportunities for interns and to

structure their learning. Assessment plans can also be utilized to assess whether interns gained the necessary knowledge and skills to an extent where they can be retained by the organization. Assessments should be utilized to assist in retaining only the best interns and this is a more sustainable option of retention than the umbrella approach which the organization is currently using to retain interns. Interns are of the opinion that these assessments can be used as an instrument to guide the absorption process at the end of the year.

It is evident that an effort is made to match the qualifications of interns to the areas in which they are being placed. A challenge is that the majority of interns (70%) feel that they are not assigned meaningful work by their mentors. They did, however, indicate that mentors tend to be supportive, and that ex-interns should be utilized as mentors since they've been through this experience and would be more positive about being a mentor. There was a general consensus that people should not be forced to be mentors, but that they should be presented with a choice as to whether or not they would want to be mentors. Mentors should also receive proper guidance and training on what is expected from them as mentors.

Even though the majority of interns who joined the organization from 2005 are still employed in the organization, evidence suggests that interns are not necessarily staying out of loyalty to the organization. Many interns are demoralized by the fact that they are being absorbed on a very low salary level. Interns are appointed on different salary levels depending on their qualifications and generally earn more as interns than when they are absorbed and permanently employed at the end of their internship. In order for the organization to retain the interns they will have to seriously re-consider the salary levels at which interns are appointed as permanent employees. Career conversations should also take place in order for interns to see a future for them in the organization. A proper absorption strategy will need to be designed, and an umbrella approach should not be followed to absorb and permanently appoint all interns in the organization. Only interns who demonstrate potential and whose skills were developed sufficiently for the organization to benefit should be considered for permanent employment in the organization.

The qualifications of interns are considered when they are placed, but it was established that interns do not get the opportunity to rotate because not all divisions can accommodate interns. Mentors mentioned in this study were very supportive of the interns. Mentors

would, however, like to have the choice of whether they want to be mentors or not. The current situation is that they are being told by their managers to be mentors, and that they do not have a choice. Most interns indicated that those who were interns before should become mentors, since they know what the experience is all about. A need was also expressed that mentors should receive training, and that they should receive regular and constant communication of what is expected of them as mentors.

Although most of the interns who joined the organization since 2005 were still employed within the organization, the researcher established that there was no clear retention strategy in place. Interns who are still with the organization feel that they are now in areas which are not commensurate with their qualifications and that their skills are not optimally utilized. They are also now earning less than they used to earn as interns.

On the positive side, there are also interns who progressed and are already on a managerial level within the organization. Some interns also progressed from a salary level 6 to a salary level 9. Many interns are also hopeful that they might progress further in the organization.

### **5.3 RECOMMENDATIONS FOR FURTHER RESEARCH**

The recommendations for further research listed below are based on shortcomings in this study and in the available literature.

- The inputs, recommendations and experiences of the mentors should be investigated.
- The opinions of permanent employees and how they feel about interns who have more benefits than them and who seemingly progress faster than them should be explored.
- The dynamics influencing the success of the mentor-mentee relationship should be investigated.
- The reasons why certain interns progress to management level and others, who had the same training, remain stagnant, should be explored.

- The rationale behind absorbing interns on a lower salary level than that of interns needs to be explored.

#### **5.4 LIMITATIONS OF THE RESEARCH**

This study has several limitations related to the context, constructs and theoretical perspectives. The context of this study was limited to one government organization, Statistics South Africa, with various different functional departments. This organization is a leading government organisation with a geographical reach throughout South Africa in terms of the dissemination of the results of the surveys they conduct. The organization employs interns with a variety of qualifications. Although the qualifications of these interns differ, a properly administered internship programme could benefit all interns in the development of skills in their specific areas.

However, it was unpractical to use all the interns who participated in the internship programme within the organization. It was, therefore, envisaged that the study would not attempt at achieving mass representation, but rather use a selected group of participants representing the statistical areas within the organisation. The research was also limited to one single organisation. The study also only focused on interns with statistical qualifications. More interns participated in the pilot study (with specific reference to the electronic questionnaire) than in the actual study. The scope of this research was limited to the analysis of the existing internship programme in the development of statistical skills.

#### **5.5 A FINAL WORD**

In order to give effect to the notion of life-long learning it is crucial that the skills and knowledge of adults be constantly enhanced. It is, therefore, important that interns, fresh from tertiary institutions and eager to apply their knowledge, be given this opportunity by being assigned meaningful assignments where they can link the theoretical knowledge and the practical implementation thereof.

Although many challenges were pointed out in the internship programme, the programme can be very successful in retaining the best statisticians to fill the skills gap in the organization. Aspects such as assigning meaningful tasks to them, as well as considering the salary level at which interns are being absorbed should be the starting point towards



improving the current programme. Based on these findings, there is much hope for the development and retention of statistical skills within Statistics South Africa.

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## ETHICS CLEARANCE CERTIFICATE

THIS IS TO CERTIFY THAT

**NAME: *GWENDOLINE HILARY VAN DER BERG***

**STUDENT NUMBER: 35642726**

**TITLE: *FURTHERING THE EDUCATION OF YOUNG ADULTS - AN ANALYSIS OF  
STATISTICS SOUTH AFRICA'S INTERNSHIP PROGRAM***  
**QUALIFICATION: M.ED**

**HAS MET THE ETHICAL REQUIREMENTS AS SPECIFIED BY**

**THE ETHICS COMMITTEE, COLLEGE OF EDUCATION  
UNIVERSITY OF SOUTH AFRICA**

**PROF L NYAUMWE**



**CHAIRPERSON, ETHICS COMMITTEE**

**SIGNATURE**

**REGISTRATION NUMBER ...35642726/2012/001..... DATE... 1 FEB, 2012.....**

**THIS CERTIFICATE IS VALID FOR THREE YEARS FROM THE DATE OF ISSUE**



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## **Request for permission to conduct research in the organization**

The Executive Manager: Human Capacity Development – Statistics South Africa

### **SUBJECT: Permission to conduct research studies in the organization**

Dear Dr Nthangeni,

Permission is hereby sought to conduct research for my MEd (Adult Education) degree offered by the University of South Africa. The title of my dissertation is “**Furthering the education of young adults - An analysis of Statistics South Africa’s internship program**”. The key focus of the research is to investigate whether the internship program in Statistics South Africa is effective in developing the statistical skills of interns and thereby contributing to addressing the critical statistical skills shortages experienced in the organisation.

This research will try to establish what factors need to be considered and included in the training and development of statistical interns to ensure the development of statistical skills to make them more employable in statistical areas. Recommendations will then be formulated and communicated to the senior management of Statistics South Africa to hopefully assist them to make suitable adjustments to the current programme.

The following participants are needed in the research: The Executive Manager for HCD, and 10 former interns who will be selected through non-probability sampling by a purposive method.

The participants are requested to avail themselves for an interview at a date and time that will suit them and their managers’ best, so as not to impact negatively on the normal operations of the organization.

I undertake to adhere to the ethics codes pertaining to these types of research and assure the Executive Manager that all information will be treated with the strictest confidentiality. All participants will be informed of:

- the aims, objectives and methods of the research to all parties concerned.

Annexure B

- the maintenance of confidentiality and anonymity by eliminating any kinds of materials or information that could lead others to identify the subject or subjects involved.

It is also further requested that the Executive Manager provide the researcher with the necessary documentation pertaining to the internship, as well as any other relevant information that may enhance the study.

A full proposal is available upon request from the researcher.

Kind regards,

Gwendoline Van der Berg

.....

Mrs G. van der Berg (Student Nr 35642726)

.....

Date

Permission granted Yes  No

.....

Executive Manager: Human Capacity Development

.....

Date

Annexure C

College of Education

Informed consent for participation in an academic  
research study

**Title of the study: "Furthering the education of young adults - An analysis of Statistics South Africa's internship program"**

Research conducted by:  
*Mrs G. Van der Berg(35642726)*

*Cell: 082 808 9482*

Dear Respondent

You are invited to participate in an academic research study conducted by Ms Gwendoline Hilary van der Berg, Masters student from the *College of Education* at the University of South Africa.

The purpose of the study is "to investigate whether the internship program in Statistics South Africa is effective in developing the statistical skills of interns and thereby contributing to addressing the critical statistical skills shortages experienced in the organisation."

Please note the following:

- This study involves a survey as well as focus groups. You are not requested to provide your name on the questionnaire. If you wish to do so it will be strictly voluntary and the answers you give will be treated as strictly confidential. You cannot be identified in person based on the answers you give.
- Your participation in this study is very important to us. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.
- There are no anticipated risks involved for you to participate in this study.
- Please answer the questions in the attached questionnaire as completely and honestly as possible. This should not take more than 15 minutes of your time.
- The results of the study will be used for academic purposes only. We will provide you with a summary of our findings on request.
- Please contact my study leader, *Dr Raselekoane*, (012) 429 8228 if you have any questions or comments regarding the study.

Please sign the form to indicate that:

- You have read and understand the information provided above.
- You give your consent to participate in the study on a voluntary basis.

I agree  do not agree  to participate in this study

---

**Respondent's signature**

---

**Date**

## Furthering the education of young adults - An analysis of Statistics South Africa's internship program

Dear participant. I am conducting a study to investigate whether the internship program in Statistics South Africa is effective in developing the statistical skills of interns and thereby contributing to addressing the critical statistical skills shortages experienced in the organisation."

I am kindly requesting you to complete the questionnaire by following the link provided below. You may also choose to copy and paste this link into your web browser. I really need your help and would highly appreciate it if you would agree to form part of this research.

This should not take more than 7 minutes of your time. Your response is confidential and highly appreciated.

### **Demographic information**

Gwen.

Please complete the following section by checking the appropriate box

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# Furthering the education of young adults - An analysis of Statistics South Africa's internship program

\* Required

## **GENDER \***

Please select only one option

Male

Female

## **AGE \***

Please choose only one

19 and under

20-24

25-34

35-44

45-54

## **LEVEL OF EDUCATION \***

Please select only your highest qualification

National Diploma

Degree

B'Tech

Honours

Masters

Doctorate

## **Occupational Level \***

Please indicate your post level. Select only one option

6

7

8

9

10

11

12

13

14

**Population Group \***

Please select only one option

African

White

Coloured

Indian

Asian

**In which year were you an intern in Statistics South Africa? \***

Select only one option

2005

2006

2007

2008

2009

2010

2011

**I had statistics as one of my major subjects \***

Select only one option

Yes

No

**Please indicate the reason why you decided to join Statistics South Africa \***

Select only one option

Because of the remuneration

I could not find alternative employment

Previous Interns encouraged me to apply

I wanted to put into practice what I've learnt during my studies

Other: \_\_\_\_\_



# Furthering the education of young adults - An analysis of Statistics South Africa's internship program

\* Required

Please indicate the extent to which you agree or disagree with each of the following statements

**The internship programme met my expectations for joining Statistics South Africa \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**I would like to remain with the organisation \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**There is a clear developmental path for me in the organisation \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**My qualifications were relevant for the area in which I was placed \***

Select only one option

- Strongly agree
- Agree

- Undecided
- Disagree
- Strongly disagree

**My statistical skills were fully utilized in the area in which I was placed \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The training that I was exposed to during my internship was relevant for developing my statistical skills \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**What type of skills have you obtained during your internship year \***

Please select all the skills which are applicable

- Basic Sampling
- SAS
- STATA
- Research Methodology
- Survey Methodology
- Field Collection
- Quality Assurance
- Management Program
- Other: \_\_\_\_\_

**What do you think are the skills required to successfully continue a career in Statistics South Africa \***

Please select all the skills which are applicable

- Basic Sampling

- SAS
- STATA
- Research Methodology
- Survey Methodology
- Field Collection
- Quality Assurance
- Management Program
- Other: \_\_\_\_\_

**The training that I was exposed to will make me more employable in any statistical area \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The training that we were exposed to as interns were targeted, structured and designed to specifically develop our statistical skills \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The tasks that were assigned to me as an intern were on a professional level \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The tasks that were assigned to me as an intern made me feel valued as an employee \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The tasks that were assigned to me gave me an opportunity to fully utilize my statistical skills that I've acquired during my studies \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**I was exposed to the whole statistical value chain \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The short courses (e.g. Customer Care, Emotional Intelligence, Time and Stress Management) that I was exposed to adequately prepared me to function as an employee in the organisation \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The short courses were targeted and structured to develop a specific set of skills \***

Select only one option

- Strongly agree
- Agree
- Undecided

- Disagree
- Strongly disagree

**My Coach assisted me to perform my duties adequately \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**My Coach was supportive \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**My Coach was an expert in his/her area of speciality \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**My Coach provided me with regular and constant feedback on my performance \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**My Coach encouraged and motivated me \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The organization is actively filling vacancies with interns who participated in the program \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**Interns are given preference during the recruitment process \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**Interns are offered positions which are commensurate with their qualifications and experience \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**There is a clear plan for interns at the end of the internship year to be absorbed in the organisation \***

Select only one option

- Strongly agree
- Agree
- Undecided

- Disagree
- Strongly disagree

**The level at which interns are being absorbed is appropriate \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**I was absorbed into an area which is relevant for my qualifications \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**A proper, well-developed learning plan was in place for my development \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**I was regularly assessed based on the objectives or outcomes as outlined in my learning plan \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**My learning plan was developed jointly by me and my coach \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The assessments were fair and developmental \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**The evaluation criteria were clear and well-formulated \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**Areas for development were pointed out to me during my assessments \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

**Steps were taken by my coach to improve my performance in areas where my skills were lacking \***

Select only one option

- Strongly agree
- Agree
- Undecided
- Disagree



Strongly disagree

**I was given ample developmental opportunities through formal courses \***

Select only one option

Strongly agree

Agree

Undecided

Disagree

Strongly disagree

**Please indicate the section/division in which you completed your internship \***

Please choose only one section where you spent the majority of your time during your internship

National statistics system

**Where were you an intern? \***

Please select only one option. Where you spent the majority of your time during your internship

Head office

Provincial office

**Thank you for your time!!**

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## Annexure E

### Guided questions for interviews

Name of interviewee.....

Date of interview.....

- 1) Why do you think that the training that you were exposed to was/was not relevant for developing your statistical skills?
- 2) Would you say that the training that you received adequately prepared you to be placed in any statistical area? Why/ Why not?
- 3) What is your opinion on the type of training that interns should be exposed to?
- 4) Do you think that there is a clear developmental path for you in the organization? Why/Why Not?
- 5) Please elaborate on how your statistical skills were utilized in the area in which you were placed?
- 6) Tell me about the type of skills which you obtained during your internship year and the relevancy of those skills to successfully continue a career in Statistics South Africa.
- 7) What suggestions/recommendations do you have on the matching of qualifications to the areas in which interns are being placed?
- 8) Why would you say that performing the tasks assigned to you as an intern gave you/ denied you the opportunity to fully utilize your statistical skills which you've acquired during your studies?
- 9) What recommendations would you make to ensure that meaningful work is assigned to interns?
- 10)What would you suggest/recommend regarding the utilization of learning- and assessment plans?
- 11)Please tell me about the role of your Mentor/ Coach during your internship.
- 12)What recommendations/ suggestions do you have on the role of Mentors/ Coaches?
- 13)What are your thoughts on the retention/ absorption process of interns?
- 14)Why do you think the organization is successful/not successful in retaining interns in the organization?
- 15)What suggestions/recommendations do you have regarding the retention/absorption of interns in the organization?

Annexure F

An example of a summary sheet used during the semi-structured interviews (original format was in A3)

Name of interviewee \_\_\_\_\_

Date of interview \_\_\_\_\_

Date when summarized \_\_\_\_\_

	Questions	Summary of key points raised
1.	Relevance of training to develop statistical skills	
2.	Adequacy of training for placement in any statistical area	
3.	Type of training for interns	
4.	Developmental path	
5.	Utilization of statistical skills	
6.	Skills obtained during internship	
7.	Matching of qualifications to areas of placement	
8.	Skills and tasks assigned	
9.	Meaningful work	
10.	Utilization of learning and assessment plans	
11.	Role of mentors	
12.	Suggestions on the role of mentors	
13.	Retention/absorption	
14.	Success of the organisation to retain interns	
15.	Suggestions for retention of interns	