

# **An Investigation into the Antecedents of Intention and Learnership Performance in the Agricultural Sector of South Africa**

by  
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Thesis presented in partial fulfilment of the requirements for the  
degree of Master of Commerce (Industrial Psychology) at  
Stellenbosch University



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December 2013

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## **ABSTRACT**

Learnership programs are implemented in different industries as development interventions to contribute to the skills development and, after successful completion, ultimately contribute toward the alleviation of poverty. Insight into the factors that influence learnership performance will provide direction in terms of optimising learnership performance.

The purpose of the research study was to create an understanding of the factors that influence learnership performance, with a focus on intention as a key variable. The literature review culminated in the development of the partial model of learnership performance (PMLP). Due to the complexity of the model and the sample size of 95 learners, the decision was made to split the model and to test it as two separate models. The first focused on antecedents of learnership performance including age, gender, previous work experience, previous learning experience, intention and environmental constraints. The second included the variables underlying intention namely behavioural beliefs, normative beliefs, control beliefs, attitudes, subjective norms and perceived behavioural control.

A questionnaire was developed for the specific purpose of the study. A mixed method methodology (including both qualitative and quantitative data gathering methods) were employed that included individual interviews, a pilot study of the questionnaire and the administration of the final questionnaire. Data was subjected to various statistical analysis including descriptive statistics and correlation analysis. Mediating relationships were calculated by means of the Sobel test.

Previous learning experience as well as intention correlated positively with learnership performance. Although the sample included more male participants, women achieved higher levels of learnership performance. Significant relationships were found between intention and the hypothesised direct variables including attitudes, subjective norms and perceived behavioural control. Behavioural beliefs and normative beliefs showed

significant indirect relationship to intention. It was expected that environmental constraints would have a negative moderating impact on the relationship between intention and learnership performance; however the research results did not corroborate this hypothesis. The relationship between intention and learnership performance was strong in cases where learners experience challenging environmental factors, whereas no significant relationship between intention and learnership performance was found in the absence of environmental constraints.

Recommendations were made regarding an intervention to enhance learners' intentions. Two approaches were recommended to optimise learnership performance, namely journaling activities and interactive workshops. These approaches aim to guide learners through the identification of obstacles that could inhibit their success in the learnership program. By consciously choosing to overcome these obstacles, learners develop an internal sense of empowerment which will enable them to take a step towards breaking the cycle of poverty.

## OPSOMMING

Leerlingskap programme word in verskillende industrieë geïmplementeer en vorm deel van ontwikkelingsintervensies wat bydra tot vaardigheidsontwikkeling, en met die voltooiing van leerlingskappe, ten einde armoede te bestry. Insig aangaande die faktore wat leerlingskapprestasie beïnvloed sal daarom as 'n basis dien vir die optimalisering van leerlingskapprestasie.

Die doel van die navorsingstudie was om insig te bekom rakende die faktore onderliggend aan leerlingskapprestasie, met 'n fokus op intensie as 'n kritieke veranderlike in hierdie opsig. Die literatuur oorsig het gelei tot die ontwikkeling van die gedeeltelike model van leerlingskapprestasie-voorspelling. As gevolg van die steekproef van 95 leerders is die besluit geneem om die model van leerlingskapprestasie-voorspelling in twee modelle te verdeel. Die een model het faktore onderliggend aan leerlingskapprestasie ingesluit terwyl die ander model faktore ingesluit het wat betrekking het tot die intensie om in 'n leerlingskap te presteer.

'n Vraelys was ontwikkel vir die spesifieke doeleindes van die studie. 'n Kombinasie van byde kwalitatiewe en kwantitatiewe data insamelingstegnieke is toegepas wat individuele onderhoude, 'n loodsstudie - en 'n finale studie van die vraelys ingesluit het. Verskeie data analise metodes is toegepas naamlik betroubaarheids analise, beskrywende statistiese analise en korrelasie analise. Bemiddelende verhoudings is met behulp van die Sobel toets verwerk.

Vorige leerervaring sowel as intensie het positiewe korrelasies getoon in terme van leerlingskapprestasie. Alhoewel die steekproef meer mans as vroue ingesluit het, het vroue beter leerlingskapprestasie as mans getoon. Beduidende verhoudings is opgemerk tussen intensie in die drie veronderstelde direkte veranderlikes naamlik houdings, subjektiewe norme en waarneembare gedragsbeheer. Gedragsoortuigings sowel as normatiewe oortuigings het albei beduidende indirekte verhoudings getoon in terme van intensie. Die veronderstelling was dat omgewingsbeperkings 'n negatiewe

impak sou hê op die verhouding tussen intensie en leerlingskapprestasie, maar die navorsing resultate het 'n interessante bevinding getoon. Die korrelasie tussen intensie en leerlingskapprestasie was sterk in gevalle waar leerlinge uitdagende omgewings faktore beleef, terwyl geen beduidende verhouding tussen intensie en leerlingskapprestasie waarneembaar was in die afwesigheid van omgewingsbeperkings nie.

Voorstelle is gemaak met betrekking tot 'n intervensie wat poog om leerders se intensie te verhoog. Twee benaderings naamlik joernaal oefeninge en interaktiewe werksinkels is voorgestel. Die doel van hierdie benaderings is om aan leerlinge leiding te gee met die identifisering van uitdagings wat moontlik hul sukses in die leerlingskap program kan inhibeer. Met die doelbewuste besluit om hierdie uitdagings te oorkom ontwikkel leerders interne bemagtiging wat hul in staat sal stel om die eerste tree te neem om die armoede siklus te oorkom.

## ACKNOWLEDGEMENTS

I would like to express my appreciation towards the following individuals as their support made it possible for me to complete this task.

- Jesus Christ; my rock and my redeemer.
- The Department of Industrial Psychology; for believing in the purpose of this study.
- Professor Ronel du Preez; thank you for your guidance, support and for the opportunity to learn from you.
- Professor Martin Kidd; for your patience and guidance in terms of the statistical analysis.
- Johann Engelbrecht from the AgriSETA; who opened the necessary channels to enable the data gathering process.
- BC Landscape Training & Consultancy; thank you very much for your support in the data gathering process. This study would not have been possible without your support.
- National Training Institute; for assistance in the data gathering process.
- Michéle Beyer and Madelie Kruger; my encouraging and loving friends.
- My mother Esmé Kloppers and father Neels Kloppers; thank you for your continual support, not only in my studies but in the following of all my dreams.
- My grandmother Trudie Myburgh, and late grandfather Willie Myburgh; words cannot express my appreciation of you, there is no end to your love encouragement and support.
- My husband Armand Beukes; for supporting me in my studies and for being everything a husband and best friend could be, even in challenging circumstances.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Introduction: Chapter 1**

“The roots of sustainable development lie, to a great degree, in the capacity of people to overcome their psychological, social, and contextual barriers, to view the world through a new lens, as agents (rather than passive recipients) of change” (Pick & Sirkin, 2010, p. 5). The eradication of poverty is therefore not as simple as the implementation of programs and processes related to the physical aspects of poverty such as skills development and the creation of employment (Narayan, 2006). The psychological factors related to poverty can inhibit the success of these interventions and should therefore be investigated and understood, in order for them to be overcome. The objective of this study is to investigate factors that could inhibit individuals from previously disadvantaged environments when entering into interventions aimed at empowering them to rise above their impoverished circumstances. This chapter provides background regarding the importance of education and learning as a tool for empowerment. The South African agricultural industry creates the context of the study.

#### **1.2 Poverty: The problem and probable solutions**

Various definitions explain the problem of poverty. Narayan (2006) explains poverty as the lack of capacity to exercise influence or control over one’s future or an inability to acquire a better future for one self. The United Nations Economic and Social Council (2001) describes the multidimensional aspects of poverty as a “... human condition characterised by sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights” (p. 2). Both these definitions emphasise the lack of control experienced by individuals living in poverty, whilst the latter definition also highlights the continuous nature of poverty and that it preserves its own existence. Poverty therefore goes far beyond the tangible elements such as income and resources and includes a range of psychological factors such as the power of making decisions and benefiting from social rights.

Sen (1999) also makes note of the internal factors related to poverty in that persons growing up in impoverished circumstances have weaker self-determination and self-esteem than their wealthier counterparts. Research by the United Nations Development Program also confirms that poverty causes feelings or attitudes of shame, powerlessness and even trauma for individuals trapped in its cycle (UNDP, 2002). The multidimensional definition of poverty bears resemblance to the categories in which Sen (1999) divides poverty. These categories include capability poverty, participatory poverty and consequential poverty (as cited in Preece, 2006), and are subsequently discussed respectively.

Capability poverty refers to the lack of access to partake in economic life, which refers both to the attainment of skills, and work opportunities. Sen (1999) depicts this deficiency as a series of disabling factors starting with low skills that reduces the likelihood of employment, which could allow for the attainment of improved income, and which could finance the education of the second generation from these impoverished communities. In this way, a generation living in poverty gives birth to a second generation living in poverty.

The United Nations Development Programme (UNDP, 2002) also identifies the category of participatory poverty in their definition of poverty, which refers to insufficient income, a lack of capability and restrained participation. The meaning of participation in both these occurrences depicts the status imposed on disadvantaged individuals by others. It also includes the role they view themselves to play in their future, which remains to be characterised by powerlessness. The greatest drivers of these expectations are the attitudes others may have towards them, as well as the values and attitudes they impose on themselves. These values, attitudes and expectations are intangible forces that keep the disadvantaged in at the bottom of the so-called food chain.

Consequential poverty does not refer to the nature of the effects of poverty but instead describes some of the causes of poverty that can lead to both capability or participatory poverty. The main elements of consequential poverty according to Sen (1999) are the

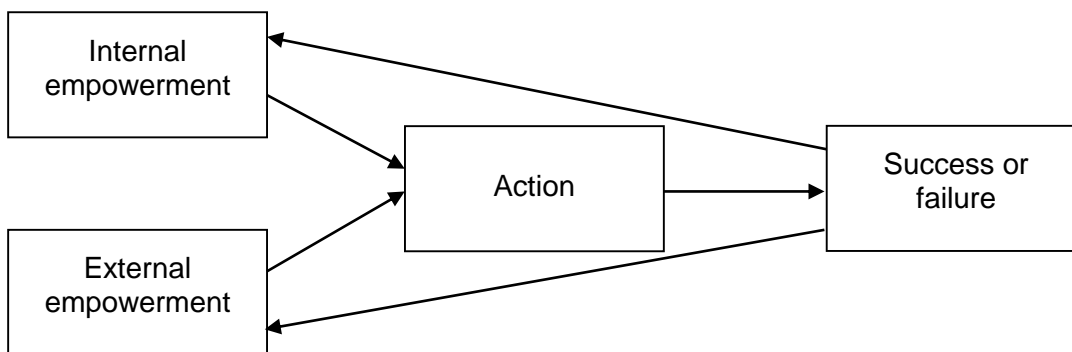
exploitation of labour, conflict and the waging of war, natural disasters and national debts. Although poverty-stricken communities are the greatest sufferers of poverty, they are in the worst position to influence the consequential factors.

The definitions and descriptors of poverty (capability poverty, participatory poverty and consequential poverty) indicate how the impoverished circumstances that these people live in affect them on various levels relating to tangible income as well as social identity. However, an understanding of the factors that contribute to poverty and provide an indication of possible solutions that will address poverty, such as skills development and social empowerment. It is also evident from the theoretical discussion that poverty is a cyclical phenomenon (Sen, 1999) which follows from, and results in great disparities between those in wanting and those who have. The interventions required to address the tangible or physical effects of poverty should break the cycle of poverty and introduce a sustainable cycle to empower individuals. Narayan (2006) suggests a holistic model of empowerment that explains how internal and external empowerment interventions are required to alleviate poverty. These will be discussed in the subsequent paragraphs.

### **1.3 Internal and external empowerment**

Empowerment is the opposite of, or solution to, poverty that Pick and Sirkin (2010) describes as an objective, a process or some type of intervention aimed at improving human development, equality as well as health. In order to address poverty which is a multidimensional condition, a multi-faceted solution is required. The following section will explain the internal and external requirements of addressing poverty by means of empowerment according to the empowerment model of Narayan (2006), as it is illustrated in Figure 1.1.

The internal and external dimensions of empowerment are theorised to work in collaboration, to lead to an action of empowerment, which in turn leads to success or failure of the desired empowerment (Narayan, 2006).



**Figure 1.1 Types of empowerment necessary for deliberate action.**

(Narayan, 2006, p. 134)

Where external empowerment refers to opportunities related to income, status and power, internal empowerment is suggested to include variables such as skills and abilities. The model further illustrates the outcomes of the action taken in aim of empowerment to reinforce the relevant external and internal empowerment constructs.

Elements which relate to poverty and fall into the category of internal empowerment include psychological drivers of success such as self-determination and self-esteem (Sen, 1999), as well as attitudes and values (UNDP, 2002). The internal factors of empowerment therefore relate to Sen's (1999) category of participatory poverty, which illustrates the negative effect of social values and attitudes on the empowerment of people living in poverty.

In relation to the definitions of poverty, as discussed earlier, external empowerment reflects interventions aimed at skills development and the creation of employment. External empowerment therefore addresses the challenges of capability poverty (Sen, 1999). Narayan's (2006) empowerment model illustrates how positive elements of both internal and external empowerment will reinforce the alleviation of poverty by creating a positive cycle of empowerment.

#### 1.4 Skills development: The building block of external empowerment

According to Pick and Sirkin (2010) “The roots of sustainable development lie, to a great degree, in the capacity of people to overcome their psychological, social, and contextual barriers, to view the world through a new lens, as agents (rather than passive recipients) of change” (p. 5). One way of empowering previously disadvantaged individuals to alleviate their state of poverty is skills development. The International Labour Organisation together with the National Development Plan (Statistics South Africa, 2011) also recognises the value of skills development and education and describes it as the vehicle for empowerment, economic growth and general improvement of welfare. The argument of how skills development could decrease poverty, and the related consequences of poverty, is explained further by discussing the link between the lack of education and poverty.

Research done by the United Nations Educational Scientific and Cultural Organisation (UNESCO, 2012, p.1) indicates that there are currently approximately 775.4 million individuals above the age of 15 who are illiterate, with the highest concentrations of illiteracy in sub-Saharan Africa and both South and West Asia. This number represents uneducated individuals in the world who do not have basic reading and writing skills. These countries are currently ranked amongst the most poverty stricken countries of the world as reported in the Millennium Development Goals Report of 2012 (United Nations, 2012). According to this report “... *poverty remains widespread in sub-Saharan Africa and in Southern Asia, despite significant progress.*” (United Nations, 2012, p. 7).

According to Preece (2006), the benefits related to an increase in education relates to a broad variety of poverty indicators and that educated adults have the capacity to alleviate poverty through a positive cyclical effect. Education therefore plays a role in both starting and maintaining this positive cycle. Preece (2006) refers to the method of measuring poverty to include specific indicators such as “ ... income levels, literacy levels, primary school enrolment figures, infant mortality, HIV/AIDS prevalence, national GDP figures and life expectancy” (p.148). Given that the focus of this study is learnerships the following section explains how specifically education addresses a

variety of these poverty measures, and therefore emphasises the significance of skills development as a building block of empowerment.

Research sheds light on the difference between parents who send all their children to school and those who do not (Preece, 2006). There is a significant trend indicating that educated parents are more likely to send their children, boys as well as girls to school. The alternative that is true for uneducated parents creates a cycle of uneducated parents raising uneducated children who will most likely continue this pattern. Another correlation, which interestingly involves education and the reduction of poverty, is the relationship between education and the spread of HIV/AIDS. The vulnerability of girls to become infected with HIV decreases with each year they receive education (Preece, 2006). If girls therefore do attend school, their risk of HIV/AIDS reduces on a yearly basis. Another finding that supports the link between poverty and the lack of education is that the frequency of malnourishment and death amongst the children of uneducated mothers is double when compared to the children of educated mothers, be it secondary or higher education (Sperling, 2005).

However, one of the greatest challenges in the realm of adult education or learning is the lack of funding (Duke & Hinzen, 2011). The previously disadvantaged find it more difficult to obtain and uphold decent living conditions. This is because the poor are in a position where it is difficult to afford education or training, which renders them uncompetitive in the labour market, ending up in low paying jobs with no future of development or significant increased financial prospects (UNDP, 1997). Each country faces different challenges related to their unique economic, political and social circumstances.

### **1.5 The South African context: Poverty and skills development**

The riches South Africa holds as a country include a variety of elements ranging from an abundance of natural resources to a climate that is conducive to the growth of the tourism industry, and allows for the independent implementation of food security strategies (Mubangizi & Mubangizi, 2005). In contrast to these promising prospects,

South Africa also faces great challenges. One of the greatest challenges Skweyiya identifies, and to which he constitutes the same level of action and attention as required for the waging of war, is the vast economic disparities of unequal income distribution (as cited in Mubangizi & Mubangizi, 2005).

Following from apartheid in South Africa, legal systems and processes were to the benefit of white South Africans in terms of education, employment, medical services and wealth creation (Directorate: Economic Services Department of Agriculture, Forestry and Fisheries, 2010). Amongst the other ethnic groups, including the Black, Coloured, Indian and Chinese, these opportunities only became available in 1994 after the first democratic election. A collective strategy was set in place to correct previous inequalities that included laws, programs and activities such as Affirmative Action and Employment Equity (White Paper on the Transformation of the Public Service, 1995). The proposed outcome of the successful implementation of this strategy towards equality is to empower the previously disadvantaged individuals (including Black, Coloured, Indian and Chinese people). The need for poverty alleviation is corroborated by the fact that in 2002 these individuals accounted for 95% of the poor living in South Africa (Woolard, 2002).

The Employment Equity (EE) Act (1998b) provides guidelines for the purpose of correcting and preventing unjust discrimination. It also imposes affirmative action, which refers to a social policy in terms of creating opportunities for individuals from previously disadvantaged groups to become part of and be promoted in the employed economically active population (Muchinsky, Kriek & Schreuder, 2006). Individuals who were previously denied opportunities of employment or promotion now experience an advantage in this regard as part of the process of creating balance and equal opportunities in the workplace (Horwitz, Bowmaker-Falconer & Searll, 1996).

These systems and programs mostly benefit those already in employment or those who have access to the skilled labour market, however the dire need for skills development remains to be addressed to prepare the previously disadvantaged for entering the world

of work. Systems and legislation regarding skills development have fortunately also been designed specifically for the purpose of addressing the needs of the previously disadvantaged. Preece (2006) signifies that skills development is more effective when it forms part of a holistic system, such as when education is relevant in teaching the skills required in the workplace. This is exactly the approach taken by the South African government in terms of skills development.

The legal framework designed with the specific purpose of developing previously disadvantaged individuals includes the Skills Development Act (1998a), the Skills Development Levies Act (1999), and the South African Qualifications Authority (SAQA) Act (1995) (Muchinsky et al., 2006). The funding for the skills development interventions is provided by South African employers, as it is a legal obligation that 1% of their salary budgets must be paid to the National Skills Development Fund (RSA, 1999a). The SAQA Act guides the development of accredited training programs according to the National Qualifications Framework, also known as the NQF, which enables the accreditation of these training programs on a national level (Bellis, 2001). The individual Sector Education and Training Authorities (SETAs) who set the required standards in terms of training provided then regulate the NQF learnership programs.

These systems and processes which are set in place enable a planned approach toward skills development, which is integrated at a national, provincial, sectorial, and company level (Hatting, 2003). All efforts combine to ensure that resources are available for the up-skilling of previously disadvantaged individuals within South Africa, specifically to enable them for career growth in their current industry of employment. The AgriSETA for example, is responsible to manage the NQF learnership programs in the Agricultural sector. Although poverty and the general lack of skills amongst the poor in South Africa is more or less widespread, the Agricultural sector is viewed as the most important provider of employment in the more rural parts of the country (Simbi & Aliber, 2000). The remainder of this chapter will focus on the factors that could prevent successful skills development of learners in the Agricultural sector.



## **1.6 Employment and skills development in the agricultural sector of South Africa**

The employment statistics in the Agriculture industry tell a unique story of many challenges currently posed to the previously disadvantaged living in the more rural areas of South Africa. The change which can be brought about by skills development to provide prospects of a brighter future depends on the measure to which these challenges and obstacles are understood.

Agriculture is characterised as a rural industry and is in a position to provide employment to impoverished communities, especially as agriculture is rather labour intensive (Goldblatt, 2008). Around the year 2000, 10% of the total number of employed individuals from rural communities in South Africa worked in agriculture (Directorate Economic Services Department of Agriculture, Forestry and Fisheries, 2010, p. 11). Employment figures in this sector are however on a downward trend due to a variety of factors including: (a) higher labour costs (Newman, Ortmann & Lyne, 1997), (b) the increase in development and use of technology and machinery (Townsend, van Zyl & Thirtle, 1997), and (c) the complex policies which restrain opportunities for exports and general capital-intensive farming practices (Vink & Kirsten, 1999). The very industry accessible to rural communities is providing less job opportunities each year. From an employment figure of 1,1 million people in 1992 who in turn provided financial support to an estimated 4 million dependents (Newman et al., 1997), the current employment figure has dropped to approximately 650 000 jobs in March 2010 (Directorate Economic Services Department of Agriculture, Forestry and Fisheries, 2010, p. 18).

More detail constituting the employment figures is reflected in a statistics report of the agriculture and hunting industries in the year 2000 (Orkin & Njobe, 2000). The figures confirm the unequal distribution of job levels amongst different racial groups, from which deductions can be made regarding the disparity of opportunities in skills development, career growth and increased income. Black and coloured individuals comprised 58% and 82% respectively of the elementary job level workers (which included jobs such as

fruit picking and garden work). Only 1% of both coloured and black employees in the agriculture and hunting sectors held management positions. Of the coloured staff employed in agriculture 25% have no education whereas 41% of black male and 40% of black female farm workers find themselves in the same position (Simbi & Aliber, 2000, p. 9). Similarly 34% of black male farm workers and 32% of black female workers have only limited primary school background (Simbi & Aliber, 2000, p. 9). These statistics also indicate that black farm workers are more likely to fall victim to lay-offs due to lack of skills.

In the light of agriculture developing into an industry driven more and more by technology (Townsend et al., 1997), and the fact that farmers are inclined to employ seasonal rather than full-time workers (Simbi & Aliber, 2000), career growth becomes more dependent on skills - without which individuals in elementary positions will have no opportunities for poverty alleviation. Although farm workers are generally paid according to legislative standards (Directorate: Economic Services: Department of Agriculture, Forestry and Fisheries, 2010), Jacobs (2009) indicates that the percentage of their wage required to meet their basic needs illustrates that the wages earned in their elementary jobs cannot sufficiently overcome the threshold of poverty. The recent labour unrest in November 2012 was driven by a demand for an increase in wages from R70 to R150 per day. Numerous lives were lost and especially the wine industry was hard hit (COSATU Press Statements, 2013a; 2013b).

The discussion in this chapter thus far supports the notion that skills development is essential to breach the economic and social disparities that are both created and sustained by poverty (Preece, 2006). The approach of government, through implementation bodies such as the AgriSETA, is to address this skills issue by providing access to learnership programs, which are standardised training programs. A systematic investigation of the internal empowerment elements will provide insight to the challenges that the previously disadvantaged face in the pursuit of success and yielding the benefits from these learnership programs.

### **1.7 The impact of internal empowerment factors on learnership performance**

Empowerment will only prevail in the presence of success in the implementation of interventions aimed at addressing poverty. Despite the opportunities provided which could enable individuals to alleviate their own positions of poverty, such as achieving a qualification or getting a job, certain conditions of disempowerment embedded in the impoverished environment and background of the previously disadvantaged still prevent the success of development interventions. Pick and Sirkin (2010) explain that individuals from disadvantaged backgrounds experience even greater challenges, for example a lack of freedom of personal choice (implicating living under the decisions imposed on them externally) pressure, guilt, force or the pursuit of survival. Ajzen (2002) refers to an individual's personal decision to engage in a behaviour as an intention (in favour or against performing a behaviour). Given this definition, it is understandable that for individuals coming from a background where they had limited choices, the challenges they may experience in purposefully working towards the achievement of success in a learnership program, could be more difficult than one may estimate.

### **1.8 Study objectives**

The purpose of the research study is therefore to investigate the extent to which various factors influence the learnership performance of learners in the agricultural sector. This investigation will include the following objectives:

- a) Investigate the theoretical perspectives posed in literature regarding the constructs that influence learnership performance.
- b) Develop a reliable instrument (questionnaire) to accurately measure the factors underlying learnership performance.
- c) Provide recommendations to the SETAs based on the results of the study regarding variables which relate to learnership performance.

## **1.9 Summary: Chapter 1**

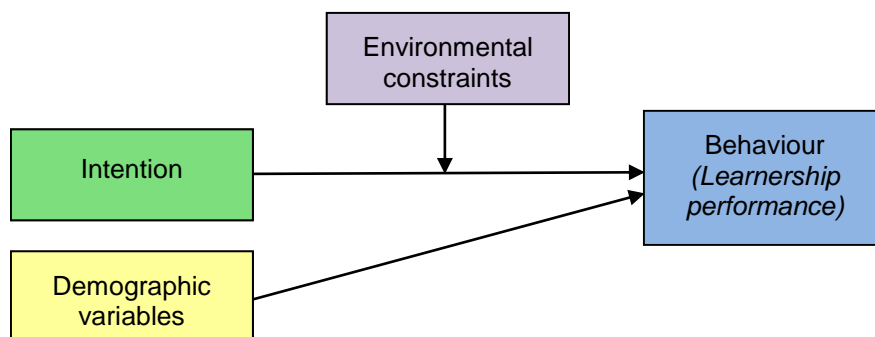
The eradication of poverty is not as simple as the implementation of programs and processes related to the physical aspects of poverty such as skills development and the creation of employment (Narayan, 2006). There are various factors, including psychological factors, related to poverty and which can inhibit the success of these interventions. These factors should therefore be investigated and understood, in order for them to be overcome. A variety of elements have been introduced which could influence learnership performance. The focus of this study is to investigate the factors that could affect learnership performance. The following chapter provides theoretical evidence regarding the variables to be included to study learnership performance.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction: Chapter 2

The first chapter provided background regarding the importance of skills development as a tool for alleviating poverty and referred to the barriers that could prevent the success of skills interventions. The purpose of this chapter is to provide the theoretical context for the factors that either contribute to, or inhibit learnership performance. A variety of personal success factors have been shown to predict learning performance significantly. For the purpose of this study three groupings of variables, namely demographic variables, intention as a direct predictor of learning performance and a moderating variable, environmental constraints, will be explored. As these major groups of variables have been proven to contribute to the understanding of performance (refer to chapter 1). The theoretical discussion leads to the development of a partial model, designed to describe learnership performance. Figure 2.1 presents a simplistic diagram of the three groups of variables, highlighting the focus elements of the study.



**Figure 2.1** Simplistic version of the partial model of learnership performance.

Additional variables relating to these constructs will be studied in terms of learnership performance and will be discussed in further detail in this chapter. The focus will firstly be on the broader description of learning, followed by the intended behaviour in question namely learnership performance. Subsequent to an explanation of the

demographic variables and the model used for measuring intention, is a discussion of the role that the moderating variables have to play in the relationship between intention and learnership performance. Lastly, the detailed model of learnership performance will be presented.

## **2.2 Learning, training and education**

High levels of learnership performance is the goal to achieve when participating in a learnership program. Before one can investigate the factors that influence learnership performance, a clear distinction between learning, training and education is needed.

Senge (1990) describe learning to be similar to being human. He argues that both these experiences are never-ending processes of change and development. This view portrays learning to be a continuous progression toward the future and that being human is just as natural as learning – as we gain experience we cannot but learn as well. This definition of learning therefore recognises and describes learning as a change of behaviour through experience (Gilley, Eggland & Gilley, 2002). Weiss (1990) argues that experience is in fact the encoding of information, which is then processed and are either retained for short-term or long-term purposes.

In an organisational setting training is often regarded as formalised learning, where change in behaviour is managed through a structured, curriculum driven program (Van Dam, 2012). Formalised learning is different from social learning and informal learning. In social learning the source of information is the social interaction between employees for example when individuals working together share ideas and insights that contribute to learning. Informal learning is opposed to formal learning in the sense that informal learning is usually an unplanned activity that takes place as an unintentional by-product of the process of workplace problem solving (Van Dam, 2012).

Rothwell (2005) explains how training (or planned learning) focuses on the identification and development of key competencies that will enable individuals to achieve higher performance in their jobs. The key competencies refer to the knowledge, skills and

abilities required to perform a specific work role and these competencies set the framework for what the content of a training program should include. An effective training program is also clearly defined in terms of the period in which the trainee should attain the stipulated knowledge, skills and abilities (Van Dam, 2012). Knowledge regarding the current and desired competency level of trainees is therefore required in order to set realistic expectations for the anticipated development.

Training and learning both refer to growth or change. Where learning is defined as the processing of information that results in behaviour change, training focuses more on specific behavioural change. According to Goldstein and Ford (2002) training includes the acquisition of skills, the formation of attitudes, and the understanding of concepts or rules which will enhance behaviour. The focus of training in the workplace is therefore to improve efficiency and productivity through the attainment of skills and the acquiring of knowledge that would increase efficiency and productivity and thereby enhance performance in organisations.

Education refers to the attainment of grades in, for example, a school curriculum and is often used to evaluate levels of poverty in a country (Preece, 2006). An education which enables individuals to read and write forms a base for further learning, and the acquiring of skills which are necessary to work for an income. The International Labour Organisation (Statistics South Africa, 2011) expresses the link between learning and the alleviation of poverty, in that skills development and education are regarded as the vehicles for empowerment, general improvement of welfare as well as economic growth. Preece (2006) expresses the value of education, learning and skills development in that educated adults (a) are more likely to send their children to school; (b) have lower infant mortality rates amongst their children and (c) have less HIV/Aids infections. Education and learning therefore has an important role to play in the development of a nation and the empowerment of its most vulnerable citizens.

### **2.2.1 Learnership programs**

With the legislative systems in place, a planned approach can be adopted toward skills development that is integrated at a national, provincial, sectorial and company level (Hatting, 2003). The economic relevance of the NQF learnership programs lies in the growth of a competent labour market, which is a key element of economic growth. Learnerships are defined as formal learning programmes that align theoretical learning and structured workplace experience in order to build the capacity of employees, and those aspiring to become part of the workforce, with the knowledge and required skills to be productive and competent in a job which is in demand (Republic of South Africa, 1998a). The key concepts of this definition are that learnerships are implemented to optimise productivity through the accumulation of skills through theoretical learning and structured workplace experience.

By implementing this framework of skills development it is anticipated that the low skills base of the South African population, when compared to other nations, will be increased (Muchinsky et al, 2006). The implementation of EE and affirmative action further extends the opportunities of the previously disadvantaged demographic to be selected for the learnership programs, appointed to relevant positions and further their careers in representing their demographic in leading management positions. The successful implementation of the legislation and initiatives has a direct impact on the actual development that will take place. In the same way, if the opportunity to participate in a learnership program is not accompanied by the successful completion of the learnership program, it could be regarded as wasteful.

### **2.2.2 Learnership performance**

Learnership performance resembles the theoretical constructs of training performance and learning performance, i.e. the acquiring of knowledge and skills. This is also evident with the implementation of learnership programs given that there is a classroom learning component (lectures where learning material provides the structure for training) as well as workplace training in the form of on-the-job learning activities. The measurement of the theoretical learning and workplace experience of learners is



assessed throughout the course of the twelve-month training program by assignments and formal written tests. The tests and assignments are formulated according to the content of the learning material (Gilley et al., 2002).

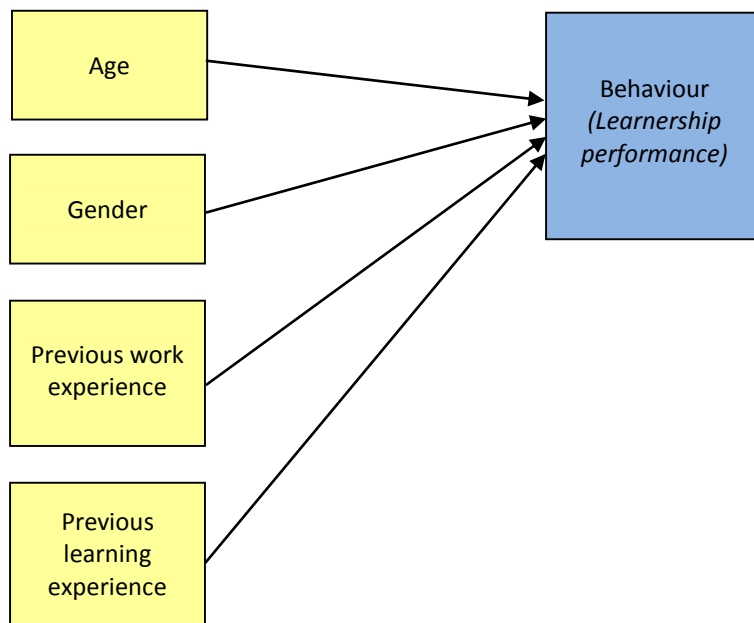
For the purpose of this study, learnership performance is defined as the measurement of a learner's attainment of the intended knowledge and skills of the training program. This definition resembles the concept of learning transfer as described by Cheng and Ho (2001) who regard learning transfer as the measurement of what has been achieved by the learner in the training environment. Learners obtain a final mark at the end of the learnership program (theory and practical). A 50% mark is required to pass the learnership program. The numerous factors that could influence intention to learn and learnership performance, are discussed in the subsequent sections.

## **2.3 Demographic variables**

Demographic information relating to age and gender is often captured in studies pertaining to human behaviour, but is usually utilised for descriptive statistical purposes instead of being the focus of empirical research (Colquitt, Le Pine & Noe 2000). The study of Singleton (2010) explored the influence of demographic variables on learnership performance, while Oulette and Wood (1998) investigated whether previous work and learning experience could significantly predict future performance. The following section investigates the merit of studying demographic variables (age, gender, previous work experience and previous learning experience) in direct relationship to learnership performance (refer to the yellow shaded areas in Figure 2.2).

### **2.3.1 Age**

Different perspectives exist regarding the impact of age on individuals in a learning environment. There is a notion that older people learn at a slower pace, and that their performance in training interventions therefore does not ensure good return on investment (Charness, Kelley, Bosman & Mottram, 2001; Newton, 2006; Ng & Feldman, 2008).



**Figure 2.2 Demographic variables.**

Weiten, (2000) however contradicts the notion that learning capability deteriorates with age when he contends that problem solving ability does not weaken over time. A recent study supports Weiten's findings in that older learners showed higher levels of learnership performance and younger learners showed lower levels. Singleton's (2010) study further revealed statements expressed by older learners for example, that one is never too old to learn (Singleton, 2010).

Soederberg, Stine-Morrow, Kirkorian and Conroy (2004) argue the likelihood that in situations where older workers have prior knowledge on the subject matter, they tend to apply the newly learnt knowledge with greater success. The fact that learnership programs are developed for a specific occupation could benefit older learners who have more experience in the occupation, compared to younger learners who come across some of the concepts for the first time in the classroom. Provided sufficient time for learning, older learners could therefore achieve better results than their younger peers. Thus, the expectation is that older learners will achieve higher levels of learnership performance compared to younger learners.

*Hypothesis 1: Older learners perform better in learnerships than younger learners.*

### **2.3.2 Gender**

In South Africa the diverse socio-cultural contexts of the population provides various challenges. Culture-associated norms with regard to gender could restrain women from furthering their education and skills development (Annan-Yao, 2004). It is also argued that gender-role perceptions limit the participation of women in development and learning opportunities (Mandela, 1993), as the traditional role of females is still prevalent and forced onto women, for example being responsible for the children and attending to housekeeping obligations. Women who respect these unspoken expectations held by society, do not afford themselves the opportunity of further education and may not see academic achievement as an ultimate goal.

According to Renaud, Morin and Cloutier (2006) men exhibit higher training performance than women. A possible contribution to the disparity in training performance results between men and women could be the limited number of opportunities for women to attend training interventions (Paulson-Gjerde, 2002; Renaud et al, 2006;). Efforts to restore equality regarding genders in the workplace have received a lot of attention over the past few decades and legislation and policies have been set in place in many organisations to afford men and women equal opportunities in the workplace (Republic of South Africa, 1998b). The following hypotheses relate to the influence of gender regarding learnership performance.

*Hypothesis 2: Men are more likely to have access to learnerships than women.*

*Hypothesis 3: Men are likely to perform better in a learnership program than women.*

### **2.3.3 Previous work and learning experience**

Learnership programs are developed according to the National Qualification Framework and are specifically tailored to enhance the knowledge and capabilities of individuals in their current, and/or aspiring, working positions (Singleton, 2010). The strong alignment between the learnership material and content of the work that the learner does on a

daily basis could therefore benefit learners with more experience in their current field. Learners who have been working in the agricultural sector for a short while are expected to know less about their job, and therefore they will not have the experience that provides additional background or contextual support to absorb the learning material.

Oulette and Wood (1998) argue that the best predictor of future behaviour is past behaviour. Therefore, it makes sense to investigate previous learning behaviour in an attempt to predict future learning behaviour. Research shows that learning opportunities increase in direct measure to academic levels (Renaud et al., 2006), thus the higher the academic level obtained, the more opportunities for learning exist. The opposite could therefore also be true, in that individuals who have only completed lower levels of education are less likely to attain opportunities to continue their learning.

Individuals with higher academic performance levels experience fewer social obstacles in learning (Devanney, 2009). If learners experience success in academic performance, they may accept or believe that their success is not only situational, but rather that it is an innate ability that they could apply in other learning environments. These learners typically believe that they are and will be successful academically (based on their previous success) and that they are able to overcome the obstacles in their way of academic achievement. This research study aims to create an understanding regarding the factors underlying learnership performance by considering an individual's previous work and learning experience in terms of the following hypothesis.

*Hypothesis 4: Learners with more work experience (relevant to the content of the learnership program) perform better in learnerships than learners with less learnership experience.*

*Hypothesis 5: Learners who completed more grades in school perform better in learnerships than learners who completed fewer grades.*

## 2.4 The construct of intention

According to theory, a positive relationship exists between intention and behaviour which means that an increase in the intention to engage in a behaviour enhances the likelihood of the behaviour actually being performed (Broonen, 2001). The strength of the deterministic relationship between intention and the performance outcome is an indication of the accuracy of the measure between intention and behaviour (Ajzen & Fishbein, 1975; Ajzen & Fishbein, 1980; Fishbein, 1967). The study of the cognitive reasoning process, of forming an intention to perform well in a learnership program, could therefore provide insight into the underlying factors leading to successful learnership performance.

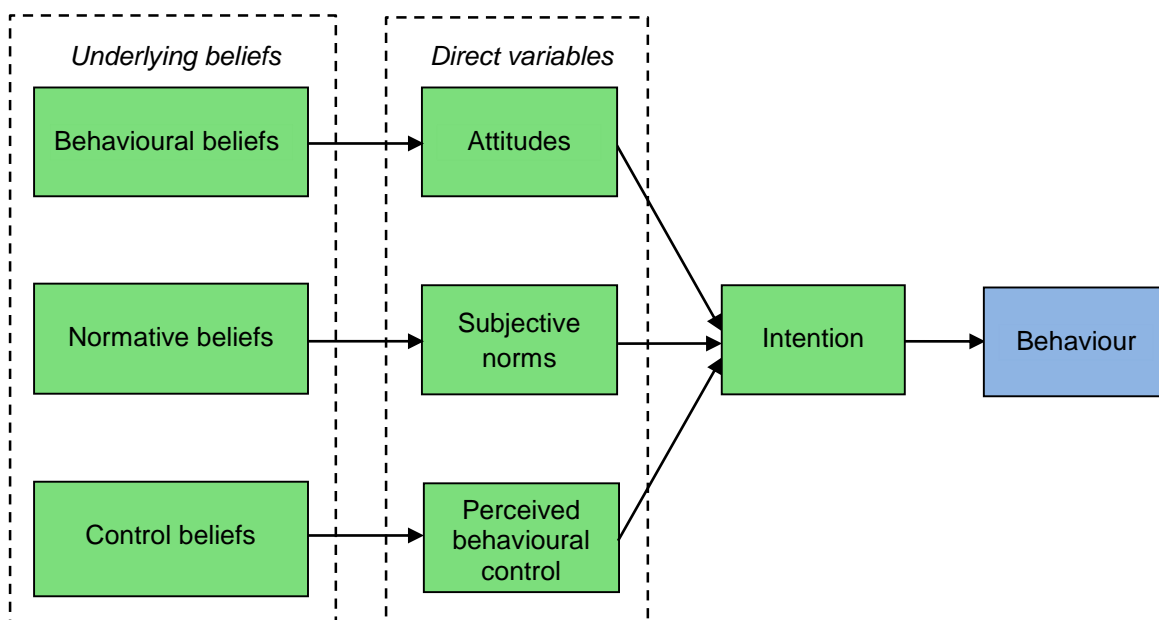
Ajzen (1996) states that "... the decision to adopt a certain course of action logically precedes actual performance" (p. 311). This verifies the importance of intention as a significant predictor of actual behaviour and also addresses the notion that a decision to engage in a behaviour needs to be adopted – meaning personal acceptance and application. Ajzen (1996) therefore makes a distinction between motivating forces imposed on an individual from the external environment and the internal decision or choice of directing one's behaviour. This illustrates the subjective nature of the study of intention that, although it includes stimuli from the external environment, emphasises the internal processes that moderate these inputs (in relation to a series of other factors) to form an intention.

It is therefore argued that intention explains the motivational factors that lead to behaviour, and that the factors underlying the specific behaviour of learnership performance should include the study of intention. The hypothesis regarding the construct of intention is therefore as follows:

*Hypothesis 6: A strong intention to perform well in a learnership program leads to high levels of learnership performance.*

### 2.4.1 Theory of planned behaviour

The measurement of intention with the purpose of influencing behaviour requires a theoretical model which has been proven to accurately measure intention. The theory of planned behaviour (Ajzen, 1991) is a model that illustrates intention as the focal construct in a cognitive reasoning model of predicting behaviour (refer to Figure 2.3). The accuracy with which intention can be predicted by the theory of planned behaviour (TPB) has been confirmed by a series of quantitative as well as narrative reviews (Ajzen, 1991; Conner & Armitage, 1998; Conner & Sparks, 1996; Godin & Kok, 1996; Sparks, 1994; Van Den Putte, 1991). The sufficient theoretical support for this model indicates the relevance of including the variables of this model to measure intention as part of the model designed to measure the factors underlying learnership performance.



**Figure 2.3 Theory of planned behaviour.**

(Montaño & Kasprzyk, 2008, p. 70)

The relationships depicted in this model include three horizontal streams of underlying beliefs and their related direct variables influencing intention, which leaves the direct relationship between intention and the intended behaviour (Jimmieson, White &

Zajdlewicz, 2009). The following sections focus on interpreting the three underlying beliefs and corresponding direct variables as illustrated in Figure 2.3 (Ajzen, 1991).

According to Ajzen, (1991) the TPB includes three underlying beliefs (behavioural beliefs, normative beliefs and control beliefs) that impact on intention through the mediating effect of three respective direct variables (attitudes, subjective norms, perceived behavioural control). As illustrated in Figure 2.3, these variables in turn form three streams that determine intention, which predicts behaviour. The following sections are a discussion of the variables included in this model as applied to the intended behaviour of learnership performance.

#### **2.4.2 Underlying beliefs**

According to Collins' Dictionary (2000) beliefs refer to one's convictions, opinions or that which one accepts to be true. Each set of behavioural beliefs will subsequently be discussed.

**Behavioural beliefs:** Behavioural beliefs refer to the perception held by an individual about what the outcomes of a behaviour will implicate (Ajzen, 1991). Recognising one's behavioural belief generally leads to the formulation of a favourable or unfavourable attitude toward a specific behaviour. The value of studying this variable in relation to behaviour prediction is confirmed by Ho and Kuo (2009). These authors report that a positive increase in behavioural beliefs and attitudes lead to higher levels of intention.

Ho and Kuo (2009) explain that behavioural beliefs entail the conviction of an individual of the probable consequences of the considered action. This definition provides insight into the formation of behavioural beliefs stemming from previous personal experience where elicited action-consequence relationships were either experienced or observed and lead to the formation of specific beliefs. Within the context of this study, it could be postulated that previous academic success leads to the formation of the behavioural belief that attending class and studying for tests and exams lead to high academic achievement. If the student did not experience success after attempting to achieve well

academically, alternative beliefs would have been formed such as “*attending class and studying for exams do not guarantee academic achievement*”.

Although learning after school may include different subjects and take place in a different environment, Mulder and Bayer (2007) suggest that the way in which one appraises a new learning opportunity is based on the expectancies and values formed during previous learning experiences. These expectancies and values are further based on deductions made in terms of the causal relationships between behaviour and outcomes. Therefore, a learner who has engaged in a previous affirmative development intervention and experienced success in completing the program will most likely hold beliefs such as: “*If I take part in a learning process, I will be better at my job*”. The attitude formed in line with this belief can for example be: “*As I learn more about my work, I feel good about the fact that I can do a good job, so therefore I like learning and want to learn more*”. If however a learner has not had the experience (or observation of someone else’s behaviour) that learning leads to better work performance, there will be little or no sufficient grounds for reasoning that the outcomes of learning (or any given behaviour) will result in favourable results.

Research has also supported the notion that an increase in behavioural beliefs and attitudes (regarding a given behaviour) has the result of increasing the intention to engage in the favoured behaviour (Ajzen, 1991). Individuals who hold a positive attitude and believe that the successful completion of the learnership will be beneficial, will most likely be more inclined to succeed.

The desired outcome is therefore important when studying the impact of beliefs. If the learner desires to complete a learnership successfully purely for the purpose of completing the program and receiving a certificate, the study of the relevant beliefs will revolve around which behaviours provide input to the success in the learnership. If however, the desired outcome is a promotion, the focus moves toward behavioural beliefs formed by observing successful learners receiving promotions based on their new qualification, or not. Kiriakidis (2010) states that behavioural beliefs provide the



framework for considering the advantages related to engaging in the given behaviour (based on previous experiences or observations). It is therefore essential to understand the beliefs held by individuals when they engage in learnership programs as it will most likely impact on the outcome of their success in the learnership program.

**Normative beliefs:** The South African context and the culture of Ubuntu may prove to support the notion of normative beliefs as an indirect variable predicting behaviour to a greater extent than the more Westernised countries of the world. This unique African philosophy of "I am because we are" resembles the concept of collectivism (Booyesen, 2001, p. 38). The culture of Ubuntu motivates individuals to create their identities in relation to the people around them and value is derived from being part of a bigger community. Generally speaking, black Africans strive to be well connected within their societies instead of endeavouring to be independent, like their Western counterparts. De Wet (2010) mentions that by belonging to a group instead of being independent (values included in the philosophy of Ubuntu), suffering is divided, joys are multiplied, people are available to listen, help, encourage and to congratulate. Although emphasis is placed on being socially connected, conformity is not implied as Ubuntu celebrates the dynamic notion of inclusiveness (Ncube, 2010).

The expression of normative beliefs establishes the acceptability of either performing the behaviour (or others performing the behaviour), which may exert pressure on an individual to engage in, or abstain from, behaviour (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). In a culture where value is derived from social connectedness in the expression of Ubuntu, it is likely that normative beliefs, being the social affirmation of behaviour, will have a significant (indirect) impact on the intention to engage in behaviour. If normative beliefs are the standards, beliefs and expectations held by one's community or salient referents (Ajzen, 2002) it becomes clear why this set of beliefs could be even more relevant in the South African context than in Western countries. In light of the importance of Ubuntu where family and the inclusiveness of communities are highly valued, acting according to the norms of one's community could arguably be part of one's identity. In a Western society where individual success has a

greater focus, one would expect that pressure from key individuals might not have similar impact when compared to an inclusive culture. Research by Terry and Hogg (1996) confirms that normative support in favour of a particular behaviour increases the likelihood that individuals would engage in the specific behaviour compared to individuals without the agreement or support from the significant people in their lives.

The relationship between normative beliefs and intention is moderated by the individual's subjective norms. Subjective norms are influenced by the normative beliefs of significant others (Ajzen & Fishbein, 1980). In order to gain a better understanding of the specific normative beliefs impacting on the subjective norms of the learner, it is imperative that the different sources of pressure or support from the learner's significant others should be identified. In the context of participating in the learnership the significant others in the learners' social environment could include family, friends, manager, and the learnership training facilitator.

A community that is supportive of individuals taking part in actions of affirmative development will most likely exert pressure on its members to engage in learnership programs and to complete them successfully. Cohen (1990) also articulates the importance of supportive individuals in the pursuit of successful learning interventions. He refers to research that illustrates that supportive supervisors shape the training beliefs of learners and contribute to the success of learners in their learning endeavours. This emphasises the importance of support structures when pursuing success in learning interventions.

Monaghan and Cervero (2006) support the notion that the organisation's expectations influence an individual's learnership performance. They argue that the utilisation of human resource development programs (such as training interventions) clearly signal the organisation's expectations to its employees. If an organisation therefore provides a variety of learning opportunities consistently throughout an employee's tenure at the organisation, the employee should deduct that the organisation values the benefits of

learning and encourages or expects that staff should participate in the learning activities.

**Control beliefs:** The theory of reasoned action (TRA) was developed by Ajzen and Fishbein as cited in (Glanz, Rimer & Viswanath, 2008) with the objective of predicting behaviour. The TRA distinguishes between behavioural and normative beliefs but does not include the variable of control beliefs. The TRA could therefore only predict behaviours that are within volitional control. Rosenstock (1966) and Triandis (1977) recognised this limitation of the TRA and included additional variables such as barriers and facilitating conditions to the TRA. This expansion created the possibility of studying the causality between a more comprehensive set of variables that directly and indirectly lead to behaviour. The significant contribution of these factors stimulated debate around the limitations of the TRA and lead to the development of the TPB by Ajzen and colleagues (Ajzen, 1991; Ajzen & Driver, 1991; Ajzen & Madden, 1986).

Control beliefs (as the additional set of beliefs added to the behavioural and normative beliefs of the TRA), are defined by Armitage and Connor (1999, p. 36) as follows:

*“Control beliefs are the perceived frequency of occurrence of salient facilitating or inhibiting factors multiplied by the power of those factors to inhibit or facilitate the behaviour in question.”*

Control beliefs reflect the conviction people hold concerning the presence or absence of factors that facilitate or inhibit behavioural performance (Montaño & Kasprzyk, 2008) and therefore create an additional dimension of control. The development of control beliefs is fashioned in line with the notion that one's beliefs develop from deductions made from personal experiences and the observation of the experiences of others. According to Ajzen (2002) the second-hand or observed deductions play a greater role in forming control beliefs when compared to normative and behavioural beliefs. This entails that a learner's interpretation of how senior learners for example experience learning, could have a significant impact on the learner's approach to learning.

According to Ajzen, (2002) the TRA measures different aspects of motivation leading to the intention of behavioural performance, while the TPB includes a facet of ability in the form of control beliefs and perceived behavioural control. Ajzen justifies the inclusion of the control variable in the TPB by explaining that the lack of control limits the study of certain behaviours. Without control, these research efforts are rather the study of goals, where dependencies include favourable situational factors and the actions of other individuals. Although all behaviours could arguably include goals, the difference between goals and behaviour is the likelihood of one's control, as control over one's behaviour may be more likely than having control over the attainment of a goal. Where behaviour is the outcome of sufficient motivation, taking into account that behaviour in essence is under volitional control, the achievement of goals typically relies on a multitude of additional factors. The successful completion of a learnership program (which could arguably be categorised as a goal) relies on the behaviour of the learner together with favourable situational in factors.

Mudde, Kok and Strecher (1995) as well as Scholz, Sniehotta and Schwarzer (2005) further substantiate the significance of control beliefs (which finds its origin in previous experiences) by stating that an individual's past experiences with the target behaviour increase the perceived behavioural control over that specific target behaviour. If the foundation of one's control beliefs regarding learning consists of negative experiences where inhibiting factors were not within volitional control, such control beliefs would most likely impact negatively on one's experience of controllability of future learning experiences.

### **2.4.3 Direct variables**

Broonen (2001) explains direct variables as the outcome of a belief based on one's subjective evaluation of, and response to, one's beliefs. The direct variables which according to the TPB impact directly on intention (attitudes, normative beliefs and perceived behavioural control) will be discussed in relation to the relevant underlying beliefs (behavioural beliefs, normative beliefs and control beliefs).

**Attitudes:** According to the TPB, attitudes are a direct determinant of intention and involve one's general positive or negative feeling toward taking part in the behaviour (Armitage & Conner, 1999). The behaviour one may exhibit when confronted with a certain action or object is based on the influence of one's attitude toward the action or object. Therefore the action or object is not the direct construct causing one to react in a certain way, but one's response is rather rooted in the attitude one holds (Fishbein, 1967).

Behavioural beliefs, as discussed previously, could be described as a library of intelligence regarding patterns of behaviours and the related outcomes of behaviours (Broonen, 2001). Knowledge of the consequences of behaviour is the foundation required to form an attitude (which is the evaluation of the probable outcome). Attitudes can therefore also be described as a function of behavioural beliefs and the relevant outcome evaluation.

Schunk, Pintrich and Meece (2008) recognised the significance of affective memories (such as negative comments from teachers) and the influence these have on one's perceptions and behaviours. Even if the incident was forgotten, the memory can be activated when anticipating engagement in a similar task, despite a different context. For example, the memory of negative experiences in school can be recalled when attending a work-related training program. It could be argued that what Schunk et al., (2008) refers to as perceptions, is in fact underlying behavioural beliefs which lead to an inclination to engage in a specific behaviour (as a result of the evaluation of the outcome of the experience). This positive or negative attitude has a large impact on the intention to engage in the behaviour, such as participating in a training program.

According to Schultz, Bagraim, Potgieter, Viedge and Werner (2003) it is impossible to formulate an attitude without an expectation of the consequences of behaviour. How one feels about the outcomes of one's behaviour in response to the particular object, situation or individual, illustrates the affective (emotional) subjective component of attitudes. An individual fostering a positive attitude toward learning is therefore more

inclined to develop a strong intention to perform well in the training interventions (Patrick, 1992). Therefore, attitudes are expected to influence one's intention to perform well in a learnership program and the following hypotheses can be stated:

*Hypothesis 7: A strong positive attitude toward learnership performance leads to a strong intention to perform well in a learnership program.*

*Hypothesis 8: Behavioural beliefs influence intention, through the mediating variable of attitudes.*

**Subjective norms:** An additional dimension theorised to have a direct positive linear effect on intention is a social factor termed subjective norms. This variable is related to the previously discussed normative beliefs variable and refers to an individual's perception of social pressure to perform or not to perform the behaviour. It could also indicate an individuals' reasoning behind the formation of an intention to act based on what significant others (specific referent individuals or groups) would approve or disapprove of (Ho & Kuo, 2009).

The significance of how the expectations of others can influence intention and therefore the behaviour of learners necessitates the identification of who the learners' most important referents are. Regarding the exploration of normative beliefs and subjective norms in terms of learnership performance, the significant individuals who would likely influence their intention include the organisation (i.e. the learner's direct senior and colleagues), the learner's family (grandparents, mother, father, spouse, brothers or sisters) and the learner's closest friends. The following hypotheses are posed relating to the role of subjective norms and normative beliefs in terms of learnership performance:

*Hypothesis 9: Subjective norms that strongly favour learnership performance, lead to a strong intention to complete and do well in a learnership program.*

*Hypothesis 10: Normative beliefs influence intention, through the mediating variable of subjective norms.*

**Perceived behavioural control:** The concept of perceived behavioural control includes two factors namely controllability and perceived self-efficacy (Armitage & Conner, 1999; Manstead & Van Eekelen, 1998; Terry & O’Leary, 1995). Ajzen (2002, p. 671) describes the difference between these two components as follows:

*Items concerned with the ease or difficulty of performing a behaviour, or confidence in one’s ability to perform it, are often said to measure perceived self-efficacy and they are contrasted with items that address control over the behaviour, or the extent to which its performance is up to the actor.*

Bandura (1997) defines self-efficacy as the belief people have concerning their capabilities to produce specified outcomes or stated differently, a personal evaluation of one’s capacity to engage in a behaviour. Perceived self-efficacy is therefore an appraisal of one’s ability to engage in a behaviour and is based on learned expectations that are dependent on the estimation of the contextual factors (Bandura, 1982, 1993, Pajares & Miller 1995; Schunk, 1991).

The findings of several studies (Armitage & Conner 1999; Manstead & van Eekelen, 1998; Terry & O’Leary 1995) designed specifically to examine the factorial structure of perceived behavioural control show that including items related to both subcomponents, significantly improves the prediction of behavioural intentions. According to Ajzen’s (2002) summary, perceived self-efficacy consistently increases the explained variance in intentions when the effects of attitudes and subjective norms are controlled. The addition of this subcomponent to perceived self-efficacy increased the predictability of the combined variable, perceived behavioural control, above that of perceived self-efficacy. The value of combining the two subcomponents that form perceived behavioural control was therefore established.

Perceived controllability however refers to the view of one’s control over the performance of the behaviour (Ajzen, 2002). Facilitating factors for engaging in a behaviour would naturally include the required abilities, skills, knowledge, resources and

opportunities, but in terms of the TPB, the emphasis is on one's perceptions of influential factors rather than the actual value of influential factors (Broonen, 2001). Ajzen (2002) points out that one may understand the variable of perceived behavioural control as being in control of the outcome related to the behaviour when instead perceived behavioural control depicts having control over engaging in the intended behaviour. It is therefore important to recognise the subjective nature of individual experiences, perceptions of expectations and influences.

When investigating the perceived behavioural control of individuals taking part in a learnership program it is essential to consider information regarding the previous learning experiences of the sample group. Even though situational factors of previous experiences are theorised to play a key role in developing self-efficacy (Schunk, 1991), experiences of overcoming difficult challenges can increase one's self-efficacy across different spheres of functioning (Bandura, 2006). Learners who have succeeded in a learning experience in the past will therefore most likely have a higher measure of perceived self-efficacy regarding learning than an individual who has not achieved success in learning before.

Perceived behavioural control exemplifies one's perception of what one can do, where intention illustrates what one will do (Bandura, 2006). According to Broonen (2001) the measure to which perceived behavioural control will contribute to a strong intention to perform a behaviour is dependent on a positive perception that one has (a) the required abilities to perform a behaviour, as well as the (b) control over accessing necessary resources and opportunities. Therefore learners who, for example, do not believe that they possess the required skills to accumulate knowledge and view their situation to include obstacles that they cannot overcome, are likely to have very low perceived behavioural control, which leads to a weak intention to perform well in learnership programmes.

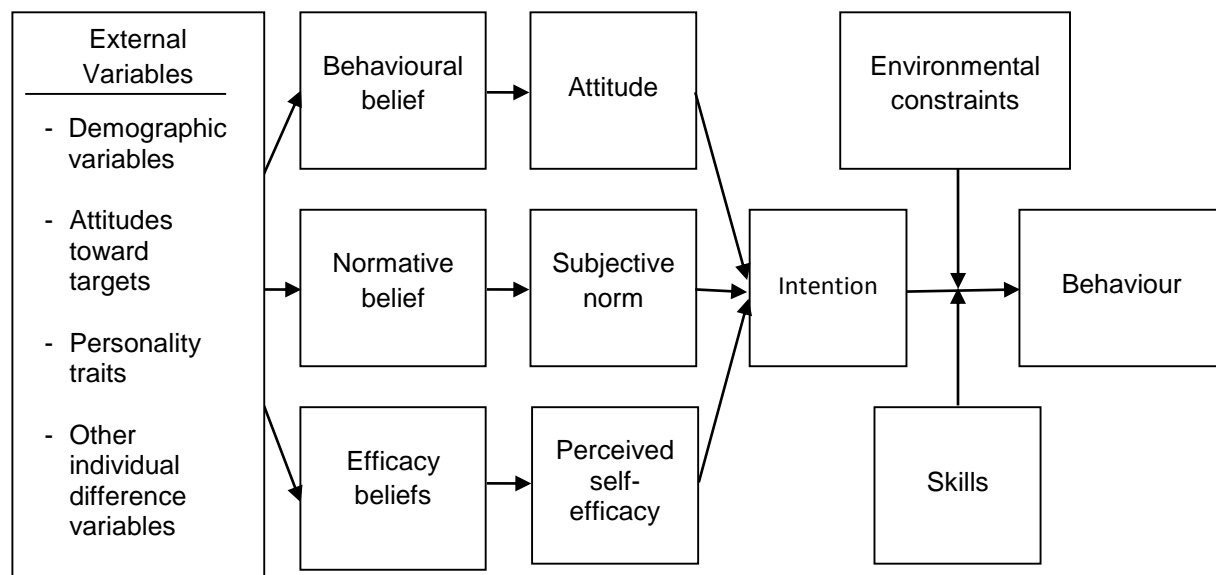


*Hypothesis 11: High levels of perceived behavioural control (in favour of performing well in a learnership program) lead to a strong intention to perform well in a learnership program.*

*Hypothesis 12: Control beliefs influence intention, through the mediating variable of perceived behavioural control.*

## 2.5 Moderating variables of the integrative model of behaviour prediction

A comprehensive study of the intention to achieve learnership performance compels the exploration of other models that could increase the understanding of learnership performance. After gaining insight into all the variables included in the TPB, the focus turns to the constructs of the integrative model of behaviour prediction (IMBP) that could contribute to the development of the final model that will guide the study of learnership performance.



**Figure 2.4 Integrative model of behavioural prediction.**

(Fishbein, 2000, p. 274)

The IMBP comprises an integration of the theories by authors such as Ajzen and Fishbein (1980); Bandura (1986; 1994); Fishbein, Bandura, Triandis, Kanfer, Becker

and Middlestadt (1992) and Rosenstock, Strecher and Becker (1994). As with the TPB, intention is a central construct in the IMBP (refer to figure 2.4). This similarity between the said models explicates that a performance outcome or action is mainly dependent on an individual's intention to engage in the behaviour. The IMBP does however include variables that are not included in the TPB, some of which moderate the relationship between the intention and the performance of the behaviour. These moderating variables refer to skills and environmental constraints. The constructs are debated in the subsequent sections with relation to the possible contribution of variables of the IMBP to the understanding of learnership performance.

### **2.5.1 Environmental constraints**

Environmental constraints refer to the access of the learner to the essential resources required to take part in the learnership program that may include relevant learning material, a capable learning facilitator, relevant assessment measures and physical environmental factors. The benefit of documenting the salient environmental constraints that inhibit learning during their participation in learnership programs could inform the development of specific interventions to address the identified needs. In turn, the elimination of these constraints will most likely increase the likelihood of learners completing learnership programs successfully. The following section focuses on possible environmental constraints in terms of learnership performance including relevant learning material and an adequate learning facilitator (AgriSETA, 2012), as well as one's physical learning environment (Mitchell, 1995; Wills 1993).

Learnership programs are developed according to the National Qualification Framework. Qualified assessors, amongst others, are responsible to ensure that (a) the learning material is according to the AgriSETA's standards; (b) the implementation of the learnerships by the selected training service providers follow the prescribed implementation standards and (c) the assessment mark reflects the learnership performance (AgriSETA, 2007). Thus, the AgriSETA applies various measures to limit the constraints that could hinder learners to complete the learnership program successfully. The farms, pack houses and other learning facilities where the

learnerships are implemented, provide the necessary on-site learning facilities for the implementation for the learnerships. Learners take part in the learning activities during work time and given that the training takes place in the facilities of their organisation, no travelling or time beyond what has been agreed on for their work is required.

Early studies by Mitchell (1995) and Wills (1993) identified the key importance of the physical learning environment conducive to academic performance. These authors consider the following components of the learning environment as essential contributors to learning success: room temperature, lighting, chairs, writing workspace as well as sightlines. Findings related to the impact of room temperature indicate that extreme temperatures (warm and cold) create discomfort. Vermeulen (1999) indicates the appropriate temperature for a learning environment to be between 16 and 18 degrees Celsius. According to Mitchell (1995) and Wills (1993) lighting in a room should be appropriate for the medium of training material used (brighter for reading and writing). The presence and positioning of chairs and suitable writing workspaces create an environment where students can maintain comfortable posture and make notes during training sessions. It also increases the amount of time learners can remain seated and concentrate on the learning material that the facilitator is communicating. Being able to see and focus on the trainer presenting the learning session, or to view the visual aids used in the training, is very important and increases the odds of learners to remain focused on the training content (Meyer, 2002). This also includes the positioning of chairs in the room in such a way that all learners can view the writing board, trainer and additional visual aids.

The learning environment is not limited to the area where physical training takes place such as the classroom, but also includes the environment where learners may engage in homework or practical projects in their working environment. The focus of this study therefore includes the investigation of possible environmental constraints that learners may experience at home as well.

*Hypothesis 13: A strong intention will lead to high levels of learnership performance, when low levels of environmental constraints are present.*

## **2.5.2 Variables from the integrative model of behaviour prediction which will be excluded for this study**

The variables of the IMBP, which are not included in the model for the current study, include skills, efficacy beliefs and self-efficacy, as well as a variety of external factors that are theorised to impact on the three underlying beliefs. The following section briefly explains the meaning of the variables and the reasoning behind the exclusion of the variables.

**Skills:** In the context of the IMBP, skills can be defined as abilities possessed by individuals which enable them to perform a certain behaviour (Fishbein 2000). Cognitive ability is one of the best predictors of training performance (Schmidt & Hunter, 1998), and would therefore provide insight into learnership performance. However, the measurement of cognitive ability requires the implementation of psychometric verbal and numerical tests by a registered psychometrist or psychologist. The sample of the study is spread over a variety of geographically remote areas and therefore the decision was made to exclude this variable from the study.

**Efficacy beliefs and self-efficacy:** These variables are included in the theory of TRA. Ajzen (1991) however replaced the variables of efficacy beliefs and self-efficacy with control beliefs and perceived behavioural control. The variables of control beliefs and perceived behavioural control allow the measurement of factors underlying behaviour that is not fully within an individual's volitional control (Ajzen & Driver, 1991; Ajzen & Madden, 1986).

For the purpose of this study preference is given to the measurement of control beliefs and perceived behavioural control as illustrated in the TPB, reason being that perceived behavioural control constitutes two sub-dimensions namely controllability and self-efficacy (Ajzen, 2002). Creating an understanding of the aspects that contribute to

learnership performance requires the selection of variables that explain as much variance as possible of the intention to engage in a learnership. The elements of the TPB including behavioural beliefs and attitudes, normative beliefs and subjective norms, control beliefs and perceived behavioural control are therefore kept intact for the study of learnership performance.

**External variables:** The position of these variables in the IMBP indicates that external variables influence an individual's normative, behavioural and efficacy beliefs. If external variables (according to the IMBP) were included in this study, it would add an additional layer of indirect variables underlying the salient beliefs (refer to Figure 2.4). This would increase the complexity of the research study beyond its scope and therefore this layer of variables will not be investigated in this study. The direct impact of demographic variables on learnership performance will however be explored, according to the approach followed by Singleton (2010). Attitudes, which according to the IMBP also form part of external variables will be investigated in terms of the variable's mediating role in the relationship between behavioural beliefs and intention.

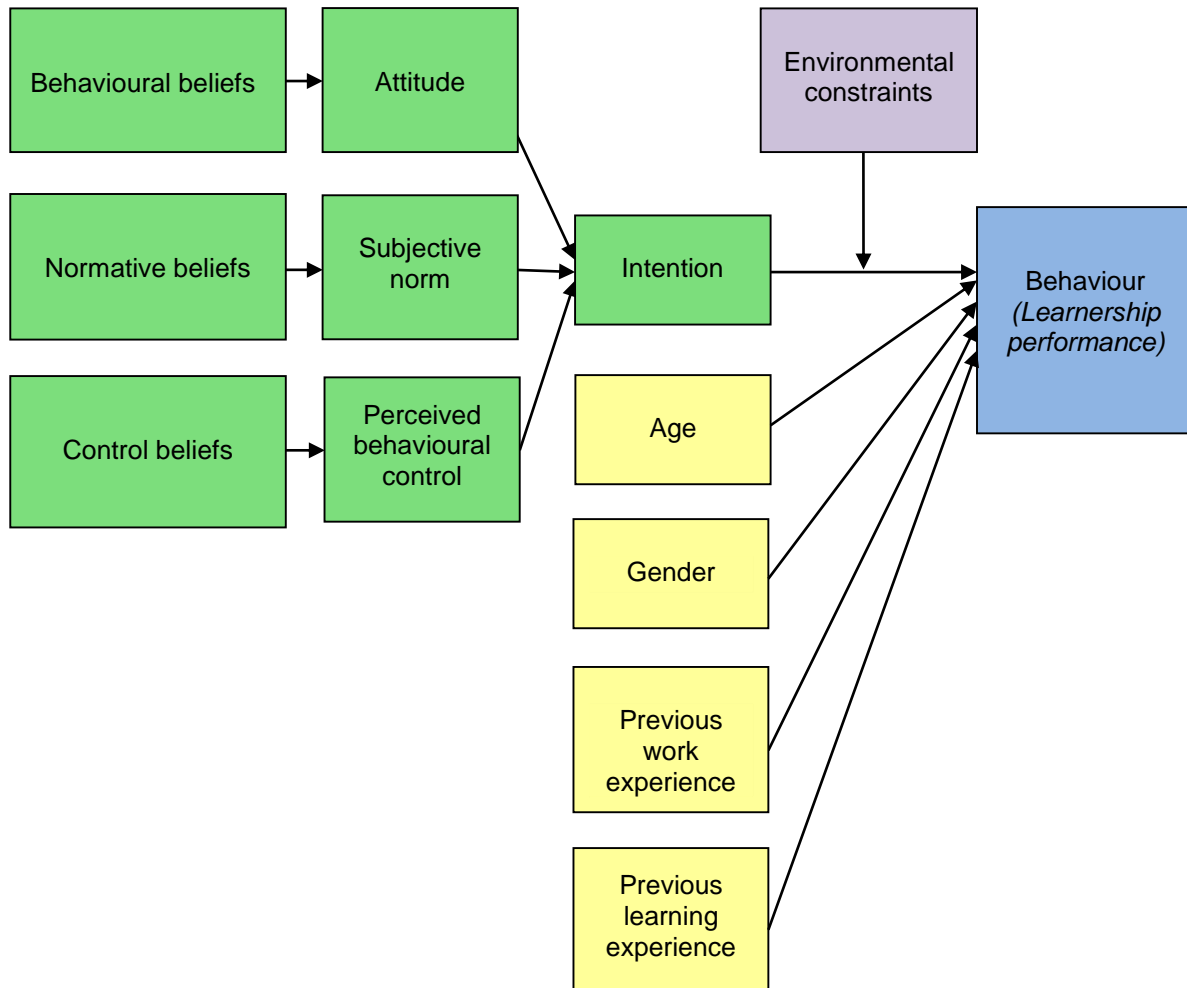
## **2.6. Partial model of learnership performance**

The partial model of learnership performance (PMLP) is the result of the discussion in this chapter regarding factors that could influence learnership performance. The PMLP shows five variables that may influence learnership performance directly, namely: intention, age, gender, previous work experience and previous learning experience. The variables reflected in the TPB (behavioural beliefs and attitudes, normative beliefs and subjective norms as well as control beliefs and perceived behavioural control) are included in the PMLP as they appear in the TPB. Environmental constraints will also be investigated as part of the PMLP and is positioned as a moderating variable, influencing the relationship between intention and learnership performance.

## **2.7 Summary: Chapter 2**

Chapter 2 focused on the theoretical foundations for the study and presented a literature review of the constructs deemed important to answer the research initiating

question, namely to investigate the variables that influence the learnership performance of learners in the agricultural sector.



**Figure 2.5** Partial model of learnership performance.

The literature review covered the broader concept of learning and learnership performance. Learnership programs were described as a tool of empowerment in the context of the South African agricultural industry. The main groups of variables that influence learnership performance were examined in terms of the challenges they pose to learners participating in the learnership programs. Three groupings of variables were identified to influence learnership performance namely (a) demographic variables and (b) intention as variables influencing learning performance directly, as well as (c)

environmental constraints as a moderating variable between intention and learning performance. The PMLP was developed to form the theoretical point of departure for the empirical phase of this study. The research methodology will be discussed in Chapter 3.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction: Chapter 3**

The literature study culminated in the development of the PMLP. This chapter describes the research methodology utilised in this study to investigate the relationships between the variables included in this model. Starting with the broader description of research design, the discussion narrows down to explain the selected methods of data gathering and data analysis. A chronological approach is then employed which explains the process, including methods, samples and measuring instruments required to reach the objectives of the different phases included in this research study.

#### **3.2 Research design**

Research design refers to the strategy followed to verify hypotheses empirically (Kerlinger, 1973; Theron, 2006). An ex post facto research design was utilised to investigate the factors underlying learnership performance. The study was non-experimental, as the research process did not include the manipulation of variables (Muchinsky et al., 2006). The ex post facto design method is not exempt from validity challenges and therefore the study includes clearly defined hypotheses to guide the process of data gathering (Nunes, 2004).

#### **3.3 Mixed method approach**

When both methods of quantitative and qualitative data gathering are employed as strategies of inquiry it is referred to as a mixed method approach (Mummenthey, 2008). Quantitative research methods are distinguished from qualitative research methods in that the data collected by means of the quantitative method reflects in terms of numbers (Maykut & Morehouse, 1994), whereas qualitative research data is presented in the form of words. Kerlinger (1973) supports the quantitative research method and commends the use of surveys as being excellent instruments for obtaining personal and social information as well as beliefs and attitudes, which are the focus of this research study. The benefit of quantitative research in this regard is that it provides verification of



information in a structured format where the trends such as the attitudes and beliefs experienced by participants in the sample are quantifiable in numbers (Muchinsky et al., 2006). The unique value of the qualitative research method is the way in which it creates an understanding of the meaning individuals assign to their experiences, and that it allows for an approach of exploration (Marshall & Rossman, 2011). This approach provides multi-dimensional research data that could provide a holistic understanding of the research problem. The limitations of qualitative data however include the possibility of a lack of standardisation and subjective interpretation (Burns, 2000; Creswell, 2007; Punch, 1998).

### **3.4 Theory of planned behaviour measurement guidelines**

Rubin and Babbie (2007) emphasise the benefits of a mixed method approach, which allows for the strengths of the qualitative research approach to support the weaknesses of a quantitative approach and vice versa. The testing of the TPB involves a mixed method approach including both quantitative and qualitative data gathering (Fishbein & Ajzen, 2010).

The PMLP (Figure 2.5) includes all the variables of the TPB, with the addition of a single moderating variable namely environmental constraints as well as demographic variables (age, gender, previous work and previous learning experience). It is therefore appropriate to implement the guidelines proposed by Fishbein and Ajzen (2010) for measuring the TPB elements included in the PMLP for the purpose of this study. These guidelines align to the mixed method approach of data gathering discussed earlier.

According to Fishbein and Ajzen (2010) the implementation of the quantitative and qualitative approach requires the execution of the following actions:

- Define the behaviour.
- Specify the research population.
- Time frame considerations.
- Elicit the salient beliefs related to behaviour, norms and control.

- Develop items of the direct measures, attitudes, subjective norms and perceived behavioural control.
- Implement a pilot study of the questionnaire.
- Present the final questionnaire to the research sample for completion.
- Follow up on the sample regarding the performance of the intended behaviour.

The remainder of this section will clarify the detail of the abovementioned actions in the context of this study.

### **3.5 Defining the behaviour: Learnership performance**

According to Fishbein (2000) four elements are included in the definition of any behaviour namely: the action, the target, the context as well as the time frame in which the specific behaviour is expected or observed. These elements are required to be stable, and to reflect consistently in items relating to the intended behaviour namely learnership performance. For the purpose of this research study, the action refers to learning. The target is learnership performance, which is measured by the scores learners achieve in the final assessment of the learnership program. Learners therefore achieve the target behaviour of learnership performance by completing the learnership program with a final mark above 50%. The context is the agricultural learnership program and the duration of the twelve-month learnership program.

A final learnership mark in the form of a percentage value expressed the learnership performance of each learner. The training services providers submitted the learnership performance results after the learners completed the twelve-month learnership programs.

### **3.6 Research population**

The research population of this research study refers to individuals selected to participate in a learnership program in the Agriculture sector. A convenience sample of 103 learners from areas within the Western Cape and Gauteng participated in the research study. The fact that learnership programs are standardised and have large

numbers of participants allowed for the selection of a relevant sample to study the intention to learn.

The AgriSETA facilitated access to the research sample by means of the training services providers, who agreed for time to be set aside for the learners to participate in the different phases of data gathering. The accredited learning facilitators of the training services providers are responsible for the facilitation of the learnership programs, and assisted with portions of the data gathering.

### **3.7 Time frame considerations**

An additional factor to consider regarding the measurement of variables included in the TPB, is the time frame regarding the implementation of the following three phases:

- Phase 1: Elicitation of salient beliefs and development of direct measures (Qualitative by means of individual interviews).
- Phase 2: Development, administration and results analysis of the pilot study (Quantitative by means of a questionnaire).
- Phase 3: The development and administration of the final questionnaire (Quantitative by means of a questionnaire).

According to Fishbein and Ajzen (2010), the suggested period between measuring the intention and the intended behaviour is three months for most health related behaviours. The three phases of data gathering were concluded within the first 6 months of the twelve-month learnership program. The reason why the data gathering should not continue after the halfway mark of the learnership program is to allow sufficient time before the measurement of learnership performance. The three phases of data gathering are discussed in the following sections.

### **3.8 Elicit salient beliefs**

The first phase of data gathering involves the elicitation of the sample group's salient beliefs related to behaviour, norms and control, by means of individual interviews.

### **3.8.1 Phase 1: Individual interviews**

According to Ajzen (2006) a small sample of individuals represented in the research population should participate in providing input regarding the salient belief variables, namely behavioural beliefs, normative beliefs and control beliefs. The researcher gathered this data by means of personal interviews with a convenient sample of learners ( $n = 11$ ). The interviews took place within the first month of the learnership program. These learners resided in the Western Cape.

The learning facilitator introduced the researcher to these learners and attended the briefing done by the researcher. The briefing covered the purpose and method of the research study and the participants could ask questions related to the research study. The individual interviews took place after a classroom training session (at the class venue) at a convenient time for each learner. Although a focus group session was considered, individual interviews were the preferred choice as it prevents groupthink (McShane & Von Glinow, 2000). During individual interviews, the interviewer also has the opportunity to create an environment where learners would feel free to express themselves honestly without fear of criticism from their colleagues.

The questions included in the interview guide (refer to Appendix A) addressed the three salient beliefs included in the theory of planned behaviour, namely:

- The behavioural outcomes the learners expected from engaging in a learnership, which included questions about possible advantages and disadvantages related to successful learnership performance;
- Who their most important normative referents are as this will inform the formulation of questions related to expectations of normative beliefs or social pressure;
- Control factors they foresee which may negatively affect their learnership performance and therefore influence their control beliefs (Ajzen, 2006).

The interview guide included a consent form that each participant signed. It also included demographic and background information. Given that an environmental

constraints form part of the antecedents to learnership performance, the interview guide also included questions that gather information in this regard.

### **3.9 Develop items of the direct measures**

The results of the interviews were used to develop questionnaire items; whereby the participants of the pilot study (Phase 2) would be able to rate their agreement or disagreement regarding the salient beliefs. With the literature review as basis, additional items were developed. All the items were measured on a five-point Likert-type scale. In a traditional Likert-type scale, items are usually phrased as statements. For the purposes of this questionnaire, the question format was however considered as easier for the respondents to answer and was therefore phrased as such. A smiley faces response format was used in an effort to clarify the meaning of the responses instead of the traditional categories related to the level of agreement with a statement (for example strongly agree to strongly disagree) (refer to Appendix B).

#### **3.9.1 Phase 2: Pilot questionnaire development and administration**

The pilot and final questionnaire included two sections. The first section (Section A) included the letter of consent, demographic - and background information (31 items). The second section (Section B) included questions that relate to the indirect and direct variables of intention as well as statements relating to environmental constraints (91 items in the pilot questionnaire, and 88 items in the final questionnaire). The development of the environmental constraints scale was by the feedback learners provided during the individual interviews. The scale measuring intention (10 items) was however an adapted version of Nunes's (2004) intention to learn scale (6 items), with the addition of four items that the researcher developed. The context and complexity of the statements of the intention to learn scale was adjusted to align to the educational level of the sample group.

The order of the variables listed in Table 3.1 aligns to the order in which the scales appear in the questionnaire and presents the number of items for each scale. The *Normative beliefs (combined)* scale includes the seven subscales. The following bullets

illustrate the labelling of the individual sub-scales that comprise the combined score of normative beliefs:

- Normative belief (1): normative beliefs relating to the learners' first most important referent.
- Normative belief (2): normative beliefs relating to the learners' second most important referent.
- Normative belief (3): normative beliefs relating to the learners' third most important referent.
- Normative beliefs (coll): normative beliefs relating to the learners' colleagues.
- Normative beliefs (man): normative beliefs relating to the learners' manager.
- Normative beliefs (fac): normative beliefs relating to the learners' facilitator.
- Normative beliefs (com): normative beliefs relating to the learners' community.

Table 3.1 presents a summary of the items and sub-sections included in section B of the questionnaire.

**Table 3.1**

***Summary of items and sub-sections, included in the pilot and final questionnaire***

Scale	Pilot questionnaire	Final questionnaire
	Number of items	Number of items
Behavioural beliefs	6	6
Attitude	6	6
Normative beliefs Combined	40	40
<i>Normative beliefs (1)</i>	8	8
<i>Normative beliefs (2)</i>	8	8
<i>Normative Beliefs (3)</i>	8	8
<i>Normative beliefs (col)</i>	4	4
<i>Normative beliefs (man)</i>	4	4
<i>Normative beliefs (fac)</i>	4	4
<i>Normative beliefs (com)</i>	4	4
Subjective norms	7	7
Control beliefs	10	11
Perceived behavioural control	5	4
Intention	10	10
Environmental constraints	7	4

### 3.10 Pilot questionnaire data analysis

The purpose of the pilot study was to evaluate the quality of the questionnaire as well as to establish whether the members of the sample group were comfortable with the format of the questionnaire and the formulation of the questions. The reliability of the questionnaire reflects the quality of the measuring instrument in terms of the consistency and stability of measurement (Muchinsky et al., 2006).

Data analysis was performed with the STATISTICA 11 software program. The results of the item analysis revealed the scales that do not contribute to the valid and reliable measurement of the relevant latent variable by means of the Cronbach's alpha ( $\alpha$ ) score. The  $\alpha$  is reflected in a score between 0 (no reliability) and 1 (complete reliability). Zikmund and Babin (2010) provide a guideline for categorising reliability scores as follows: scores below .60 indicate poor reliability; scores between .60 and .70 reflect fair reliability; scores between .70 and .80 indicate good reliability and alpha scores between .80 and .95 indicate very good reliability.

The item total correlation value allows for the identification of poor items within the scales of the questionnaire. When an item shows a low item total correlation it suggests that the item does not correlate with the other items included in the scale, or that the item only correlates significantly with some of the items in its scale but have no correlation with other items in the same scale (Murphy & Davidshofer, 2001). Where the item analysis of the pilot data indicated poor items, the correction of items entailed either removing or rewriting items. These corrective actions could improve the reliability of the final measuring instrument. The guide used for deleting and rewriting items was as follows: Items with an item total correlation  $> .3$  were deleted or replaced with new items (Burns & Grove, 1993). Anderson (2001) depicts that item total correlations between .3 and .5 are indicate moderate internal consistency in terms of the development of new measuring instruments. Therefore the theoretical basis of those items with item total correlations between .3 and .5, were reviewed to determine whether the phrasing of the item could be improved (for example to reduce ambiguity).

Items that were deemed clear and theoretically significant were retained unchanged for testing on the larger sample size.

A number of learners (n=42) who formed part of the greater sample took part in the pilot study. They completed the questionnaire that consisted of 91 items (excluding the section devoted to background and demographic information). The greatest challenge faced in the implementation of the questionnaire was the literacy level of the learners. The questionnaire was presented in the participants' second or third language (English), which could affect their understanding of the questions and therefore reduce the accuracy of the data. The pilot study provided insight into the difficulties that participants experienced in answering the questionnaire. The detailed reliability results are presented in Appendix D, which provides a detailed report on the comparison between the pilot and final study reliability analysis and a discussion regarding the items that were rewritten (16) and the items that were deleted (3).

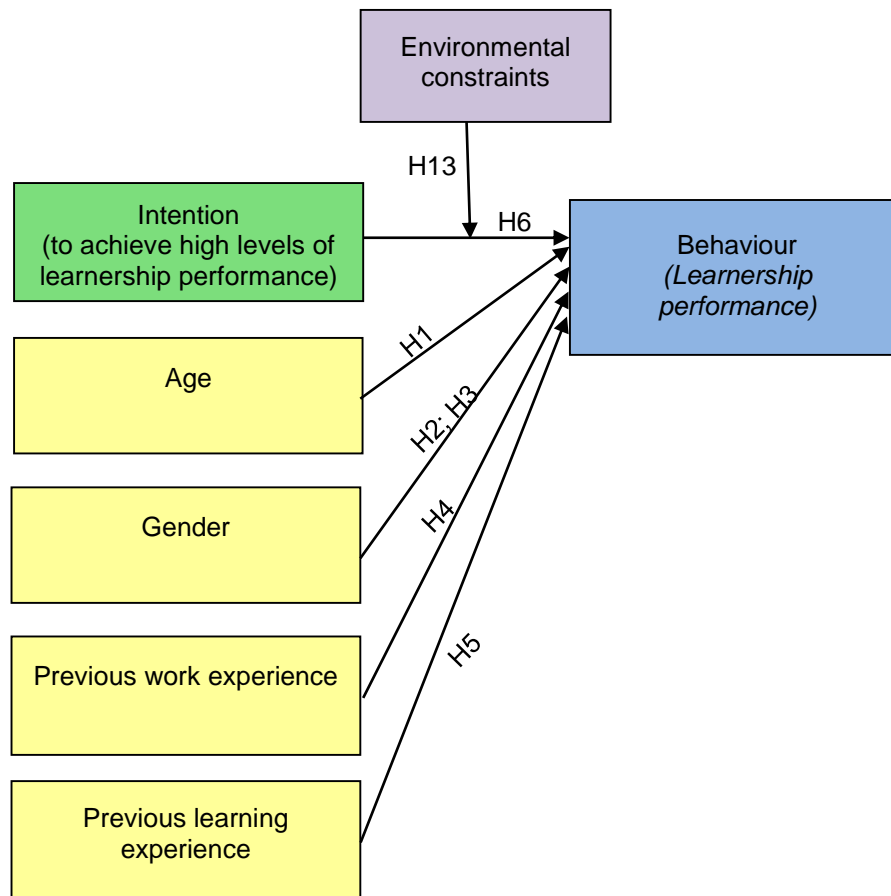
### **3.11 Phase 3: Implementation of the final questionnaire**

Ninety-five agricultural learners in the Western Cape and Gauteng completed the final questionnaire (119 items including items from the demographic section). The final questionnaire included the same sections as the pilot questionnaire, however the pilot study reliability analysis led to the reduction of the number of items (excluding the demographic information) from 91 to 88 (refer to Appendix B).

### **3.12 Adjustments required based on the final study sample size**

Given the complexity of the PMLP (refer to Figure 2.5) the preferred data analysis method would have been structural equation modelling (SEM) (Kelloway, 1998). The sample size of the final study unfortunately did not allow for the use of SEM and therefore it was decided to reduce the complexity of the model, by dividing the PMLP into two separate models. The separation of the PMLP into two reduces the complexity of the model, which unfortunately reduces the level of insight the study could have provided if the PMLP could be tested as one model. The two models that will however be tested are presented in Figure 3.1 and Figure 3.2 respectively.

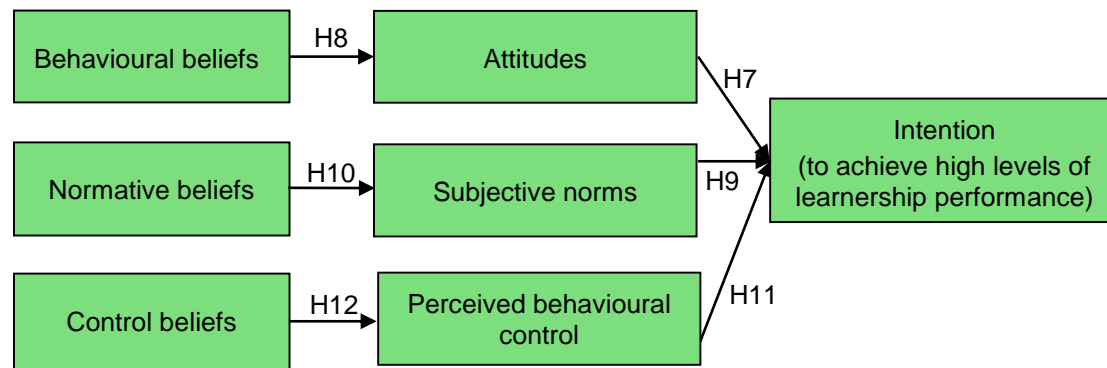




**Figure 3.1 Antecedents of learnership performance.**

Figure 3.1 presents the variables that will be tested in terms of their relationship to learnership performance. The variables that are hypothesised to influence learnership performance directly therefore includes intention (to achieve high levels of learnership performance), age, gender, previous work and previous learning experience. The moderating effect of environmental constraints is hypothesised to influence the relationship between intention and learnership performance.

Figure 3.2 presents the variables of the TPB as they relate to intention, which for the purposes of this study refers to the intention to achieve high levels of learnership performance.



**Figure 3.2** Antecedents of the intention to achieve high levels of learnership performance.

### 3.13 Hypotheses revisited

The hypotheses of the study are revisited (and indicated on Figures 3.1 and 3.2) in aid of comprehensiveness.

Hypothesis 1: Older learners perform better in learnerships than younger learners.

Hypothesis 2: Men are more likely to have access to learnerships than women.

Hypothesis 3: Men are likely to perform better in a learnership program than women.

Hypothesis 4: Learners with more work experience (relevant to the content of the learnership program) perform better in learnerships than learners with less learnership experience.

Hypothesis 5: Learners who completed more grades in school perform better in learnerships than learners who completed fewer grades.

Hypothesis 6: A strong intention to perform well in a learnership program leads to high levels of learnership performance.

Hypothesis 7: A strong positive attitude toward learnership performance leads to a strong intention to perform well in a learnership program.

Hypothesis 8: Behavioural beliefs influence intention, through the mediating variable of attitudes.

Hypothesis 9: Subjective norms that are highly in favour of learnership performance, lead to a strong intention to do well in a learnership program.

Hypothesis 10: Normative beliefs influence intention, through the mediating variable of subjective norms.

Hypothesis 11: High levels of perceived behavioural control (in favour of performing well in a learnership program) lead to a strong intention to perform well in a learnership program.

Hypothesis 12: Control beliefs influence intention, through the mediating variable of perceived behavioural control.

Hypothesis 13: A strong intention will lead to high levels of learnership performance, when low levels of environmental constraints are present.

### **3.14 Final questionnaire development and data analysis**

In addition to the reliability analysis and descriptive statistics analysis, the data was subjected to correlation analysis were also calculated (using STATISTICA 11), thereby investigating the significance of the relationships between variables as presented in the hypotheses.

According to Miles and Shevlin (2007, p. 20) a “... correlation is a measure of the extent to which two variable are linearly related”. Correlations therefore explain the measure to which an increase in one variable relates to the increase (or decrease) in another variable. The strength of the correlations are indicated using Cohen’s (1988) index of practical significance. According to this index a weak correlation falls in the category of  $r = \pm .10$  to  $r = \pm .29$ , a moderate correlation falls in the category of  $r = \pm .30$  to  $r = \pm .49$  and a strong correlation falls in the category of  $r = \pm .50$  to  $r = \pm 1.0$ .

The Sobel test was utilised to calculate the significance of the influence indirect variables have on the dependent variable through the effect of mediating variables. Preacher and Hayes (2004, p.718) describes the Sobel test as a “statistically rigorous” method of testing mediation hypotheses.

Baron and Kenny (1986) state that in order to investigate the impact that indirect variables have on a dependent variable through mediating variables it is required that a significant correlation exists between the mediating variables and the outcome variable (in this case intention). The variables underlying intention according to the TPB include three streams, each with an indirect variable (beliefs) and a mediating (direct) variable. It is therefore essential to confirm that the direct variable of each respective stream (attitudes, subjective norms and perceived behavioural control) correlates significantly with the variable of intention before testing the effect of the relevant indirect, or beliefs variable (refer to Figure 3.2).

### **3.15 Summary: Chapter 3**

The three phases of data gathering included both qualitative and quantitative elements. During phase one, qualitative data was gathered by means of individual interviews to elicit beliefs and assumptions held by individuals in the research population regarding learning. The data gathered during the individual interviews provided content for the development of the pilot questionnaire. The administration of the pilot questionnaire allowed for the refinement of the scales and items of the measuring instrument. The

third phase included the implementation of the refined questionnaire (N = 95). The following chapter includes detail regarding the data analysis and the discussion thereof.

## **CHAPTER FOUR**

### **RESULTS**

#### **4.1 Introduction: Chapter 4**

The focus of the previous chapter was on the methodology followed in this research study. The results derived from implementing the research methodology are therefore the focus of Chapter 4, as well as reporting on actions taken to address missing values. The research results are discussed with specific focus on the three phases of data gathering, namely individual interviews (phase 1), pilot study of the questionnaire (phase 2), and the final questionnaire (phase 3).

#### **4.2 Missing values**

Ritchie, Hahn and Moore (2003, p. 154) report that missing values of 5% and below has "... little effect" on the data. As the number of missing values did not exceed 5% the method chosen to address the missing values is imputation by matching. This method refers to the replacement of missing values with a value from a similar response pattern within the data set (Jöreskog & Sörbom, 1996). By implementing this method of replacing missing data, there is no reduction of the sample size.

#### **4.3 Individual interviews research results**

Individual interviews were employed to gather initial information (prior to the pilot study) regarding the underlying beliefs (behavioural, normative and control) of the learners regarding the learnership program. It also allowed for the investigation of the perceived environmental constraints that are prevalent to the sample group. The information gathered from the participants during this phase provided content for the statements that form part of the pilot questionnaire.

##### **4.3.1 Individual interviews results: Demographic information**

A total number of 11 learners from the agricultural sector participated in the individual interviews (seven men and four women). The ages of the learners were between 18 and 48 years. The predominant first language amongst this sample group is Afrikaans

(6), followed by Xhosa (4) and English (1). The majority of the group indicated that English was their second language. The work experience of the learners in this sample group ranges from 3 months to eight years. The average work experience is three years with Grade 5 the lowest grade completed (two learners) and Grade 11 the highest (one learner). Table 4.1 provides a summary of the educational background of learners who participated in the individual interviews.

**Table 4.1**

***Summary of the highest grade completed by learners of the individual interviews sample***

Highest grade completed in school	Number of learners
Grade 5	2
Grade 6	1
Grade 7	2
Grade 8	2
Grade 10	3
Grade 11	1

The educational backgrounds of the learners' parents were also determined. Learners indicated whether each parent did attend school and, if possible, indicated what the highest grade was that each parent completed in school. Eleven of the learners indicated that their mothers did attend school, with Grade 8 being the highest grade attained (one learner's mother). The responses related the fathers' education revealed that eight of the learners' fathers attended school, and the highest Grade completed was Grade 9 (two learners' fathers).

#### **4.3.2 Individual interviews results: Beliefs and environmental constraints**

The interview results reflect the themes of behavioural beliefs, normative beliefs, control beliefs and environmental constraints.

**Behavioural beliefs:** Learners answered questions related to their expected outcomes

of completing the learnership program (i.e. behavioural beliefs) and previous experience of training or learning to establish the difficulty level learners experienced, and to elicit the underlying motivation for participating in the training or learning intervention.

All learners indicated that participation in a learnership is “*good*” (vs. bad) and that they expect benefits to result from participation and successful completion. Statements such as “*It was easy to listen in class*”, “*I studied the books*” and “*If I do my homework I will be fine*” indicate that the behavioural belief amongst this agricultural sample is that learning is easy if one applies effort to listen in class, do homework and study the learning material required for tests. These learners have the conviction (based on prior experience) that if they work hard they will do well in the learnership program.

Learners expected that if they learn more about their work it would be advantageous in that they would be able to perform better in their jobs. Some learners also referred to the attainment of an NQF certificate if they were to complete the learnership program, which would make them feel proud of themselves and possibly help them if they apply for a job or a promotion.

**Normative beliefs:** The purpose of the questions in this section was to probe the learners’ normative beliefs in order to elicit whether they identified specific people or groups who would approve or disapprove of their participation in the learnership program.

When asked who would be “*happy for them*” when they use the opportunity to participate in the learnership program, mostly family members and significant others were mentioned. One learner indicated, “*My boss wants me to learn*”. However, parents who did not attend school and colleagues who did not get the opportunity to participate in the learnership program were regarded as non-supportive of the learner’s endeavour to complete the learnership program.



In both the pilot and final questionnaire, respondents had the opportunity to elaborate further on the normative beliefs related to the three most important individuals mentioned for example, mother, father, wife and sisters. Additional items were developed to indicate responses about beliefs (positive e.g. encouragement and negative e.g. jealousy) relating to the community, colleagues, manager and facilitator that could affect the successful completion of the learnership.

**Control beliefs:** Learners contributed to developing the control beliefs scale by responding to the question of whether they perceived success in the learnership program to be within their control. Responses such as *“If I choose to do it, it will happen”* indicate personal control. However, one respondent indicated that the unfamiliarity of the program content (difficulty level) makes judgement problematic/cumbersome. These responses lead to the development of an item regarding a learner’s preference for asking questions during the learnership program in order to regain control over the unfamiliar or difficult learning content.

Learners preferred to do the learnership program in their first language. This preference would indicate that learners feel more in control when presented with new concepts in a language they understand very well and therefore lead to the formulation of an item to elicit responses in this regard. Learners indicated that previous experience in the job already equipped them with a certain amount of knowledge about the content of the learnership program, and that this increased their confidence to succeed in the challenges the learnership program may pose.

The individual interviews illustrated that most learners were not considering the factors that may inhibit the control they have over their performance in the learnership program. When learners were asked if they needed anything (which they did not have) to succeed in the learnership program, many responded quickly by saying that they had everything they needed. The pilot questionnaire therefore included a question regarding to which degree learners feel that they have everything they require to succeed in the learnership program.

**Environmental Constraints:** Most respondents found it difficult to indicate any perceived hindrances in their environment that could negatively affect their success in the learnership program. This could be due to their limited experience in what the learnership program would require, as they had just embarked on the program at the time of the interview. At that point, they did not yet have assignments or tests that would require working or studying at home. One hindrance mentioned was family responsibilities, i.e. taking care of children at home, however most respondents did not foresee any constraints.

#### 4.4 Pilot and final study research results

The following sections present the results of the pilot and final studies.

##### 4.4.1 Pilot and final study: Descriptive statistics

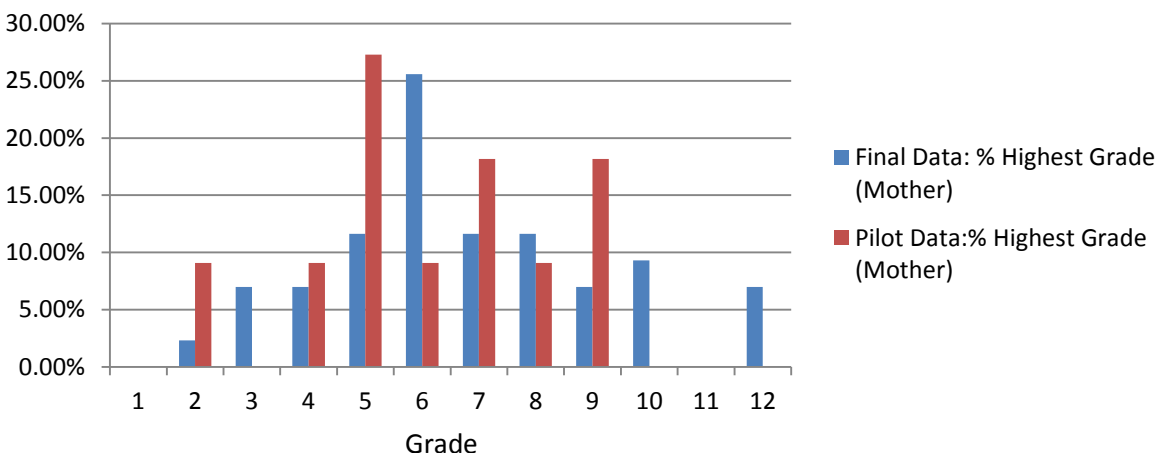
Table 4.2 contains the demographic profile of respondents participating in the pilot and final study. The two sample groups are similar in age, language and work experience.

**Table 4.2**

***Descriptive statistics of learners from the pilot and final questionnaire sample***

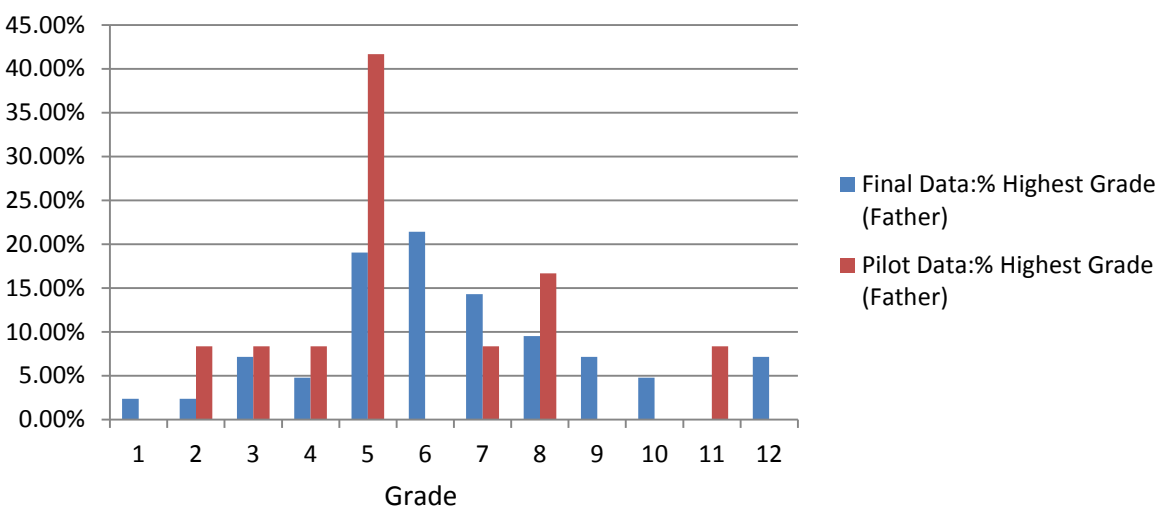
Descriptive measures	Pilot study	Final study
Number of participants	41	95
Percentage male	78%	54%
Percentage female	22%	46%
Youngest age	18 years	18 years
Oldest age	56 years	58 years
Average age	33 years	35 years
First language: English	5%	3%
Second language: English	97%	97%
Working experience	Shortest: 3 months	Shortest: 6 months
	Longest: 7 years and 8 months	Longest: 32 years
	Average: 7 years	Average: 5 years
Mother attended school	Yes: 66%	Yes: 65%
	No: 34%	No: 35%
Father attended school	Yes: 61%	Yes: 65%
	No: 39%	No: 35%

The educational level of respondents and of their parents can provide further insight into the disadvantage level of the participants. The following Figures illustrate the highest grade completed in school by their mothers (Figure 4.1), fathers (Figure 4.2), and learners (Figure 4.3).



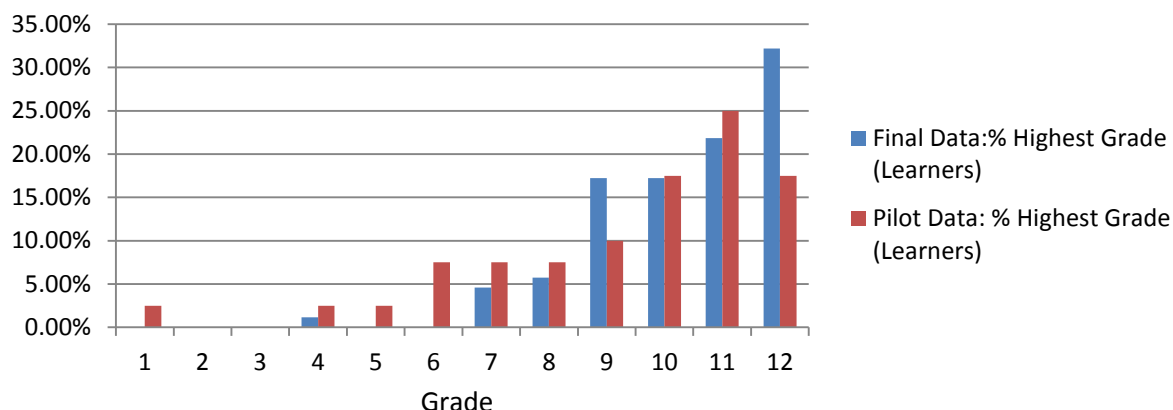
**Figure 4.1** Highest grade completed by learners' mothers.

For both the pilot and final study, the responses indicate that 35% of learners' mothers did not attend school, which leaves 65% of learners whose mothers did attend school.



**Figure 4.2** Highest grade completed by learners' fathers.

In the pilot study 39% of the learners indicated that their father did not attend school. This percentage dropped to 35% in the final study.

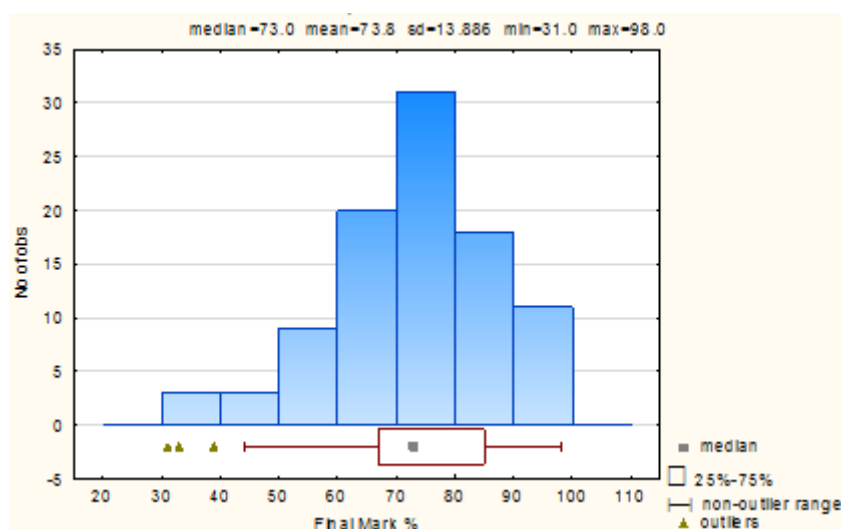


**Figure 4.3 Highest grade completed by learners themselves.**

It is evident that the participants in the study recorded significantly higher educational levels than their parents, with more than 50% of learners in the main study completing a qualification between grade 10 and 12.

#### 4.4.2 Learnership performance

The performance score (%) learners achieved in the final test of their learnership programs express learnership performance. Of the 103 learners who participated in the main study, eight learners did not complete the learnership program. Four of the eight learners were from farms that participated in the strike action in the Western Cape, which took place between 17 August 2012 and 4 December 2012 (CUSATO Press Statements, 2013a; CUSATO Press Statements, 2013b; News 24, 2013). The remaining four learners dropped out of the program for reasons unknown. The researcher considered allocating a final mark (learnership performance value) of 0% however the effect this would have in creating severe outliers would not contribute to the significance of the research results (Prof M. Kidd, personal communication, 4 March, 2013). These learners' data was excluded from further analysis leaving a sample size of 95. Figure 4.4 presents the learnership performance results in percentage values.



**Figure 4.4** Learnership performance results (final mark).

Four learners (4% of the sample), failed the final test of the learnership program and obtained a mark below 50%. The average score of the learners in this sample group was 74%.

#### 4.5 Pilot and final study: Reliability analysis

One of the objectives of this research study was to develop a reliable questionnaire to measure the variables theorised to contribute to learnership performance. The process of refining the questionnaire included a pilot study, of which the results informed possible improvements by deletion of and adjustments to poor items (refer to chapter 3 for the methodology followed). The reliability results of each scale illustrate a comparison between the results of the pilot questionnaire and the final questionnaire and are summarised in Table 4.3.

The results of the pilot questionnaire show two scales with poor reliability, namely behavioural beliefs and environmental constraints. The control beliefs scale only shows fair reliability. Even though a few items within the remaining scales did show room for improvement regarding their internal consistency results, the reliability scores for the

pilot study were acceptable on scale level. Items were re-written and adjusted for clarity (refer to Chapter 3 for the guidelines used).

The final questionnaire illustrates coefficient alpha scores above .70 (good reliability) for all scales except the environmental constraints scale, which shows only fair reliability with a score of .64, and subjective norms with a poor reliability score of .59. The coefficient alpha values for two of the scales, normative beliefs (combined) and intention indicate very good reliability ( $\alpha \geq .80$ ). Four of the remaining six scales show alphas above .70, which indicates good reliability. A discussion regarding the reliability results of the pilot and final questionnaires, as well as the corrective actions taken to improve the reliability of the measuring instrument is included in Appendix D.

**Table 4.3**

***Reliability analysis results summary: Pilot and final questionnaires***

Scale	Pilot questionnaire		Final questionnaire	
	Number of items	Cronbach's Alpha	Number of items	Cronbach's Alpha
Behavioural beliefs	6	$\alpha = .46$	6	$\alpha = .78$
Attitude	6	$\alpha = .83$	6	$\alpha = .77$
Normative beliefs: Combined	40	$\alpha = .92$	40	$\alpha = .81$
<i>Normative beliefs (1)</i>	8	$\alpha = .88$	8	$\alpha = .80$
<i>Normative beliefs (2)</i>	8	$\alpha = .89$	8	$\alpha = .89$
<i>Normative Beliefs (3)</i>	8	$\alpha = .85$	8	$\alpha = .85$
<i>Normative beliefs (col)</i>	4	$\alpha = .72$	4	$\alpha = .72$
<i>Normative beliefs (man)</i>	4	$\alpha = .80$	4	$\alpha = .80$
<i>Normative beliefs (fac)</i>	4	$\alpha = .73$	4	$\alpha = .73$
<i>Normative beliefs (com)</i>	4	$\alpha = .78$	4	$\alpha = .78$
Subjective norms	7	$\alpha = .72$	6	$\alpha = .59$
Control beliefs	10	$\alpha = .66$	10	$\alpha = .76$
Perceived behavioural control	5	$\alpha = .74$	5	$\alpha = .71$
Intention	10	$\alpha = .88$	10	$\alpha = .84$
Environmental constraints	7	$\alpha = .56$	5	$\alpha = .64$

#### 4.6 Final study: Mean scores and standard deviations

Appendix C presents the descriptive statistics of the main study, including the mean score and standard deviation per item and scale. The mean scores of the items range between 1.9 and 4.8, whilst the standard deviations range between 2.36 and 2.69.

#### 4.7 Correlation and regression analysis results

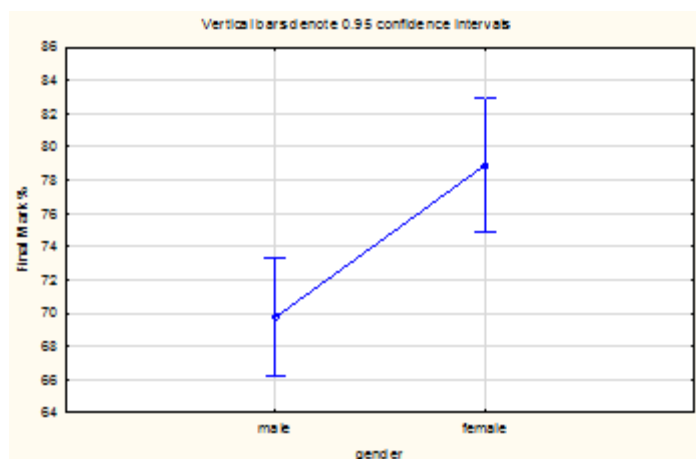
The following section will explain the correlation and regression results in relation to the hypothesised relationships between the variables in the Partial Model of Behaviour Prediction as depicted in Figures 2.5, 3.1 and 3.2.

##### 4.7.1 The relationship between age and learnership performance

The ages of learners ranged between 18 and 58 with a mean age of 35. Hypothesis 1 was rejected as no significant relationship was found between age and learnership performance ( $r = -.07$ ,  $p = .53$ ).

##### 4.7.2 The relationship between gender and learnership performance

Theoretically it was suggested that men were in a more privileged position to be granted the opportunity to participate in a learnership Program and that they would perform better than their female counterparts would.



**Figure 4.5** Comparison between male and female learnership performance.

The sample consisted of 53 men and 42 women (refer to Table 4.2). Hypothesis 2 is accepted.

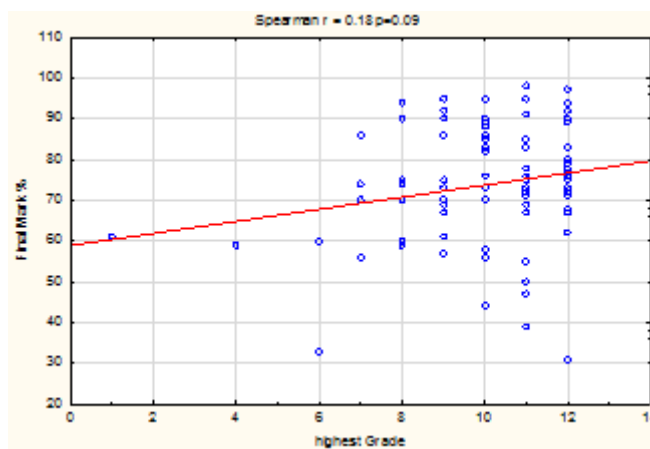
To test hypothesis 3, the learnership performance (average score achieved in the final test) of men and women were compared. Although the sample included more men than women, the average score achieved by men (70%) was significantly lower than the average score of women (79%) achieved in the final test. Hypothesis 3 is rejected.

#### 4.7.3 The relationship between previous work experience and learnership performance

Theory suggests that previous work experience in the field of the learnership program content increases the likelihood of high levels of learnership performance. The results show no significant correlation between previous work experience and learnership performance ( $p = .64$ ,  $r = .05$ ). Hypothesis 4 is rejected.

#### 4.7.4 The relationship between previous learning experience and learnership performance

The highest grade the learners completed in school illustrates the measure used for previous learning experience. The hypothesis that was tested suggests that previous learning experience will increase an individual's performance in the learnership program.



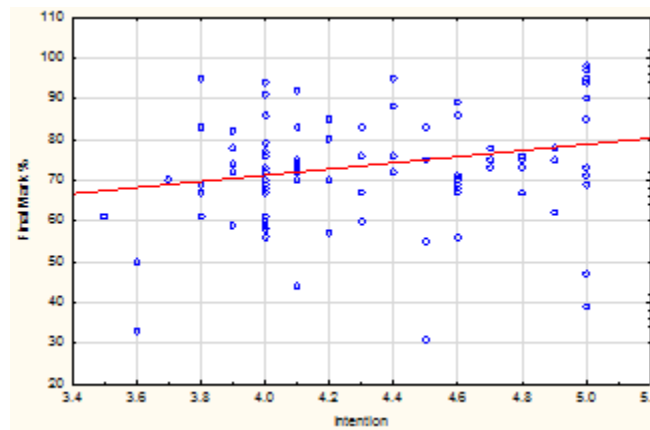
**Figure 4.6** 2D Scatter plot: Previous learning experience and final mark.



The results indicate a weak correlation of  $r = .21$  which is statistically significant ( $p = .047$ ). Hypothesis 5 is therefore accepted.

#### 4.7.5 The relationship between intention and learnership performance

A significant relationship was found between intention and learnership performance although the strength of the relationship was weak ( $r = .23$ ;  $p = .02$ ). Hypothesis 6 is therefore accepted.

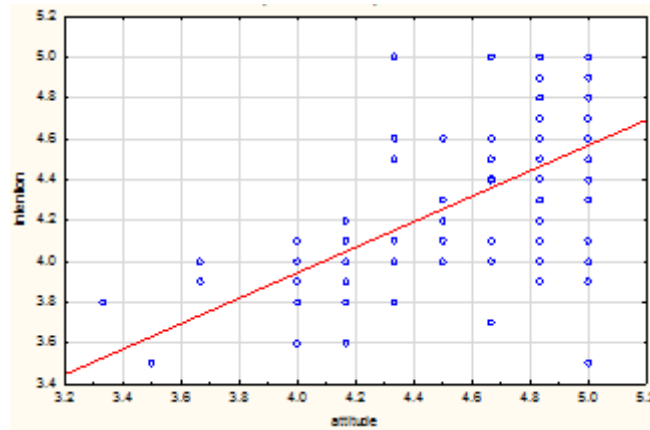


**Figure 4.7 2D Scatter plot: Final mark and intention.**

#### 4.7.6 The relationships between behavioural beliefs, attitudes, and intention

The hypothesis states that a strong positive attitude toward learnership performance leads to a strong intention to perform well in a learnership program. According to Cohen's index of practical significance (Cohen, 1988) a strong, significant correlation exists between attitudes and intention ( $r = .57$ ,  $p = .00$ ). Hypothesis 7 is accepted.

Attitude is therefore a suitable variable to test as a mediator in the relationship between behavioural beliefs and intention. Hypothesis 8 suggests that behavioural beliefs influence the intention, through the mediating variable of attitudes. The results of the Sobel test confirmed that behavioural beliefs stand in indirect relationship to intention through the mediating variable of attitudes ( $p = .00$ ).

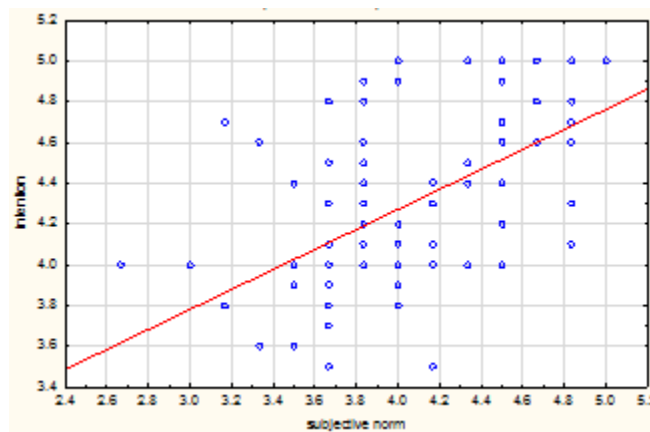


**Figure 4.8 2D Scatter plot: Attitude and intention.**

The results confirm hypothesis 8, given the significant mediating effect of attitudes in the relationship between behavioural beliefs and intention.

#### **4.7.7 The relationships between normative beliefs, subjective norms and intention**

The correlation results illustrate that the relationship between subjective norms and intention is significant ( $r = .56$ ;  $p \leq .05$ ). Therefore, hypothesis 9 is accepted.



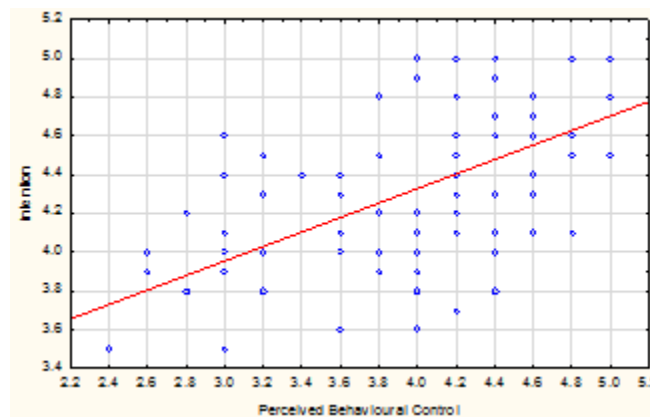
**Figure 4.9 2D Scatter plot: Subjective norm and intention.**

The results of the Sobel test indicate ( $p \leq .05$ ) that subjective norms are an effective mediator for the relationship between normative beliefs and intention. Therefore hypothesis 10 is accepted.

The results of the reliability test for the scale of subjective norms showed poor reliability ( $\alpha = .59$ ). The results with regard to hypothesis 8 and hypothesis 9 should therefore be interpreted with caution.

#### 4.7.8 The relationships between control beliefs, perceived behavioural control and intention

The correlation results for the relationship between perceived behavioural control and intention show that a strong significant relationship exists ( $r = .59$ ;  $p = .00$ ). The results therefore support hypothesis 11.

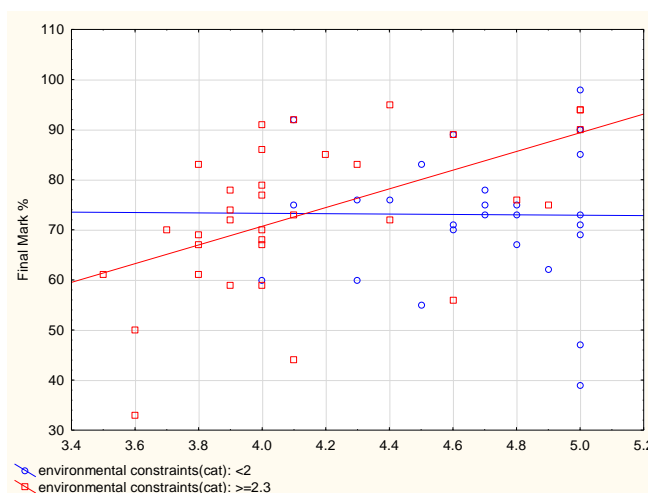


**Figure 4.10** 2D Scatter plot: Perceived behavioural control and intention.

Hypothesis 12 suggests that the variable of perceived behavioural control acts as a mediating variable between the variables of control beliefs and intention, however the Sobel test result did not show significant results ( $r = .62$ ;  $p = .06$ ). Hypothesis 12 is therefore rejected.

#### 4.7.9 The moderating impact of environmental constraints on the relationship between intention and learnership performance

The data analysis results showed a significant moderating effect of environmental constraints on the relationship between intention and learnership performance ( $p = .01$ ). The hypothesis refers to the nature of the moderating effect to reduce the strength of the relationship between intention and learnership performance. Given a mean score of 2.1 for this scale, two cut off points were selected to illustrate the different moderating effect of high levels of environmental constraints (response ratings  $\geq 2.3$ ) and low levels of environmental constraints (response ratings  $< 2$ ). Figure 4.11 shows two trends, of which the first illustrate the relationship between intention and learnership performance when moderated by low levels of environmental constraints (blue graph illustrating the moderating effect of low environmental constraints). The correlation between intention and learnership performance in the case of low levels of environmental constraints is insignificant ( $p \geq .05$ ). The second trend illustrates the relationship between intention and learnership performance when moderated by high levels of environmental constraints (red graph illustrating the moderating effect of high environmental constraints). This correlation is significant ( $p \leq .05$ ). The results therefore contradict hypothesis 13 and it is therefore rejected.



**Figure 4.11 2D Scatter Plot: The relationship between intention and learnership performance, moderated by environmental constraints.**

#### **4.8 Summary: Chapter 4**

The focus of this chapter was to report the results obtained in the three phases of data gathering. The first phase of data gathering included qualitative data, which provided input to the formulation of items in the scales of behavioural beliefs, normative beliefs, control beliefs and environmental constraints. The reliability results informed the improvement of the questionnaire. The results of the various relationships as proposed in the partial model of behaviour prediction were presented. The final chapter will include a discussion of the data analysis results, significant findings, practical implications, limitations and recommendations for future research.

## **CHAPTER FIVE**

### **DISCUSSION, IMPLICATIONS AND CONCLUDING REMARKS**

#### **5.1 Introduction: Chapter 5**

The objective of the research study was to investigate the various factors that could influence the learnership performance of learners in the agricultural sector to further the understanding of learnership performance in the agricultural sector of South Africa.

The focus of the first chapter was to provide insight into the contextual elements related to this study such as the challenges individuals from previously disadvantaged communities face. This provided a view of the psychological components related to poverty, as well as the realities of limited (relevant) job opportunities for individuals who find themselves in the previously disadvantaged demographic. The impact of these factors explains not only the immediate consequences but also the ripple effect that psychological factors have on next generations. The emphasis was on the role of learning in creating empowerment and introduced learning as a tool of empowerment that could address the negative cycle of poverty.

Chapter 2 investigated the theoretical perspectives posed in literature regarding the influence of demographic variables (age, gender, previous work and learning experience and environmental constraints) on learning performance. The variables included in the TPB (behavioural beliefs and attitudes, normative beliefs and subjective norms as well as control beliefs and perceived behavioural control) were discussed together with the postulated relationships with learnership performance.

The third chapter explained the methodology followed to gather the data required for this study. The three phases of data gathering were as follows: individual interviews, pilot test of the research questionnaire and the final implementation of the research questionnaire. The analysis of data was presented in chapter four.

The purpose of this chapter is to discuss the research findings and the practical implications of the results. It also presents the limitations and recommendations for future research.

## **5.2 Limitations of the study**

Notwithstanding the insight that the results of this study provided into the factors underlying learnership performance, the limitations regarding geographical location of the sample group, sample size and the measuring instrument deserve mention.

The nature of the variables included in the partial model of behaviour prediction required the completion of the three data gathering phases within stringent timelines to ensure enough time for learners to act according to their recorded intentions. The geographical locations of the learners participating in this study posed challenges on the timelines as the gathering of data required more time than initially expected. This had a negative effect on the sample size as the final questionnaire could not reach more learners within the given timelines.

The sample size of the main data set included 95 learners and therefore an insufficient number of respondents for the envisioned statistical procedures. The PMLP could not be tested by means of SEM due to the constraints of the sample size.

The measuring instrument developed specifically for the purposes of this study delivered six scales with acceptable reliability (behavioural beliefs, attitudes, normative beliefs, control beliefs, perceived behavioural control, age, gender as well as previous work and learning experience). The subjective norm scale however indicated poor reliability whilst the environmental constraints scale indicated fair reliability.

## **5.3 Discussion and conclusions regarding the relationships between variables**

A variety of theoretically based hypotheses reflects the focus of the research study. The research results confirm some of the hypotheses whilst contradicting other hypotheses.

Table 5.1 presents a summary of the rejected and accepted hypotheses, where after a discussion regarding the results follow.

### **5.3.1 The relationship between age and learnership performance**

Singleton (2010) reports that older learners showed higher levels of learnership performance (agriculture sector specific research). The data analysis results of this study however do not support this hypothesis, as no significant relationship was found between age and learnership performance in this study ( $r = -.07$ ,  $p = .53$ ). Possible reasons for the insignificant relationships could be that the agricultural workers that younger learners and older learners both have different advantages and disadvantages in terms of participating in a learnership program which creates an equal playing field. The advantage of younger individuals in terms of speed in grasping new concepts (Charness, Kelley, Bosman, & Mottram, 2001) could be equal to the advantage of older learners related to their level of work experience that relates to the content of the learnership program (Soederberg, Stine-Morrow, Kirkorian & Conroy, 2004).

### **5.3.2 The relationship between gender and learnership performance**

Gender is one of the demographic constructs that form part of two hypotheses included in the partial model of behaviour prediction and state that men have preferential access to learnership programs (hypothesis 2) and men show higher levels of learnership performance when compared to women (hypothesis 3). Hypothesis 2 is supported by the research results (54% male and 46% female participants). Hypothesis 3 is however rejected as females achieved a higher average in their final performance mark (learnership performance) than men. The Quarterly Labour Force Survey of Quarter 2 in 2012 (Statistics South Africa, 2012) shows that the South African Agricultural workforce population comprises of 438 000 men and 201 000 women in terms of gender. The sample composition in terms of gender could therefore be viewed as a reflection of the agricultural workers' gender proportions as having more men than women.



**Table 5.1*****Summary of research hypotheses and data analysis***

Hypothesis	Research result	Accept/ reject hypothesis
Hypothesis 1: Older learners perform better in learnerships than younger learners.	$r = -.07$ $p = .53$	Reject
Hypothesis 2: Men are more likely to have access to learnerships than women. % Male participants : % Female participants	56% 44%	Accept
Hypothesis 3: Men are likely to perform better in a learnership program than women. Average Learnership performance of women: Average Learnership performance of men:	79% 70%	Reject
Hypothesis 4: Learners with more work experience (relevant to the content of the learnership program) perform better in learnerships than learners with less learnership experience.	$r = .05$ $p = .64$	Reject
Hypothesis 5: Learners who completed more grades in school perform better in learnerships than learners who completed fewer grades.	$r = .21^*$ $p = .0477^*$	Accept
Hypothesis 6: A strong intention to perform well in a learnership program leads to high levels of learnership performance.	$r = .23^*$ $p = .02^*$	Accept
Hypothesis 7: A strong positive attitude toward learnership performance leads to a strong intention to perform well in a learnership program.	$r = .57^*$ $p = .00^*$	Accept
Hypothesis 8: Behavioural beliefs influence in the intention, through the mediating variable of attitudes.	$p = .00^*$	Accept
Hypothesis 9: Subjective norms that are highly in favour of learnership performance, lead to a strong intention to do well in a learnership program.	$r = .56^*$ $p = .00^*$	Accept
Hypothesis 10: Normative beliefs influence intention, through the mediating variable of subjective norms.	$p = .00^*$	Accept
Hypothesis 11: High levels of perceived behavioural control (in favour of performing well in a learnership program) lead to a strong intention to perform well in a learnership program.	$r = .59^*$ $p = .00^*$	Accept
Hypothesis 12: Control beliefs influence in the intention, through the mediating variable of perceived behavioural control.	$p = .06$	Reject
Hypothesis 13: A strong intention will lead to high levels of learnership performance, when low levels of environmental constraints are present.	$p \geq .05$	Reject

Note: \* Statistically significant ( $p \leq .05$ ).

The expectation was that women would experience social pressure to be mainly responsible for caring for children and their homes (Mandela, 1993), and that this pressure would affect the learnership performance of women negatively. This expectation relates to the gender assumption that men go to work and develop their knowledge and skills to grow in their careers (Mandela, 1993).

The results of this study however showed that women achieved a higher average learnership performance marks than their male counterparts. This could indicate that the social pressure on women to fulfil a single role as the main caretaker at home has shifted to allow for a dual role of caretaking leaving more time to spend on learning activities. Mason (2003) explains that single mothers face the responsibility of childcare and typically lack sufficient resources. Single mothers who live in areas that are more rural have additional challenges due to the limited choice of jobs and due to fewer work opportunities being available in rural areas (Simmons, Braun, Wright & Miller, 2007). It could also be postulated that the pressure single mothers experience to provide financially for their children could increase the pressure to perform well in training programs as increasing their skills could lead to opportunities for promotion. A single mother would be under more pressure than a mother with husband or life-partner who could contribute to the family's income. It is interesting that the research results show that approximately 55% of the female learners who have children are single mothers (who are not married and do not live with a life partner). Of the male learners who do have children, 13% are single fathers (who are not married and do not live with their life partner), thus supporting the notion that single mothers drive to be successful could have contributed to the rejection of hypothesis 3.

### **5.3.3 The relationship between previous work experience and learnership performance**

The average number of years that learners (of the final study sample group) have worked in the agricultural industry is 8 years, with a standard deviation of 7 years. The average work experience is therefore much lower than expected especially when

considering the variance regarding the age of learners in the sample. The average age of learners was 35, with a youngest age of 18 and an oldest age of 58. The expectation was that the alignment between the learning material and content of the work these learners do on a daily basis (Singleton, 2010) would benefit learners with more working experience in the field of agriculture. This however was not the case and it could be postulated that the age and experience distribution of the sample did not benefit them in the learnership program.

#### **5.3.4 The relationship between previous learning experience and learnership performance**

Education is one of the vehicles for empowerment, general improvements of welfare as well as economic growth (Statistics South Africa, 2011). It was therefore hypothesised that the higher the level of education with which learners enter the learnership program the better their chances for higher levels of learnership performance. The results of this study confirmed a significant positive relationship between previous learning experience and learnership performance ( $p \leq .05$ ,  $r = .21$ ). The results therefore support the findings of Oulette and Wood (1998) who contend that past behaviour is the best predictor of future behaviour, and therefore implicate that success in education at school relates to success in adult learning programs.

#### **5.3.5 The relationship between intention and learnership performance**

The analysis results show a weak but significant positive relationship, confirming the hypothesis ( $r = .23$ ;  $p = .02$ ). The hypothesis suggested that an increase in the intention to perform well in a learnership program stands in relationship with an increase in learnership performance. These research results support the findings of Davis and Ajzen (2002) who reports that intention significantly predicts learning performance. Although the strength of this correlation is weak, the statistical significance indicates that the positive relationship does exist. Based on the research findings an increase in the intention to achieve high levels of learnership performance would implicate an increase in actual learnership performance. The research findings therefore support the

notion that an intervention targeted to enhance learners' intention to achieve high levels of learnership performance could increase actual learnership performance.

### **5.3.6 The relationship between behavioural beliefs, attitudes, and intention**

A strong significant positive relationship exists between attitudes and intention ( $r = .57$ ;  $p = .00$ ). This indicates that learners with a positive attitude towards learning formulate stronger intentions to perform well in the learnership program. The results therefore support the findings of Davis and Ajzen (2002) who applied the TBP to a study of academic performance. Their results indicated that positive attitudes towards learning increases the intention of learners to perform academically and therefore increase the likelihood of individuals performing well in a learning intervention (Davis & Ajzen, 2002).

The TPB suggests that attitudes act as a mediator in the relationship between behavioural beliefs and intention (Armitage & Conner, 1999). The results of the study indicated a significant indirect effect of behavioural beliefs on intention through the mediation of attitudes ( $p < .05$ ). These results confirm the significant role behavioural beliefs have to play in the development of intentions in favour of learnership performance. Mulder and Bayer (2007) suggest that the expectations one holds regarding the outcomes of learning (behavioural beliefs), are based on previous learning experiences. This confirms that one could increase learnership performance by optimising the behavioural beliefs learners hold about learning indirectly, through the function of positive attitudes toward learning.

### **5.3.7 The relationship between normative beliefs, subjective norms and intention**

A significant correlation of .56 illustrated the relationship between subjective norms and intention, therefore confirming hypothesis 9. This shows that learners develop their intention to perform well in a learnership program based on their subjective norms, which Ajzen (1991) describes as the motivation to comply with the norms of important referents in their social environments. The likelihood therefore exists that one could increase the intention of learners to perform well in a learnership program, by increasing their subjective norms that are in favour of learnership performance. It is however

important to note that the reliability result for this subscale ( $\alpha = .59$ ) falls but marginally within the poor range ( $\alpha < .60$ ).

The mediating effect of subjective norm between the normative beliefs and intention was also found to be significant ( $\alpha < .05$ ), thereby confirming hypothesis 10. These results support the findings of Timmer and Kahle (1983) who reported that the participation in training activities is deemed socially acceptable. The significant mediating effect of subjective norms regarding the relationship between normative beliefs and intention therefore shows that learners choose to comply with social pressure of performing well in a learnership program. The significant research results therefore provide evidence that one could increase a learner's performance in a learnership program by creating a social support system for learners, if learners choose to comply with the norms of the their support system.

#### **5.3.8 The relationship between control beliefs and perceived behavioural control**

A strong positive relationship existed between perceived behavioural control and intention ( $r = .59$ ;  $p = .00$ ). The research results support Broonen's (2001) description of the relationship between perceived behavioural control and a specific. Thus if learners develop an intention to perform well in a learnership program (which increases when learners have sufficient levels of self-efficacy and perceived controllability) it could lead to higher levels of learnership performance.

The hypothesis of the indirect effect control beliefs have on intention through the mediating effect of perceived behavioural control was however found to be insignificant ( $p = .06$ ). These results contradict the findings Kasprzyk, Montaño and Fishbein (1998) who confirmed a significant indirect effect of control beliefs on intention (as cited in Glanz, et al., 2008). A possible reason for these results could be that the items developed for this scale do not describe specific control beliefs of the participants of the sample group accurately. Research findings of Armitage and Conner (1999) could explain the unsuccessful mediating effect of perceived behavioural control in the relationship between control beliefs and intention in that control beliefs showed a strong

correlation to one subcomponent of perceived behavioural control (self-efficacy), but a weak correlation to the other (controllability).

### **5.3.9 The moderating impact of environmental constraints on the relationship between intention and learnership performance**

The moderating effect of environmental constraints on the relationship between intention and learnership performance is significant. The presence of the moderating effect did however show dependence on the condition of high levels of environmental constraints. The results therefore indicated that the correlation between (a strong) intention and high levels of learnership performance is evident in the cases where learners experienced environmental factors that inhibit their learnership performance. These results contradict the findings by Fishbein (2000) who reports that the presence of environmental constraints will prevent individuals from engaging in the outcome behaviour despite their intention to perform the behaviour. However, in this study, learners who do not face challenges regarding their environmental circumstances do not show increased learnership performance despite an increase in the intention to perform well. This interesting finding shows that learners who find themselves in difficult environmental circumstances depend more on their internal drivers of intention (behavioural beliefs, attitudes, normative beliefs, subjective norms, control beliefs and perceived behavioural control and intention) to perform well in the learnership. This could indicate that some individuals from previously disadvantaged communities have adopted a strong will to succeed in the face of daily challenges, whilst learners with more comfortable environmental circumstances are less driven when faced with adversity.

Learners in the agricultural sector typically form part of communities that were previously disadvantaged and therefore face daily challenges in their work and home lives. The items for this scale were designed to elicit the environmental factors that could inhibit learnership performance namely: responsibilities learners have at home regarding children, distractions such as noise and insufficient lighting at night to study or do assignments.

As a strong intention to learn shows a significant correlation with learnership performance in the presence of challenging environmental factors, the development of the internal drivers of intention could improve learnership performance. Developing a strong intention is therefore essential to increase the likelihood that learners would make the best of skills development opportunities. A strong intention, and the successful completion of skills development opportunities will in turn assist these individuals to overcome poverty and create better futures for themselves.

#### **5.4 Practical implications of the study: Developing learners' intentions**

Following the discussion of the research results is a discussion regarding the practical implications of the study as it relates to the selection of learners who would be more likely to achieve high levels of learnership performance. An intervention is recommended to develop and enhance the intention to succeed in a learnership program.

##### **5.4.1 Selection of learners to participate in learnerships**

An understanding of the specific factors that significantly influences learnership performance would inform possible ways of selecting learners who are more likely to perform well in the learnership. The results of this research study clearly showed that neither age nor previous work experience significantly influenced learners participating in learnership programs. Learners of all ages should therefore have equal opportunity to participate in learnership programs. Contrary to the expectation, previous experience in the work that relates to the content of the learnership program was not necessarily beneficial, and was not a significant factor that directly influenced learnership performance. New as well as experienced staff should therefore be considered equally, when opportunities for learnership programs become available.

Learners who completed higher grades in school showed higher levels of learnership performance. This confirms that previous learning experience is beneficial when entering into a learnership program. But instead of using previous learning experience or academic background as a factor to exclude individuals from learnership programs,

these criteria should rather indicate an opportunity to provide additional support to learners who left school earlier. Facilitators or managers could provide additional support (for e.g. exercises, mentoring and tutoring) for such learners to enhance their understanding of the learnership material and to increase the probability of success in the learnership program. Underprepared learners could benefit from additional support from the facilitator to ensure that they do not fall behind in their understanding of the learnership material. Additional attention from the facilitator will assist these learners to prepare them for tests or practical assignments regarding the interpretation and answering of questions.

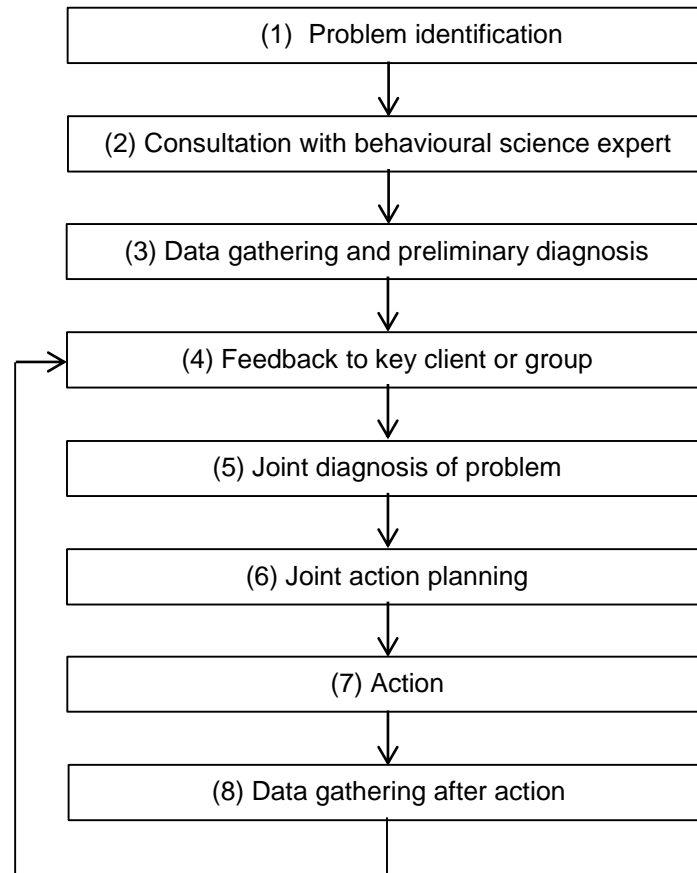
#### **5.4.2 An intervention aimed to develop and enhance intention**

The significant relationship between intention and learnership performance confirms that a strong intention to perform well in a learnership program improves the chances of a learner's behaviour conforming to those intentions (for participants in this study). In order to improve the likelihood of all learners succeeding and performing well in learnership programs, learning facilitators, supervisors or managers should encourage learners to form strong intentions regarding learnership performance by guiding learners to identify the factors that influence their intention to perform well in learnership programs. A focused intervention is one way to guide the development and enhancement of learners' intention.

The action research model of Cummings and Worley, (2008) could provide structure for interventions that aim to enhance learners' intentions (refer to Figure 5.1) as the phases can be adapted and simplified for practical implementation in the case of learnerships.

The content of this research study is deemed to fulfil the objective of phases one to four in the action research model (i.e. 1: Problem identification, 2: Consultation with behavioural science expert, 3: Data gathering and preliminary diagnosis, 4: Feedback to key client or group).



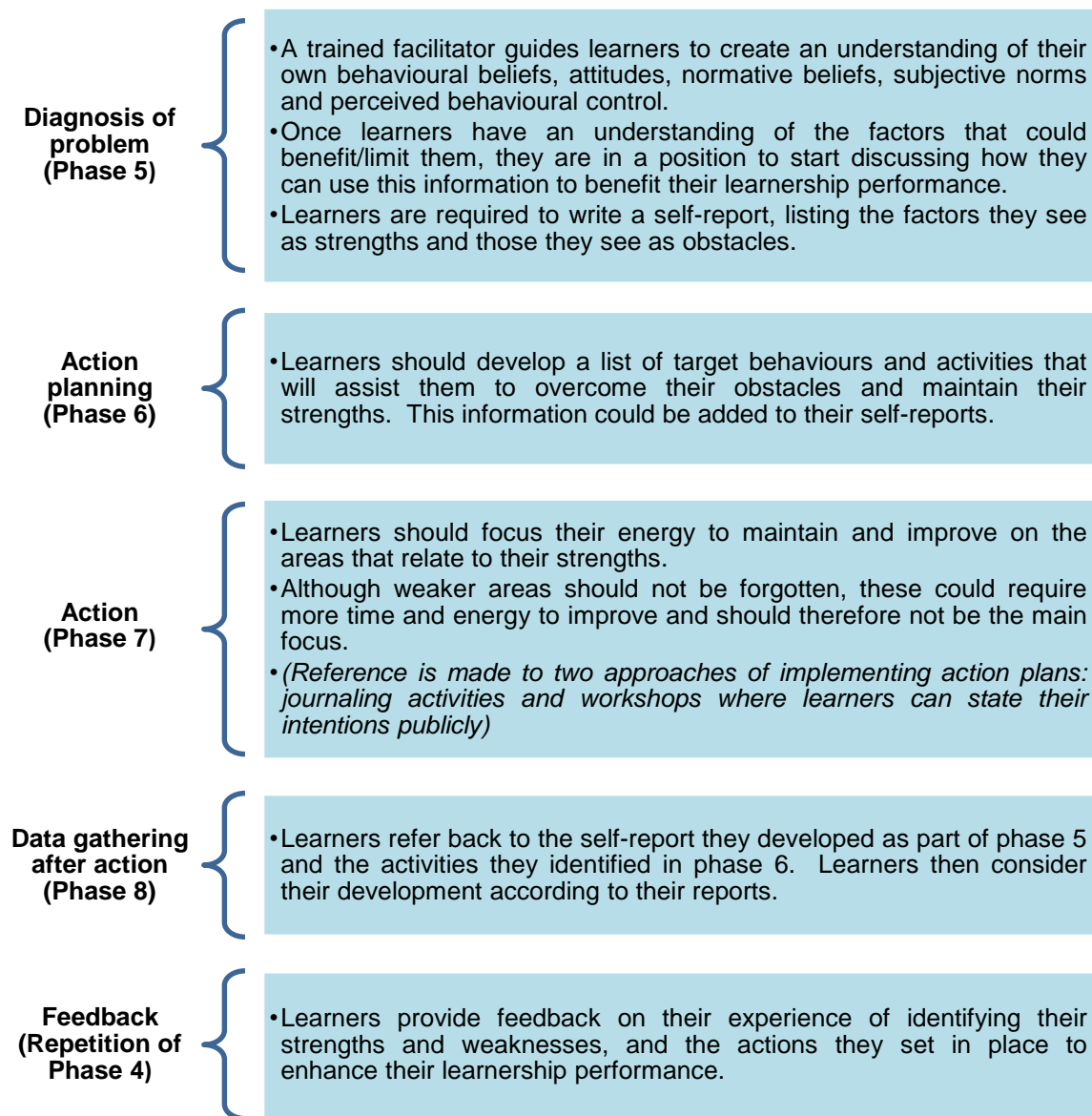


**Figure 5.1 Action research model.**

(Cummings & Worley, 2008, p. 25)

The contribution of this study is extended to include various practical recommendations and activities that are specifically relevant for the employer, employee, learnership coordinator and AgriSETA.

Figure 5.2 provides a set of activities to enhance learners' intention to perform well in a learnership program. Phase seven requires learners to take action (according to the plans they developed) and reference is made to two approaches that could be followed in this regard.



**Figure 5.2: Activities of the learnership performance intervention as they relate to the phases of the action research model.**

Journaling exercises and interactive workshops are therefore briefly discussed in the following sections as two alternative approaches to implement and follow through on their action plans.

**Journaling activities:** Gollwitzer (1999) emphasises the important role that managers, facilitators, colleagues, family or friends can play to motivate individuals to move from

intention to behaviour. He proposes that learners should be confronted with questions related to how, when and where they will carry out their intentions on a daily, weekly and monthly basis. This exercise involves reflective practice where, for example, learners regularly write down practical ways to progress from intention to actual behaviour (learnership performance). Organisations can provide learners with journals that they can use specifically to track their journey of developing the internal drivers to succeed in their learnership programs. Learners should engage in bi-weekly journal activities where they continue to examine the causes underlying the challenges they face in the learnership program and consider (as well as document) possible solutions to overcome their challenges.

**Interactive workshops:** An alternative approach to the journaling activities is to encourage learners to state their intentions publically. Voicing intentions publically has been confirmed to lead to the strengthening of intentions (Braver, 1996; Cialdini, 2001; Kiesler, 1971). Such an explicit form of commitment is as effective as implementation intentions according to Ajzen, Czasch and Flood (2009). The implementation of this approach involves short workshop sessions which the training facilitator or manager can facilitate on a monthly or quarterly basis. The short workshop would typically consist of learners providing feedback on the challenges they experience in achieving success in the learnership program. Learners could spend time thinking collaboratively about solutions to address these challenges.

The objective of implementing either one of these approaches are that learners achieve an understanding of their beliefs and personal convictions in workshops and that they purposefully investigate their individual approaches to participating in a learnership program. This could assist learners to overcome the individual barriers they may have such as negative attitudes or failure to believe in their own ability to succeed. An understanding of these internal barriers and a planned approach to overcome them could increase their intention to perform well in a learnership program. Following the successful achievement of learnership performance, these learners could be regarded

as role models who encourage their colleagues and community members to overcome their individual challenges and reach for their goals.

## 5.5 Recommendations for future research

The following recommendations for future research are suggested based on the results of this research study.

- The application of the measurement instrument to a larger sample will enable a comprehensive statistical analysis of the PMLP using SEM. The benefits of SEM include amongst others the ability to test models, factor analysis, multiple regression, and the effects of latent independent and latent dependent variables (Berry, 2010; Hair, Black, Babin, Anderson & Tatham, 2006). The testing of the total PMLP model on a larger sample should contribute to the understanding of the complexity of the phenomenological network underlying learnership performance and generate further hypothesis that could strengthen the body of knowledge on learnership performance.
- The integrative model of behaviour prediction (Fishbein, 2000) shows additional relationships between variables (refer to Figure 2.4) that fell outside the delineation of this study. Fishbein (2000) argues that a number of the variables included in this study could have a direct impact on behaviour (over and above the indirect relationship to learnership performance). Various other researchers postulate a direct relationship between learning performance and attitude (Grewe, Ukpere & Rust, 2012), and between learning performance and self-efficacy (Zimmerman, 2000). Self-efficacy is a sub-dimension of perceived behavioural control. For the purpose of this study, the TPB variables were kept intact as they appear in this model. These direct relationships could be investigated in future studies.
- The present study explored the value of demographic variables (age, gender, previous work experience and previous learning experience) in relationship to learnership performance. The integrative model of behaviour prediction by

Fishbein (2000) argues the value of demographic variables in relation to underlying beliefs (behavioural, normative and control beliefs) and the influence on specific behaviours. Future research could shed light on the role of demographic variables in the formation of underlying beliefs and resultant intentions and behaviours.

- Research done by Sheeran, Orbell and Trafimow (1999) investigated the stability of intention to learn by assessing intention twice over the period of a few weeks. The results indicated that a stronger correlation between intention and behaviour was found for learners with stable intention ( $r = .58$ ) compared to learners with unstable intentions ( $r = .08$ ). Future research could include measuring intention stability throughout the learning process as this could provide more insight into the strength of the correlation found between intention and behaviour (learnership performance) in this study.

In this chapter, the research results were summarised and reviewed in terms of the research objectives. Notwithstanding the limitations of the smaller than expected sample size, this study contributes to our understanding of learnership performance of agricultural workers. The findings and implications of this study provide the AgriSETA and employers in the agricultural sector with ways to engage with learners participating in learnership programs to increase learner success. The study also includes recommendations regarding possible research studies that could provide further insight into learnership performance.

## **5.6 Concluding remarks**

One of the most thought-provoking finding of this study is that in the absence of environmental constraints, learners show equal learning performance whether they have strong or weak intentions to perform well in a learnership program. However, in the presence of environmental constraints, learners with a strong intention to succeed showed higher levels of learnership performance than those with weaker intentions. Furthermore, 55% of women participating in this study, who have children, are single

mothers. These women achieved higher learnership performance results than men, despite the challenges of working full time, participating in a learnership program and raising children as a single parent. Given the characteristically challenging environmental factors that most individuals from previously disadvantaged communities face, the results of this study supports the importance of guiding learners to develop strong intentions to learn.

The significant force that drives and empowers individuals to succeed is intention. The agricultural learners who take up the challenge to succeed in the learnerships could break the cycle of poverty, despite their challenging circumstances.

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## APPENDIX A

### INDIVIDUAL INTERVIEW GUIDE

#### Pre-learnership questions

Number	Question (probing tips)
1	What will happen if you do the learnership program (what are your expected outcomes)?
2	Why can it be good for you to do the learnership program (how will it help you)?
3	Can it be bad for you to do the learnership program (if so why)?
4	Who are the important people in your life (think about the people you would like to be happy about what you do, or the people you do not want to disappoint)?
5	When you think about the people you mentioned above, who of them will be happy that you are doing the learnership program (who will not be happy that you are doing the learnership program)?
6	If you could choose two of the people you mentioned in question four that are like “examples” for you, who are they? Who are the two people you would like to be like and why?
7	What will make it possible or easy for you to complete the learnership program successfully?
8	Is it in your hands, or in your control, to do well in the learnership program? Please explain your answer.
9	Can you think of something that will make it difficult for you, or stand in your way to do very well in the learnership program?
10	Explain the environment where you live and how you think this will make it difficult or easy for you to do well in the learnership program.

## APPENDIX B

### FINAL QUESTIONNAIRE

#### Questionnaire: Section A

Please fill your details in below:

No	Personal detail	Response
1	Name	
2	Surname	
3	Gender (Male / Female)	
4	Age	
5	Ethnic Group (Black / Coloured / Indian / White / Other)	
6	First Language	
7	Second Language	
8	Are you married (Do you live with your life partner)	
9	Do you have any children? (Yes / No)	
10	If yes, how many children do you have?	
11	Where do you live (in what area)?	
12	What are the walls of your house made of? (Zink / Wood / Bricks)	
13	Do you live in the same house as your Mother? (Yes / No)	
14	Do you live in the same house as your Father? (Yes / No)	
15	What is the highest Grade you finished in school? (1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12)	
16	Did you complete another program, diploma or degree? (Yes / No)	
17	If yes, write down the name of the program:	
18	What job do you do?	
19	How many years / months of experience do you have in your job?	
20	Did your Mother go to school? (Yes / No / I don't know)	
21	If yes, what is the highest Grade she finished in school? (1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12)	
22	Does your Mother work now? (Yes / No / I don't know)	
23	If yes, what work does she do?	
24	Did your Mother work before? (Yes / No / I don't know)	

## Questionnaire: Section A (Continues)

No	Personal detail	Response
25	If yes, what work did she do before?	
26	Did your Father go to school? (Yes / No / I don't know)	
27	If yes, what is the highest Grade he finished in school? (1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 11 / 12)	
28	Does your Father work now? (Yes / No / I don't know)	
29	If yes, what work does he do?	
30	Did your Father work before? (Yes / No / I don't know)	
31	If yes, what work did he do before?	

## Instructions: Section B

In the blocks below there are smiley faces that you can choose from, to describe how you feel.



Strongly Disagree  
(No! Not at all)



Disagree  
(No)



Don't Agree or  
Disagree  
(Not Yes or No)



Agree  
(Yes)



Strongly Agree  
(Yes! Definitely)

## Here is an example of how to answer the questions:

Below is an example of how to use the smiley faces to answer a question. There will be a question that you should read, then you can make a cross under the smiley face that will show the answer you want to give to the question that you read.






Question					
Do you like to play soccer?	<del>Strongly Disagree</del>	Disagree	Don't Agree or Disagree	Agree	<del>Strongly Agree</del>

If you make a cross in this block, you show that your answer to the question is definitely a certain *no*, and that you do *not* agree at all.

If you make a cross in this block, you show that your answer to the question is definitely a certain *yes*, and that you *do* agree *strongly*.

### Try answering some questions on your own






- Read each question below, and answer the question by making a cross under the smiley face that shows how you feel.
- Read each question carefully and choose *only one* answer.

Question					
Is it easy for you to play soccer?	Strongly Disagree	Disagree	Don't Agree or Disagree	Agree	Strongly Agree
Will your friends be angry with you if you play soccer very well?	Strongly Disagree	Disagree	Don't Agree or Disagree	Agree	Strongly Agree






### Final instructions

- Read each question, and answer the question by making a cross under the smiley face that shows how you feel.
- Read each question carefully and choose *only one* answer.
- Please know that there are no right or wrong answer to the questions.
- If you answer honestly, you are doing the right thing.
- If you do not understand something, raise your hand and the facilitator will come to you.
- Do not look on the answer of the person sitting next to you, give your own answers.






### Questionnaire: Section B

No.	Question					
32	Will the learnership program help you to learn more about the work/job that you do?					
33	Is it good to know more about the work/job that you do?					
34	If you finish the learnership program, will it give you a better chance when you apply for a new job/position?					
35	Is it good to look for a better job/position?					
36	Is the learnership program a good opportunity/chance for you to get a certificate?					
37	Is it good to have a certificate that shows what you can do?					






## Questionnaire: Section B (Continues)

No.	Question					
38	Do you think it will be good for you to do very well in the learnership program?					
39	Are you looking forward to learn more in the learnership program?					
40	Will you be happy to get a certificate after you finish the learnership program?					
41	Is it a waste of time for you to do the learnership program?					
42	Will the learnership program maybe help you to make a better future for yourself?					
43	Will you be proud of yourself if you do well in the learnership program?					
44	<p>Most people find support in the people closest to them, the people they feel are important for them such as your: <i>Mother, Father, Wife/Husband, Girlfriend/Boyfriend, your Children, Best Friends, Grandmother/Grandfather, Brothers or Sisters.</i></p> <p>Choose one of the words above that describes the FIRST MOST important person in your life, and write it down on the line below:</p> <p>_____</p> <p>The following questions (45 - 52) will be about this person.</p>					
45	Is this person happy that you are doing the learnership program?					
46	Do you want this person to be happy for you because you are doing the learnership program?					
47	Will this person support you with the learnership program?					
48	Will you like it if this person to supports you with the learnership program?					
49	Does this person want you to fail or do badly in the learnership program?					
50	Do you think this person will make it difficult for you to do well in the learnership program?					
51	Is this person angry or jealous that you are doing the learnership program?					
52	Does this person make you feel that you want to do very well in the learnership program?					






## Questionnaire: Section B (Continues)

No.	Question					
53	<p><i>Mother, Father, Wife/Husband, Girlfriend/Boyfriend, your Children, Best Friends, Grandmother/Grandfather, Brothers or Sisters.</i></p> <p>This time choose a different word than the previous time. Choose the word above that describes the <b>SECOND MOST</b> important person in your life, and write it down on the line below: _____</p> <p>The following questions (54 – 61) will be about this person.</p>					
54	Is this person happy that you are doing the learnership program?					
55	Do you want this person to be happy for you because you are doing the learnership program?					
56	Will this person support you with the learnership program?					
57	Will you like it if this person to supports you with the learnership program?					
58	Does this person want you to fail in the learnership program?					
59	Do you think this person will make it difficult for you to do well in the learnership program?					
60	Is this person angry or jealous that you are doing the learnership program?					
61	Does this person make you feel that you want to do very well in the learnership program?					
62	<p><i>Mother, Father, Wife/Husband, Girlfriend/Boyfriend, your Children, Best Friends, Grandmother/Grandfather, Brothers or Sisters.</i></p> <p>This time choose a different word than the previous time. Choose the word above that describes the <b>THIRD MOST</b> important person in your life, and write it down on the line below: _____</p> <p>The following questions (63 – 70) will be about this person.</p>					
63	Is this person happy that you are doing the learnership program?					
64	Do you want this person to be happy for you because you are doing the learnership program?					
65	Will this person support you with the learnership program?					

## Questionnaire: Section B (Continues)






No.	Question					
66	Will you like it if this person to supports you with the learnership program?					
67	Does this person want you to fail in the learnership program?					
68	Do you think this person will make it difficult for you to do well in the learnership program?					
69	Is this person angry or jealous that you are doing the learnership program?					
70	Does this person make you feel that you want to do very well in the learnership program?					
<p><i>The questions about the three most important people in your life are now completed. Please continue answering the new questions as they are asked.</i></p>						
71	Are your colleagues, the people you work with, jealous that you are doing the learnership program?					
72	Do you feel that your colleagues make it difficult for you, in any way, to do the learnership program?					
73	Are your colleagues proud of you that you are doing the learnership program?					
74	Do your colleagues make you feel good about doing the learnership program?					
75	Is your Manager/Supervisor angry or jealous that you are doing the learnership program?					
76	Do you feel that your Manager/Supervisor makes it difficult for you, in any way, to do well in the learnership program?					
77	Is your Manager/Supervisor proud of you that you are doing the learnership program?					
78	Does your Manager/Supervisor make you feel good about doing the learnership program?					
79	Does the facilitator of the Learnership Program want you to do very well in the learnership program?					
80	Do you want to impress the facilitator by doing very well in the learnership program?					
81	Will the facilitator be very proud of you if you do well in the learnership program?					
82	Do you want to do very well in the learnership program to make the facilitator proud of you?					
83	Do the people in the community where you live think it is good to do the learnership program?					

## Questionnaire: Section B (Continues)

No.	Question					
84	Do you want to impress the people in your community by doing well in the learnership program?					
85	Do you think the people in your community want you to get a certificate after you complete the learnership program?					
86	Will you feel happy to tell the people in your community that you are doing the learnership program?					
87	Is it important to you that your family is happy with what you do?					
88	Is it important to you that your friends are happy with what you do?					
89	Is it important to you that your colleagues are happy with what you do?					
90	Is it important to you that your manager/ supervisor is happy with what you do?					
91	Will you be able to do well in the learnership program if you do not have the support of anybody but yourself?					
92	Are you proud of yourself because you are doing the learnership program?					
93	Is it easy for you to listen to what the facilitator says when you have class?					
94	Can you already learn by listening in class while the facilitator is talking about the work?					
95	Is it difficult for you to do the learnership program in English?					
96	Will it be easier for you to do well in the learnership program if you can do it in your first language?					
97	Is the work you are learning in the learnership program too difficult for you?					
98	Do you think you can do well in the learnership program if you try your best?					
99	Do you think the biggest reason for doing well in the learnership program is because you are lucky?					
100	Do you think luck will cause you to do well in the learnership program?					
101	Do you think the biggest reason for doing well in the learnership program is hard work? (Hard work is to pay attention in class, and do as well as you can with homework and tasks)					



## Questionnaire: Section B (Continues)

No.	Question					
102	Do you think hard work will cause you to do well in the learnership program?					
103	Are you afraid that you will not do well in the learnership program?					
104	Can you complete the learnership program?					
105	Are you sure that you will be able to do well in the learnership program?					
106	Do you have everything you need to do very well in the learnership program?					
107	Is there anything that will get in your way, and cause you to fail in the learnership program?					
108	Do you want to make a decision to learn as much as you can in the learnership program?					
109	Is your mind made up to learn as much as you can from this learnership program?					
110	Do you want to get as much out of this learnership program as you can?					
111	Do you decided to go all-out to do your best to succeed in this learnership program?					
112	Do you want to work hard so that you will do very well in this learnership program?					
113	Do you intend to use the opportunity of the learnership program to learn more about your work?					
114	Do you want to finish the learnership program and get a certificate?					
115	Are you sure that you want to work hard in the learnership program?					
116	If something gets in the way for you to do the learnership, will you still try very hard to do well in the learnership program?					
117	Even if you have to ask many questions and it takes long to understand the work, will you keep on trying so that you can finish the learnership with success?					
118	If you have a choice to do your homework for the learnership program at work or at home, will you choose to do your homework at home?					
119	Do you have responsibilities at home that make it difficult for you to do your homework at home?					
120	Is it usually noisy at your home when you do your homework?					

## Questionnaire: Section B (Continues)

No. Question



121	Is there enough light where you usually do your homework at home?					
122	Do people at your home distract you/ make it difficult for you to do your homework?					

## APPENDIX C

### FINAL STUDY: MEAN SCORE AND STANDARD DEVIATION PER ITEM AND SCALE

**Table C1*****Final study:*** Mean score and standard deviation per item and scale

Scale	Mean	Standard deviation	Number of items per scale
Behavioural beliefs	4.6	0.36	6
B32	4.6	0.48	
B33	4.6	0.50	
B34	4.5	0.54	
B35	4.4	0.57	
B36	4.6	0.53	
B37	4.6	0.48	
Attitude	4.6	0.39	6
B38	4.6	0.50	
B39	4.6	0.54	
B40	4.7	0.44	
B41	4.5	0.62	
B42	4.5	0.72	
B43	4.7	0.56	
Normative beliefs: Combined	4.2	0.4	40
<i>Normative beliefs (1)</i>	<i>4.4</i>	<i>0.43</i>	<i>8</i>
<i>B45</i>	<i>4.4</i>	<i>0.61</i>	
<i>B46</i>	<i>4.5</i>	<i>0.61</i>	
<i>B47</i>	<i>4.4</i>	<i>0.65</i>	
<i>B48</i>	<i>4.3</i>	<i>0.50</i>	
<i>B49</i>	<i>4.5</i>	<i>0.65</i>	
<i>B50</i>	<i>4.3</i>	<i>0.85</i>	
<i>B51</i>	<i>4.4</i>	<i>0.72</i>	
<i>B52</i>	<i>4.3</i>	<i>0.72</i>	
<i>Normative beliefs (2)</i>	<i>4.4</i>	<i>0.49</i>	<i>8</i>
<i>B53</i>	<i>4.2</i>	<i>2.31</i>	
<i>B54</i>	<i>4.4</i>	<i>0.61</i>	
<i>B55</i>	<i>4.4</i>	<i>0.55</i>	
<i>B56</i>	<i>4.4</i>	<i>0.62</i>	
<i>B57</i>	<i>4.3</i>	<i>0.61</i>	
<i>B58</i>	<i>4.5</i>	<i>0.64</i>	
<i>B59</i>	<i>4.4</i>	<i>0.76</i>	
<i>B60</i>	<i>4.5</i>	<i>0.59</i>	
<i>B61</i>	<i>4.3</i>	<i>0.67</i>	

**Table C1 (Continues)**

Scale	Mean	Standard deviation	Number of items per scale
<i>Normative Beliefs (3)</i>	4.3	0.55	8
B62	4.8	2.69	
B63	4.4	0.69	
B64	4.4	0.65	
B65	4.2	0.77	
B66	4.3	0.69	
B67	4.4	0.60	
B68	4.3	0.80	
B69	4.4	0.70	
B70	4.3	0.70	
<i>Normative beliefs (col)</i>	3.8	0.71	4
B71	3.7	0.98	
B72	4.0	0.82	
B73	3.7	0.93	
B74	3.9	0.84	
<i>Normative beliefs (man)</i>	4.3	0.56	4
75	4.3	0.75	
76	4.2	0.76	
77	4.3	0.69	
78	4.3	0.63	
<i>Normative beliefs (fac)</i>	4.4	0.57	4
B79	4.5	0.56	
B80	4.3	0.89	
B81	4.4	0.65	
B82	4.4	0.71	
<i>Normative beliefs (com)</i>	4.0	0.72	4
B83	3.9	0.92	
B84	4.0	0.83	
B85	4.0	0.91	
B86	4.1	0.89	
Subjective norms	4.1	0.48	7
B87	4.5	0.50	
B88	4.0	0.70	
B89	4.1	0.74	
B90	4.4	0.54	
B91	3.5	1.18	
B92	4.1	1.13	
B93	4.4	0.55	

**Table C1 (Continues)**

Scale	Mean	Standard deviation	Number of items per scale
Control beliefs	3.9	0.58	11
B94	4.2	0.73	
B95	3.4	1.31	
B96	3.8	0.99	
B97	3.8	1.13	
B98	4.1	0.99	
B99	3.1	1.40	
B100	3.4	1.21	
B101	4.2	0.98	
B102	4.4	0.69	
B103	3.5	1.27	
B104	4.0	1.08	
Perceived behavioural control	4.0	0.66	4
B105	4.4	0.62	
B106	4.1	0.78	
B107	3.9	0.98	
B108	3.8	1.09	
Intention	4.3	0.42	10
B109	4.3	0.58	
B110	4.1	0.85	
B111	4.3	0.67	
B112	4.5	0.52	
B113	4.4	0.50	
B114	4.6	0.61	
B115	4.5	0.52	
B116	4.3	0.50	
B117	4.4	0.54	
B118	1.9	0.68	
Environmental constraints	2.1	0.56	4
B119	2.6	1.13	
B120	2.2	0.90	
B121	1.9	0.75	
B122	2.0	0.85	

## APPENDIX D

### DETAILED RELIABILITY ANALYSIS

#### 1. Reliability analysis results: Behavioural beliefs

The behavioural belief scale showed low reliability with a Cronbach's Alpha of .46 according to the pilot data (refer to Table D1). The item total correlation of each item shows the level of internal consistency. The poor item total correlation scores for all the items (below .5) show that the items do not measure the same variable consistently. It also contributes to a poor reliability score ( $\alpha = .46$ ) of the scale.

**Table D1**

***Reliability analysis results: Behavioural belief scale***

Item	Pilot questionnaire		Final questionnaire	
	$\alpha = .46$		$\alpha = .78$	
	Item Total Correlation	Alpha if deleted	Item Total Correlation	Alpha if deleted
B32	.266935	.393011	.56616	.74004
B33	.472944	.312430	.63801	.72190
B34	.308785	.363602	.47815	.76121
B35	.029756	.538318	.39766	.78366
B36	.347378	.354893	.63166	.72150
B37	.042433	.493777	.48971	.75753

Another method of establishing poor items is to see whether the reliability of the scale would increase significantly if the particular item were deleted. In the case of this scale this method does not provide significant assistance, given that the scores yielded by this test are mostly below  $\alpha = .40$ . The final questionnaire did not include any of these items as the content of the scale was newly developed.

The new items contributed significantly to increase the reliability score in the final questionnaire and shows an improved reliability measure of  $\alpha = .78$ , characterising good reliability.

## 2. Reliability analysis results: Attitude

The reliability of the attitude scale illustrates a Cronbach's Alpha value of .83, therefore indicating a very good reliability for the scale. The values are illustrated in Table D2.

**Table D2**

### *Reliability analysis results: Attitude scale*

Item	Pilot questionnaire		Final questionnaire	
	$\alpha = .83$		$\alpha = .77$	
	Item Total Correlation	Alpha if deleted	Item Total Correlation	Alpha if deleted
B38	.797056	.776556	.58605	.71870
B39	.465874	.823507	.49485	.73831
B40	.755351	.784725	.67235	.70681
B41	.485145	.833619	.40925	.76296
B42	.622687	.799641	.44096	.76426
B43	.725796	.767515	.58296	.71554

Item total correlation scores below .50 illustrate poor internal consistency for both items B39 and item B41. The statistics also show that the deletion of these two items would increase the reliability minimally. Although the reliability of the scale is very good, the researcher rephrased item B39 without changing the focus of the item. After reviewing the content of item B41, no change would contribute to simplifying the item and therefore the item was not changed.

The reliability of this scale dropped from an Alpha of .83 in the pilot questionnaire to an Alpha of .77 in the final questionnaire. Although this reliability score still indicates good reliability, the poor items in the pilot questionnaire did not deliver improved item total correlation scores in the final questionnaire. In addition to B39 and B41, item B42 also shows poor internal consistency with item total correlation scores below .50.

## 3. Reliability analysis results: Normative beliefs

The participants in the pilot study were given the opportunity to answer questions which

portrays the beliefs they hold about how different groups of/people in their lives support them in their learnership program. Therefore, this scale includes seven sub-sections focusing on the following groups or people: (a) First most important person or group of people in my life, (b) Second most important person or group of people in my life, (c) Third most important person or group of people in my life. For the three most important person or group sections, the participants had to select one the following options at the start of each section: Mother, Father, Spouse, Boyfriend/Girlfriend, Children, Grandparent/s, Children and Friends. Learners had to respond to the same questions in relation to the persons groups of people selected at the beginning of each section. The responses of the learners lead to the creation of specific subscales, each with different questions: (d) Colleagues, (e) Manager, (f) Learning Facilitator and (g) Community. The reliability scores for these seven sub-sections were all good ( $\alpha > .70$ ), as illustrated in Table D3.

**Table D3*****Reliability analysis results: Normative beliefs***

Scale	Pilot questionnaire		Final questionnaire
	$\alpha = .92$		$\alpha = .81$
	Number of items	Cronbach's Alpha	Cronbach's Alpha
Normative beliefs: 1 <sup>st</sup> most important	8	.88	.80
Normative beliefs: 2 <sup>nd</sup> most important	8	.89	.90
Normative beliefs: 3 <sup>rd</sup> most important	8	.85	.91
Normative beliefs: colleagues	4	.72	.80
Normative beliefs: manager	4	.80	.81
Normative beliefs: learning facilitator	4	.73	.81
Normative beliefs: community	4	.78	.83

The discussion of the sub-scales' reliability results relating to the normative beliefs scale will be limited to the items with poor reliability. In these instances, reference are made to the relevant corrective action that addresses the poor reliability.



The sub-scale of normative beliefs relating to colleagues shows two items with poor reliability as illustrated in Table D4.

**Table D4**

***Reliability analysis results: Normative beliefs relating to colleagues***

Item	Pilot questionnaire		Final questionnaire	
	$\alpha = .72$		$\alpha = .72$	
	Item Total Correlation	Alpha if deleted	Item Total Correlation	Alpha if deleted
B71	.443313	.690975	.751146	.674783
B72	.468020	.679341	.369609	.852796
B73	.579822	.608280	.685931	.712387
B74	.535959	.637191	.671830	.723376

Two of the individual items for this scale illustrate an item total correlation below .5 in the pilot study, which lead to the rewrite of item B71. Corrective action also included the highlighting of the negative wording in B72 in bold. These changes resulted in a higher coefficient alpha of .80 in the final study. Item B71 showed improved internal consistency, however the item total correlation for B72 was even lower than in the pilot study ( .37).

A Cronbach's Alpha score of .73 indicates good reliability for this sub-scale in the pilot study that measures normative beliefs relating to the learning facilitator (refer to Table D5). One of the four items, B80, does however illustrate an item total correlation below .5 indicating low internal consistency as can be seen below. A significant increase in the Cronbach's Alpha score is also noticeable with the deletion if B80 which lead to the rewrite of the item in order to create more clarity regarding the content.

After the adjustment to the wording of item B80 the normative belief subscale with items relating to the learnership facilitator achieved a very good reliability score ( $\alpha = .81$ ) in the final questionnaire. In the final questionnaire, this subscale indicated no poor items (item total correlation < .05).

**Table D5*****Reliability analysis results: Normative beliefs relating to learning facilitator***

Pilot questionnaire			Final questionnaire	
$\alpha = .73$			$\alpha = .81$	
Item	Item Total Correlation	Alpha if deleted	Item Total Correlation	Alpha if deleted
B79	.563408	.646169	.663565	.759974
B80	.431835	.713858	.645744	.771377
B81	.510193	.672303	.615762	.769382
B82	.577127	.628855	.653416	.750094

The final sub-scale included in the normative belief scale illustrated good reliability ( $\alpha = .78$ ) for the pilot study (refer to Table D6). The scores, which reveal the internal consistency, of the items included in this sub-scale range between .44 and .72 indicating room for improvement of at least one of the items.

**Table D6*****Reliability analysis results: Normative beliefs relating to the community***

Pilot questionnaire			Final questionnaire	
$\alpha = .78$			$\alpha = .83$	
Item	Item Total Correlation	Alpha if deleted	Item Total Correlation	Alpha if deleted
B83	.719818	.645341	.710627	.754877
B84	.440832	.789367	.461698	.859901
B85	.657818	.688127	.780490	.720578
B86	.544131	.747251	.673950	.772600

The increase in the Alpha value if item B84 were deleted, as well as the item total correlation being .44 indicates that the reliability of the sub-scale could be improved if the wording of the item is simplified. This resulted in an item total correlation. The increase is however not significant in elevating the score to an acceptable internal

consistency value. The reliability of the entire measure is however very reliable given an alpha coefficient of .83.

#### 4. Reliability analysis results: Subjective norm

The scale measuring the learner's subjective norms included seven items and shows good reliability ( $\alpha = .72$ ) in the pilot study. One item however shows a severely low internal consistency with an item total correlation of .24, whereas four items proved moderately low item total correlations ( $.3 > .5$ ) (refer to Table D7).

**Table D7**

#### ***Reliability analysis results: Subjective norm***

Pilot questionnaire			Final questionnaire		
$\alpha = .72$			$\alpha = .59$		
Item number	Item Total Correlation	Alpha if deleted	Item number	Item Total Correlation	Alpha if deleted
B87	.561117	.660085	B87	.47089	.52280
B88	.478034	.681736	B88	.58740	.45074
B89	.508480	.675007	B89	.39927	.51845
B90	.419655	.696165	B90	.46330	.51853
B91	.485524	.687706	B91	.13522	.67084
B92	.239930	.739214			
B93	.404838	.699661	B93	.26074	.59607

The wording for items B87, B88, B89, B90 and B92 were similar. The number of poor items amongst these items however led to the review and rewrite of the wording of all these items excluding B92. The latter item showed extremely poor internal consistency and after reconsidering the content, deletion of this item was deemed the appropriate corrective action.

The results of the final study indicated a poor reliability score with a Coefficient Alpha of .59. The internal consistencies of individual items showed poor item total correlations for item B91 and B92 in the final questionnaire. Similar to the results of the pilot

questionnaire most of the items in this scale do not significantly measure the same variable consistently.

## 5. Reliability analysis results: Control beliefs

The Cronbach's Alpha score of the control beliefs scale in the pilot study was .80, which indicates very good reliability. However, when looking at the individual items, illustrated in Table D8, there were grounds for deletion as well as rewriting some of the items.

**Table D8**

### *Reliability analysis results: Control beliefs*

Pilot questionnaire			Final questionnaire		
$\alpha = .80$			$\alpha = .76$		
Item number	Item Total Correlation	Alpha if deleted	Item number	Item Total Correlation	Alpha if deleted
B94	.360127	.799287	B93	.23380	.76195
B95	.569575	.785922	B94	.32585	.75374
B96	.566355	.776662	B95	.39869	.74858
B97	.261170	.812843	B96	.29360	.75846
B98	.391363	.796484	B97	.68431	.70037
B99	.646468	.771799	B98	.66755	.70812
B100	.590027	.773881	B99	.57195	.71795
B101	.418376	.800257	B100	.20762	.77609
B102	.648603	.765964	B101	.60455	.71724
B103	.499950	.785327	B102	.32821	.75381

The rewriting of the following items was deemed necessary to create more clarity regarding the content of the question, B94, B98, B101 and B103. Although item B97 was considered for deletion given the item total correlation below .3, the increase in scale reliability upon deletion was not regarded as significant. The content derived from the individual interviews confirmed the theoretical significance of this item and therefore the decision was made to retain the item for testing on a larger sample. The corrective action included the simplification of the item's phrasing to create more clarity for the respondent.

The overall reliability of the control beliefs scale reduced marginally, to a score of .76 in the final questionnaire. Even though item B97 (which showed particularly low internal consistency in the pilot phase) was adjusted for the final questionnaire, it still obtained a very low item total correlation score. Two other items, B94 and B101 also showed very poor item total correlation scores ( $< .30$ ), whilst three items scored poor internal consistency with item total correlation scores below .50.

## 6. Reliability analysis results: Perceived behavioural control

The pilot study results for the scale designed to measure perceived behavioural control could be regarded as good with a Cronbach's Alpha score of .74 (refer to Table D9). The item total correlation scores of the individual items indicate that two of the items are poor compared to the rest and fall within the  $.3 > .5$  range of item total correlations.

**Table D9**

### ***Reliability analysis results: Perceived behavioural control***

Pilot questionnaire			Final questionnaire		
$\alpha = .74$			$\alpha = .71$		
Item number	Item Total Correlation	Alpha if deleted	Item number	Item Total Correlation	Alpha if deleted
B104	.561431	.667418	B103	.57642	.62576
B105	.555033	.673874	B104	.67978	.56805
B106	.650042	.630128	B105	.33857	.71494
B107	.428737	.721571	B106	.16110	.76385
B108	.320269	.750358	B107	.65782	.58692

With individual item total correlations of .43 and .32, items B107 and B108, were considered for rewriting. Item B107 remained unchanged as the content of the item illustrated could not be stated any simpler. The content of item B108 could be confusing to respondents considering that the phrasing was in the negative. Clarifying this question for improved understanding included the highlighting of the negative words in bold for the purpose of the final questionnaire.

The final questionnaire yielded a reliability score of .71 for this scale, which indicates good reliability. One of the five items in this scale however shows very poor internal consistency (B107) with an item total correlation score of .16, whilst item B106 scored an item total correlation of .34, which also indicates poor reliability.

## 7. Reliability analysis results: Intention

The reliability of the intention scale was very good ( $\alpha = .88$ ). The scale included 10 items, of which only two had an item total correlation under .5 (refer to Table D10).

**Table D10**

### *Reliability analysis results: Intention*

Pilot questionnaire			Final questionnaire		
$\alpha = .88$			$\alpha = .84$		
Item number	Item Total Correlation	Alpha if deleted	Item number	Item Total Correlation	Alpha if deleted
B109	.477297	.872673	B108	.37774	.86086
B110	.636239	.865170	B109	.64947	.81346
B111	.415291	.879595	B110	.34623	.84742
B112	.621058	.863228	B111	.46999	.82875
B113	.773768	.849121	B112	.68907	.81235
B114	.536399	.869370	B113	.70940	.81178
B115	.611492	.862907	B114	.60551	.81662
B116	.710066	.855260	B115	.63307	.81667
B117	.754876	.851483	B116	.64375	.81663
B118	.577143	.866971	B117	.72242	.80885

The reliability of the scale would not increase dramatically if the poor items (B109 and B111) were to be deleted. It was therefore necessary to rewrite these items for the final questionnaire to increase the clarity of the content.

The intention scale indicated very good reliability in the final questionnaire ( $\alpha = .84$ ). The same items showing low internal consistency scores in the pilot questionnaire

unfortunately did not improve in the final questionnaire. In total three items of this scale showed total item correlation scores below .50 in the final questionnaire.

## 8. Reliability analysis results: Environmental constraints

The last scale of in the questionnaire includes seven items and had the lowest reliability score of the entire questionnaire with a Cronbach's Alpha score of .56. The statistics of this scale therefore required careful consideration.

**Table D11**

***Reliability analysis results of the pilot questionnaire: Environmental constraints***

Item	Item Total Correlation	Alpha if deleted
B119	.484067	.458711
B120	.633755	.346536
B121	.057982	.632240
B122	.255415	.526998
B123	.315791	.505684
B124	-.006644	.627119
B125	.455864	.452883

The reliability scores of items B121 and B124 (item total correlation < .1), clearly indicated that these items do not contribute to the measurement of environmental constraints and therefore they were deleted. Recalculation of the item analysis followed the removal of items B121 and B124. The results of the recalculation improved the reliability score of the scale from fair ( $\alpha = .56$ ) to good ( $\alpha = .70$ ). Table D12 presents the detail of the adjusted scale.

Although four of the remaining five items fall within the moderately poor range (item total correlation .3 - .5), the overall reliability of the scale was deemed sufficient and included in the final questionnaire after minor changes to the phrasing of the questions.

**Table D12**

***Corrected reliability analysis results of the pilot study: Environmental constraints (Items B121 and B124 Deleted)***

Item	Item Total Correlation	Alpha if deleted
B119	.486235	.643505
B120	.669457	.540340
B122	.353846	.689417
B123	.335553	.698645
B125	.462220	.648208

A coefficient alpha of .64 shows fair reliability for the environmental constraints scale in the final questionnaire (refer to Table D13). In the final questionnaire, one item showed very poor internal consistency ( .25) whereas three of the remaining four show item total correlation scores below .50 indicating poor internal consistency.

**Table D13**

***Reliability analysis results of the final questionnaire: Environmental constraints***

Final questionnaire		
$\alpha = .64$		
Item number	Item Total Correlation	Alpha if deleted
B119	.24777	.64997
B120	.43301	.58258
B122	.42059	.57885
B123	.30352	.63063
B125	.61480	.48269