



**DEVELOPMENT OF A FRAMEWORK FOR MANAGING FOOD SECURITY
PROGRAMME: AN ANALYSIS OF STUDENT FOOD INSECURITY AND THE
INTERVENTIONS AT THE UNIVERSITY OF KWAZULU-NATAL, SOUTH AFRICA**

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ABSTRACT

Food insecurity is a critical challenge affecting many households in post-apartheid South Africa. The 2017 report by Statistics South Africa indicated that food poverty had increased by 2,8 million in headcount, from 11 million in 2011 to 13,8 million in 2015. The most vulnerable were low-income households. The literature indicates that, in response to high levels of food and nutrition insecurity among poor population groups that have persisted from the apartheid era, the post-Apartheid South African government has made great strides in addressing the problem. For example, the serious problem of food and nutrition insecurity among children of school-age is being addressed through the National School Nutritional Programme, which has resulted in the enhancement of the capacity of the children to learn actively and the reduction of learner absenteeism and dropping out of school.

On the other hand, recent literature indicates that food insecurity is an emerging and alarming problem among students at Institutions of Higher Learning (IHLs) in South Africa. The problem affects particularly students from economically disadvantaged backgrounds. The University of KwaZulu-Natal (UKZN) is likely to be no exception to experiencing student food insecurity, given that nearly 50% of the students are from low-income households. The literature suggests that food insecurity and its impact on the health, well-being and academic performance is often underestimated in South African IHLs. This under-estimation seems to have resulted in the absence of a distinct government programme focussed on addressing food and nutrition insecurity among students at South African IHLs. In the current study, a preliminary review of the recent literature indicated that, due to failure or neglect by the government to address the problem and challenges of food and nutrition insecurity among students at South African IHLs, institutions like UKZN have resorted to developing and implementing a food security project and/or programme. The literature shows that UKZN has been running a Food Security Programme (FSP) since 2012 to address the problem of food and nutrition insecurity among the students. The form of assistance provided by the UKZN FSP includes meal vouchers and food hampers to students in need.

Despite the implementation of the FSP at UKZN since 2012 as described above, pertinent data and information on student food security status are not available. While few studies have been conducted to analyse the food security status of students at South African IHLs (including UKZN), the studies were of limited in scope and in particular, the studies conducted at UKZN

were not university-wide and therefore generated very limited data and information. In addition, it seems that no studies have been conducted to analyse: the perceptions of UKZN key stakeholders regarding student food insecurity; the awareness level of the key stakeholders (including students), regarding the existence of the FSP at their institution; and in examining the management of the FSP. The data and information that is lacking are essential, as they would guide decision-making with respect to policies and strategies aimed at developing and/or enhancing sustainable programmes and projects that address food insecurity among students at IHLs in South Africa. Thus, the objectives of this study were to: assess the prevalence of food insecurity among students; analyse the perceptions of UKZN key stakeholders (including students) regarding student food insecurity; assess the awareness level of the key stakeholders regarding the existence of the FSP at the institution; analyse the management of the FSP; and make recommendations, if necessary, for the improvement of programme management to achieve its objectives and impact on student academic potential.

The study was conducted at UKZN's five campuses, which are located in Durban, Pietermaritzburg and Pinetown in KwaZulu-Natal Province of South Africa. This empirical study used a mixed methods approach that lies in both the qualitative and quantitative paradigms. Quantitative data were collected through survey questionnaires that were delivered to the participants (N=500 students; N=100 academic staff). Qualitative data were collected through key informant face-to-face interviews and focus group discussions with various key stakeholders at UKZN. Data obtained from the surveys were analysed by IBM SPSS version 24 software, while most of the qualitative data were subjected to thematic content analysis.

Results from the surveys suggest that food insecurity remains a serious challenge among university students. Some 53% of the students were vulnerable to the phenomenon, of whom 9% were highly vulnerable. The highest prevalence of food insecurity was in students relying on a financial aid scheme, undergraduates and males. It appears that students who suffer food insecurity will additionally experience psychological and emotional stress as a factor that can negatively affect their health, motivation and academic potential; some 67% of the students reported that hunger reduced their concentration and vigour such that, 28% of them had missed classes. Social stigma was linked to food insecurity as students preferred anonymity about their food insecurity status. Despite that the FSP had been implemented four years earlier, an overwhelming majority of the UKZN stakeholders among them 90% of the targeted

beneficiaries, expressed ignorance regarding the existence of the programme at UKZN. In addition, 37% of the students showed reluctance to utilising or recommending the FSP to anyone.

To evaluate the FSP at UKZN, a qualitative research using an explorative research design, generated data from key informants using face-to-face interviews. The study findings showed that as an institution, the UKZN lacked a sustainable blueprint for addressing the increasing prevalence of FI among students. The FSP currently run at UKZN was not formalised but introduced as a self-help initiative linked to a social responsibility of the University. ‘Ignorance’, and ‘denialism’ were the main identified descriptors for the lack of the programme prioritisation and mainstreaming, resulting in lack of resources including sustainable funding, personnel, and infrastructure. As perceived from the student views, social stigma was associated with negative attitude and beliefs about food aid. The study recommends that the FSP could overcome such negative connotations through programme awareness among the UKZN stakeholders. Further, managing of the FSP was compromised by lack of a monitoring and evaluation system in place, resulting in lack of publicity of the programme to the wider UKZN community. The study concludes by developing a framework as a toolkit for managing a FSP at an IHL like UKZN.

Keywords: food security complexities, student food insecurity, food security programme, programme awareness and utilisation, food aid perceptions.

PREFACE

The work described in this thesis was carried out in the School of Agricultural, Earth and Environmental Sciences, the University of KwaZulu-Natal from March 2014 to December 2017, under the supervision of Professor Unathi Kolanisi, Professor Muthulisi Siwela, and Mr Denver Krishina Naidoo.



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Denver K. Naidoo (Co-supervisor)

DECLARATION 1: PLAGIARISM

I, STELLA CHEWE SABI declare that:

- i. The research reported in this thesis, except where otherwise indicated, is my original work.
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DECLARATION 2: PUBLICATIONS

The following publications (submitted/in progress) form part of the research presented in this thesis.

Manuscript 1: Chapter 2

S. C. Sabi, U. Kolanisi, M. Siwela and D. K. Naidoo. Complexities of food insecurity at the University of KwaZulu-Natal, South Africa: a Review. (Peer-reviewed and accepted for publication: *Journal of Consumer Sciences- Special Edition on Food and Nutrition challenges in Southern Africa* Confirmation of acceptance from Editor, Appendix H).

Manuscript 2: Chapter 4

S. C. Sabi, D. Naidoo, U. Kolanisi and M. Siwela. Food insecurity prevalence, and perceptions associated with prevalence among students at the University of KwaZulu-Natal, South Africa. (Under review: *S Afri J Nutri*).

Manuscript 3: Chapter 5

S. C. Sabi, M. Siwela, D. K. Naidoo and U. Kolanisi. Perceptions about student food insecurity, and the awareness of food insecurity interventions at UKZN, South Africa (work in progress).

Manuscript 4: Chapter 6

S. C. Sabi, U. Kolanisi, M. Siwela and D. K. Naidoo. An evaluation of food security interventions in institutions of higher learning: A perspective of food security programme implementers, UKZN, South Africa (work-in-progress).

Conference paper

S. C. Sabi, U. Kolanisi, M. Siwela and D. Naidoo. Investigating perceptions of food insecurity complexities in South African higher learning institutions: A review. Paper presented at the University of KwaZulu-Natal's– 9th Annual Teaching & Learning in Higher Education Conference 2015 (TLHEC 2015), 21-23 September 2015, Durban, South Africa. Theme: Re-Imagining higher education policy implementation: Can policy learn from practice? Complexities, challenges and possibilities (Peer reviewed and published in conference proceedings, confirmation of peer- review, Appendix G).

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LIST OF ABBREVIATIONS

ADO:	Academic Development Officer
ANC:	African National Congress
BMI:	Body Mass Index
DAFF:	Department of Agriculture, Forestry and Fisheries
DHET:	Department of Higher Education and Training
DA:	Department of Agriculture
DBE:	Department of Basic Education
DE:	Department of Education
DH:	Department of Health
DSD:	Department of Social Development
DSM-IV:	Diagnostic and Statistical Manual of Mental Disorders
DUT:	Durban University of Technology
FANTA:	Food and Nutrition Technical Assistance
FAO:	Food and Agricultural Organization
FI:	Food Insecurity
FSP:	Food Security Programme
ICESCR:	International Covenant of Economics, Social and Cultural Rights
HFIAS:	Household Food Insecurity Access Scale
HIV:	Humanimmune Deficiency Virus
IFAD:	International Fund for Agricultural Development
IFSS:	Integrated Food Security Strategy
IHL:	Institution of Higher Learning
NAMC:	National Agricultural Marketing Council
NRF:	National Research Foundation
NUC:	Natal University College
MDG:	Millennium Development Goal
NSFAS:	National Student Financial Aid Scheme
NSNP:	National School Nutrition Programme
OECD:	Organisation for Economic Co-operation and Development
RDP:	Reconstruction Development Plan
RSA:	Republic of South Africa
SAVACG:	South African Vitamin A Consultative Group

SA:	South Africa
SSA:	Statistics South Africa
SDG:	Sustainable Development Goal
SPSS:	Statistical Package for Social Sciences
SRC:	Student Representative Council
STI:	Sexually Transmitted Infection
TVET:	Technical and Vocational Education and Training
UDW:	University of Durban-Westville
UFS:	University of the Free State
UKZN:	University of KwaZulu-Natal
UN:	University of Natal
USA:	United States of America
USAID:	United States Agency for International Development
UZ:	University of Zululand
WHO:	World Health Organisation
WFP:	World Food Programme
WFS:	World Food Summit
ZAR:	Rand

CHAPTER 1: INTRODUCTION, THE PROBLEM AND ITS SETTING

1.1 Introduction

Poverty and hunger are among the most compelling socio-economic problems affecting different sectors of the human population. Hunger and food insecurity has been extensively examined yet the problem of household food insecurity continues to plague most parts of the world. The 2015 report on global food insecurity documented that an estimated 795 million people were undernourished due to poverty-related problems such as food insecurity (Food and Agriculture Organization of The United Nations (FAO), International Fund for Agricultural Development (IFAD) & World Food Programme (WFP), 2015: 12). The sharp increases in global food prices and incidents of food riots in some parts of the world are among the various indicators of the prevailing food crisis and food insecurity (FAO, 2011). The complex nature of food security has attracted diverse interpretations and various means of addressing it. One prominent perception, of food security is the 1996 World Food Summit definition, which states ‘food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’ (World Food Summit, 1996: 1). Part 1, ‘Article 11’ of the 1976 United Nations Human Rights-Office of the High Commissioner (UNHR), emphasises that access to adequate food is ‘a human right’ (UNHR, 1976). From these perspectives, the availability of adequate nutritious food at all times and ones access to it is critical, as it is an important socio-economic factor. However, meeting food and nutritional needs remain a challenge at a household level even in relatively rich countries such as the United States of America that has a record of 12.7% of its population experiencing food poverty in 2015 (Coleman-Jenson *et al.*, 2016: 2).

The absence of food security or the lack of food security is referred to as food insecurity. The problem of food insecurity is more challenging in developing regions like sub-Saharan Africa where poverty levels are high (Chaparro *et al.*, 2009). The FAO, IFAD & WFP (2015) report on regional food insecurity documented that sub-Saharan Africa had the highest prevalence of undernourishment for any region in the world as one person out of four was undernourished (FAO, IFAD & WFP, 2015: 12). The FAO report warned that this prevalence of undernourishment was the “second highest burden in absolute terms”.

Sub-Saharan African countries like South Africa are no exception to the problem of food insecurity as a number of households live in chronic poverty (Hendriks, 2014). As a result, it increases their vulnerability to hunger and malnutrition. This is despite the country's recognition of the right to food enshrined in Section 27 of the Constitution, which obliges the state to take reasonable legislative and other similar measures within the context of its available resources to achieve the progressive realisation of services such as sufficient food and water, and health care (Republic of South Africa, 1996; Hendriks, 2014). Research by Devereux & Waidler (2017); StatsSA (2014); StatsSA (2012) show that despite the important recognition of the right to food and South Africa's improved economic conditions at national level and decreased poverty levels (from 30% in 2002 to 13% in 2011), household/individual food insecurity is a persistent prominent challenge in the country as significantly many South Africans are food insecure. This is evident by the latest national statistics on poverty as proxy for food insecurity which showed that in 2015, some 13,8 million people in South Africa lived below the food poverty line of R441.00 per person per month (StatsSA, 2017). The StatsSA (2017), noted that this was an increase in extreme poverty among South Africans who faced hardship to access food (from 11 million people in 2011 to 13,8 million people in 2015). The sub-population groups such as single-parent households, the socio-economically disadvantaged, and the rural population were amongst the vulnerable groups.

Generally, food-insecure households lack access to a sufficiently diverse diet to meet a minimum calorie intake or good nutrition for a healthy life. As a result, this poses a big threat to their health. The challenging nature of food insecurity has attracted various sectors of the world to put measures in place to address the issue. Some of the critical efforts put in place include food aid related interventions such as nutritional programmes, food parcels, food banks and food pantries. The 'Eurobarometer Special' (2012: 1) of the European Commission reported that in Europe, food banks aimed at addressing household food insecurity were implemented to target poor populations. In the United Kingdom, food banks are reported to be on the rise (Wokingham Trussell Trust Food Bank, 2014). In sub-Saharan Africa, nutritional programmes and school feeding schemes are reported to be common interventions (Ebersöhn & Ferreira, 2012). In southern Africa, a region hard hit by hunger, food security measures are reported to be limited to the rural and poor communities and within school feeding schemes for the school age (Ebersöhn & Ferreira, 2012). In the South African context, efforts to address nutritional needs are centred at the school age attending public schools. These efforts are in the

form of a school feeding scheme, which stems from the Integrated Food Security Strategy (IFSS), formulated in 2002 (Department of Basic Education-DBE, 2009: 1). The School Feeding Scheme involves several government departments, including the Department of Education, Health, Social Development and Agriculture. It is aimed at alleviating short-term hunger; enhancing the learners' active learning capacity; and addressing micronutrient deficiencies (DBE, 2009: 1). The beneficiaries are predominantly from historically disadvantaged populations such as people of African descent¹ and people of mixed race².

On the contrary, in Institutions of higher Learning (IHLs) food security is less of a priority compared to other academic needs. It could be reasoned that government, through use of a student loan and bursary scheme called the National Student Financial Aid Scheme (NSFAS), addresses the food insecurity and financial burdens of students in IHLs. However, the reality is that the NSFAS is primarily directed to students who are in need of money to pay for their tertiary education, rather than for food security. Ideally, the NSFAS is intended to provide financial support to cover mainly tuition fees, accommodation, books, stationery and, in some instances provide a stipend, depending on the institution (Wickham *et al.*, 2008: 29). Seemingly, the NSFAS is inadequate to cover all these necessities, especially the stipend for food.

It is also evident that household food insecurity and socio-economic burdens affect students in IHLs. The most affected are students from low-income households (Fentiman *et al.*, 2008; Gwacela, 2013). Studies by Fentiman *et al.* (2008); Grand *et al.* (2004); Fredman (2004) in Australia, revealed that students who were experiencing household poverty and financial stresses were likely to be food insecure. Similar research by Hughes *et al.* (2011), conducted at the University of Hawaii in the United States of America (USA) revealed that 22% of students were either food insecure or were at risk of being food insecure (Hughes *et al.*, 2011).

1.2 Food Insecurity in South African Institutions of Higher Learning

Developing countries like South Africa are no exception to the problem of food insecurity and its implications on students' educational outcomes. Research shows that in recent times, South

¹ People of African descent refers to the indigenous Black population.

² Mixed race refers to the Coloured population in South Africa.

African IHLs have been burdened with low graduation rates, high dropout and failure rates that are linked to poverty-related problems such as food insecurity (Letseka & Maile, 2008). Research conducted across the country shows that 35% of students fail to complete their degrees; with 52% drop out of technikons; while 17% do not complete the Technical Vocational Education and Training (TVET) courses. The Department of Education (DE) in South Africa (2005); MacGregor (2007); Letseka *et al.* (2010) also indicate that 15% of the students fail to complete their degrees in the recommended time. Nicole Murdoch, Executive Director for Teaching, Learning and Quality at the Monash University South Africa concurs with the assertion that the graduation rate among undergraduate students in 23 public universities in South Africa is one of the lowest in the world (Mtshali, 2013).

The major problems that contribute to low student graduation rates include food poverty, as some students do not eat for several days due to financial constraints (Mtshali, 2013). Munro *et al.* (2013) concur that students on financial aid are the most vulnerable to food insecurity. Letseka & Maile (2008) warned that even when the NSFAS is granted to financially needy students; it is inadequate, as other necessities such as food and transport could be compromised. This leaves students with the difficulty of finding options to close the financial gap, for example owing to the rising unemployment levels in the country, some students compete for few available part-time jobs (Letseka & Maile, 2008). These financial gaps are among the critical factors that determine the students' educational outcomes (Wickham *et al.*, 2008). These findings also show the likelihood that university students who carry socio-economic burdens, especially undergraduates, are at a high risk of facing food insecurity in countries like South Africa. The country's economic prospects are put in jeopardy as students take time to be absorbed into the labour market to contribute to self and national development (Altman *et al.*, 2009).

The University of KwaZulu-Natal (UKZN), one of the leading IHLs on the continent of Africa (DHET, 2015), is likely to be among the most affected institutions by poverty-related issues such as food insecurity. Research from the university community documented that 53% of the students who come from an economically disadvantaged background were reported to be food insecure (Veldman & Kaissier, 2013). A study by Munro *et al.* (2013) conducted between 2007 and 2010 confirms that at UKZN, resource-poor students who are on financial aid are vulnerable to food insecurity. Another study from the same university by Gwacela (2013)

revealed that 80% of the first year students experienced anxiety about food availability and accessibility. Gwacela's study warned that food insecurity and socio-economic issues of students compromised their academic potential and their progression to postgraduate level. The above findings show that the implication of socio-economic burdens and food insecurity increase the likelihood of university students to forfeit their tertiary education due to prolonged failures that result in academic exclusion.

The problem of food insecurity in IHLs and the absence of clear policy framework to adequately address the challenge has prompted tertiary institutions including UKZN to come up with measures of addressing the issue. Likewise, UKZN formulated a food security programme in 2012, to provide food assistance to students in need (UKZN, 2012). The food security programme was implemented at the institution in response to increased cases of hunger related complications among students. Its primary goal was to provide both counselling and food support in the form of food hampers and meal vouchers to students in need. These students in need were identified and referred by designated staff members, members of the Student Representative Council (SRC), and their peers. According to the University sources (UKZN, 2012), the food security program also aimed to create awareness about the challenges of food insecurity and its implication on the student's wellbeing.

1.3 Theoretical positioning

The conceptual framework of this study will be guided by the following model: Abraham Maslow's Hierarchy of Human Needs, which is associated with Jean Piaget's Theory of Cognitive Learning. The framework will also be guided by literature on monitoring and evaluation, with a particular focus on the food security conceptual framework for impact evaluation system as outlined below; and expounded in Chapter 2.

This study draws on Piaget's Theory of Cognitive Learning that offers a lens of understanding that knowledge is constructed by the learner rather than transmitted by the educator (Fischer, 1980). The theory posits that the ability of a learner to construct knowledge (cognitive power evidenced by, for example, academic performance) is dependent on intrinsic, and extrinsic factors (such as the physical environment). Hereditary factors and the physiological state and health of the individual are prime intrinsic factors. Yet, nutritional status is a prime determinant of the physiological state and health of an individual. In this context, given the potential

correlation between food insecurity and academic performance, it is reasoned that if a student's primary need of food security is not met, other factors related to their academic performance could be jeopardised.

Closely related to Piaget's Theory of Cognitive Learning is Maslow's (1954) Theory of Human Motivation which assumes that there is a relationship between human basic needs and general behaviour. From this perspective, Maslow presented a five-stage model comprising a 'Hierarchy of Needs', which are classified into the following basic needs: biological and physiological; safety; love and; esteem. The hierarchy rests on the notion that individuals must satisfy their most basic needs such as food, air, water and shelter before progressing to the higher needs such as self-esteem. In other words, any motivated behaviour is a channel through which many basic needs may be satisfied because one need usually rests on the prior of gratification of another-more pre-potent need (Maslow, 1954; McLeod, 2007). This argument aids the researcher to examine the implication of food insecurity on the students' behaviour such as their academic performance as evidenced at UKZN. The study purports that, food security meets the basic physiological need for food, whereas food insecurity deprives that need. Apart from having serious negative effects on human physiology and health, food insecurity may have a negative impact on the socio-psychological state of the individual and thereby affecting his or her Esteem needs, Actualisation needs, and wellbeing (McLeod, 2007). This in turn would impoverish their academic potential. In addition, it is reasoned that the learner may become secretive about his or her food insecurity status in order to preserve self-esteem. This would restrict the affected student from accessing food security interventions in the university community.

Evaluations research analysts, Cook & Campbell (1979) contend that behaviourists' theories are associated with evaluation studies. In this view, the evaluation framework for food security programmes proposed by the monitoring and evaluation experts of food aid programmes impacts, of the Food and Nutrition Technical Assistance (FANTA) (Riely, 1999) will be adopted. The framework demonstrates the ability of food aid programmes to effectively transform programme inputs into outputs; and the programme's impact on the targeted beneficiaries. The framework also claims that good management of food aid programmes can yield positive results in the targeted beneficiaries. The framework is relevant to this study as it

will aid the researcher in the processes involved in highlighting some achievements and the limitations of the UKZN food security programme with the aim of improving its efficacy.

1.4 Significance of study

This study is motivated by the current trend of food insecurity complexities observed in South African IHL. It is aimed at enhancing improved national policy framework and adequate interventions in addressing the growing problem of student food hunger and its implication on the country's economic prospects. This analytical dimension of the study area has not been fully explored in South Africa. The study is instructively timely and situated when South Africa lacks clear policy framework to address the increasingly and complex food poverty amongst IHLs students in need. The absence of a policy framework to orient IHLs to address poverty-related problems such as hunger, has prompted some institutions to come up with their own initiatives of addressing the phenomenon to enhance students' wellness and academic excellence. The aforementioned also provides a good justification for conducting this study as a means of gaining an in-depth understanding of various perspectives of analysing the notion of food insecurity, and prospects for and challenges of managing food security programmes.

The study identified that student food insecurity issues at an IHL like UKZN is appropriate because of the high enrollment levels of students from historically disadvantaged populations. The UKZN implemented the FSP in 2012 to help address hunger among students in need. In addition, it is more than six years since the FSP was implemented at UKZN, making it possible for evaluation. Evaluation research can inform social action by providing relevant feedback for management and administrative purposes by supporting the oversight functions of the stakeholders such as authority, sponsors and funders to which the FSP is accurately accountable (Rossi *et al.*, 1999).

1.5 Problem statement

The study purports that efforts to address food insecurity in South African institutions are not seen as an integral part of South Africa's economic transformation agenda. As a result, institutions like UKZN have come up with their own measures of addressing the problem.

1.6 Main objective

The main objective of this study was to recommend sustainable ways in which the Food Security Programme as an intervention for food insecurity, can be implemented at UKZN. The study also aimed at the following specific objectives:

Specific-objectives:

1. To assess the prevalence food insecurity among students at UKZN.
2. To assess the awareness level of food insecurity prevalence and perceptions regarding food security interventions at UKZN.
3. To determine the operationalisation of food security/insecurity and interventions as evidenced at UKZN.
4. To identify the policies guiding the implementation of the FSP at UKZN.
5. To determine the extent to which the FSP meets its intended objectives and enhancing students' academic performance at UKZN.
6. To identify the management challenges of the food security programme as evidenced at UKZN.
7. To propose recommendations to meet the intended objectives of the FSP and its impact on students education at UKZN.

1.7 The study parameters and general assumptions

The research concerned respondents from the UKZN. Hence, the results will not be applicable to all IHLs. In addition, the use of the modified HFIAS nine-item measure in the questionnaire, limits the comparability of results to other studies that used the original HFIAS nine-item measure to assess the prevalence of food insecurity at household level. Further, unlike the HFIAS, the questions on students' food insecure questionnaire and methodology were designed to apply to the individual student and not a household. However, an additional item related to vulnerability to food insecure was included in determining the self-reported eating habits by the students 'on a normal circumstance'. Furthermore, while evaluation studies are undertaken to find out whether interventions actually produce the intended effects, such assessments cannot be made with certainty but only with varying degrees of plausibility (de Vaus, 1986).

1.8 Definition of terms

Academic performance: The extent to which a student has achieved his or her academic expectations during the semester.

Historically disadvantaged: South African population that is economically poor. In particular, it refers to South African citizens who due to the apartheid policy (Act 110 of 1983 Constitution of the Republic of South Africa) had been disenfranchised (Republic of South Africa, March 2017). Therefore, it follows that in post-apartheid South Africa, the majority of the poor fall into the historically disadvantaged groups.

Perceptions: A person's ways of understanding and interpreting information about a phenomenon (e.g food security or insecurity) emerging from previous experience, beliefs, likes and dislikes and other psychological factors from unknown source. (Barrios & Costell, 2004).

Policy: A planned set of actions on rules and regulations of government, an organisation or an institution, and measures taken to realise them (Weimer & Vining, 2017).

Programme: Planned set of expectations, procedures and activities to produce specific results (Pawson & Tilley, 1997). An example of a programme is food aid efforts.

Programme management: The process of managing various related projects with the purpose of improving an organisation's performance (Pawson & Tilley, 1997).

Students: Individuals studying for a diploma or degree programme in the university.

Student food insecurity: When students as individuals, lack adequate food and a nutritious diet, which is safe and socio-cultural acceptable at all times for an active daily life. The students' active daily life may include attending to all their academic needs during the semester.

1.9 Structure of dissertation

Table 1.1 presents a summary of the chapter divisions of the thesis. The table also outlines the four manuscripts, contributing to this study findings.

Table 1.1: Structure of dissertation

Chapter line up	Overview	Objective	Publication
Chapter One Introduction, the problem and its setting	Introduction		Not applicable.
Chapter Two Literature review, Research manuscript 1	Conceptual framework for food security. Literature review-student hunger. Theoretical framework.		<i>Journal of Consumer Sciences- Special Edition on Food and Nutrition challenges in Southern Africa.</i>
Chapter Three Methodology	A detailed discussion of study methods.		Not applicable.
Chapter Four Research Manuscript 2	Food insecurity prevalence and perceptions among students.	1	Under review: <i>S Afri J Nutri.</i>
Chapter Five Research Manuscript 3	Perceptions about student food insecurity, and awareness of food insecurity interventions.	2&3	(Work in progress)
Chapter Six Research Manuscript 4	An evaluation of the FSP, UKZN.	4,5&6	(Work in progress)
Chapter Seven Proposed UKZN food security programme framework.	Presenting a framework as a toolkit for managing UKZN food security programme.	7	Not applicable.
Chapter Eight	Conclusions and recommendations.	1,2,3,4,5,6 &7	Not applicable.

1.10 Referencing style

The referencing style used in this dissertation is according to the guidelines used in the Discipline of Food Security, University of KwaZulu-Natal, Pietermaritzburg.

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CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter presents a critical review of various perceptions of food security and insecurity (section 2.1-2.5). The section 2.6 focuses on how the issue of food insecurity affects individuals attending higher education in a developing country such as South Africa. Hereinabove, section 2.6 presents the author's reviewed journal manuscript which forms part of this chapter and the dissertation. This manuscript focuses on student hunger as a rising phenomenon in South Africa's IHLs such as the UKZN. More specifically, it discusses student food insecurity, as a critical issue, which has been neglected on the national agenda despite its implication on the students' education and the country's labour market. Section 2.7 proceeds to discuss the theoretical position of this study and section 2.8 ends with a chapter conclusion.

2.1.1 Food security: Historical context

The world food crisis of the early 1970s and the subsequent United Nations World Food Conference of 1974 put the aspect of 'food security' on the global development agenda (Simon, 2012: 16). In recent times, the issue of food security has remarkably gained international dominance on the United Nations agenda as evidenced by its prominence in the extraordinary meetings of the United Nations General Assembly [in 2000] that approved the Millennium Development Goals (MDGs) and the subsequent Sustainable Development Goals (SDGs) [in 2015] (Sachs, 2012). At the "2000 United Nations' MDGs summit", world leaders pledged to eradicate some global pressing problems among them abject poverty and hunger [between the year 2000 and 2015]. In an effort to improve on sustainable development, the United Nations introduced 17 SDGs, which would run from 2016-2030 (United Nations, General Assembly, 2015).

Despite such remarkable measures to eradicate abject poverty and hunger at global level, the number of people experiencing food insecurity is reportedly high especially in the global South (predominantly developing regions including sub-Saharan Africa) where 220 million people of the overall population were experiencing hunger and malnutrition in 2014 (FAO, IFAD & WFP, 2015: 12). A report by FAO, IFAD & WFP (2015: 12) on the state of global food insecurity revealed that nearly 795 million of the global population predominantly from

developing regions, were undernourished mainly due to food insecurity. As a result, there are expectations in the global South to meet the Sustainable Development Goals. It is important to note that in developing countries like South Africa, the protracted food insecurity is often linked to socio-economic inequalities. Accordingly, at the national level, efforts to address food insecurity often stem from social-economic policies such as access to better nutrition, education, and healthcare (FAO, IFAD & WFP, 2015: 42).

In particular, individual/household food insecurity is associated with individual/household poverty. Whereas measures to address emergency hunger and food insecurity include food aid and nutritional programmes such as school feeding schemes, the latter is a common intervention in South Africa, and the government allocates billions of Rands per year to address the problem among the school age (DBE, 2014: 4-5). Seemingly, such remarkable measures have not been extended to resource poor students attending IHLs in South Africa. Accordingly, food insecurity issues are reportedly high amongst the students (Mtshali, 2013). This study broadly investigates food insecurity issues in South African IHLs and the potential impact on the students' educational outcomes and the country's economic prospects. In particular, the study assesses how such issues of food insecurity are perceived and addressed at IHLs such as at the UKZN.

2.2 Food security conceptual issues

Food security concerns have been widely conceptualised, analysed and published in the scholarly literature, policy documents, and the media by various proponents. Section 2.2.1 presents some of the major conceptual issues relating to food security.

2.2.1 Defining food security

Despite that the term 'food security' was authored in the 1970s, until now there is no universally accepted or exhausting definition of food security. In recent times, some food security analysts, Gentilini (2002) identified nearly two hundred and five definitions of food security. Still, other analysts Smith *et al.* (1993) identified approximately two hundred different definitions. Broadly, food security can be defined as the ability of individuals to obtain sufficient food on a daily basis. However, the definition approved by the 1996 World Food Summit of the World Food Programme (WFP) is the most widely accepted and used. Simon

(2012) noted that the definition is also believed to be one of the most important achievements of the 1996 World Food Summit. The WFP states “Food security exists when all people, at all times, have physical, ‘social’ and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (World Food Summit-WFS, 1996). In 2002, the WFP saw it fit to add the term ‘social’ to the 1996 definition (Gentilini, 2002). In all, the WFP definition is relevant to this study as it provides some insightful and useful conceptual elements for analysing the aspect of food security.

2.2.2 The four basic dimensions of food security

Some notable elements or dimensions of the WFP definition of food security include availability; access; utilisation; and stability. These four elements have been extracted from the WFP defining and are widely viewed to be the most basic or the ‘pillars’ of food security and will now be discussed further.

2.2.2.1 Availability

Availability is the first dimension of food security. This concept describes the physical availability of food or the ‘sufficiency’. Availability relates to supply of food determined by the level of production, net trade and stock levels (Headey & Ecker, 2013; FAO, 2008). It implies that a country must have ‘sufficient’ quantities of food available on a consistent basis both at national and household level. The WFP (2009) holds a view that, food availability is the amount of food present in a given area or country in the form of domestic production, imports, food stores and food aid. This is not limited to the net commercial imports and exports; it also includes local communities and households. Shaw (2007: 4) recounts that previously, food security analysis was limited to availability of food. This resulted from the perception that hunger is primarily caused by poverty, and that poverty leads to ‘food shortage’ or ‘lack of availability of food’. Such a perception that availability of food commodities would automatically lead to food security resulted in improved global agriculture production such that, the food production is sufficient to feed the growing global human population in terms of macronutrients (Headey & Ecker, 2013; Simon, 2012: 5). In contrast, millions of people do not have access to sufficient food. As such, it is realised that food security cannot be limited to the availability of food, it includes other factors such as the accessibility of food.

2.2.2.2 Access

Food access is the ability of a nation and its' households to acquire sufficient food on a sustainable basis. In the WFP definition, it refers to having physical, economic and the social 'access'. The WFP (2009) describes food access as a household's ability to acquire sufficient food on a regular basis through a combination of "purchases, barter, borrowing, food assistance or gifts". There are three elements that describe the access dimension of food security: physical, financial and socio-cultural.

The physical element refers to a logistical aspect of acquiring food such as transportation and information to those who need it. It implies that food is readily available at a location where individuals, households, or the community can access it (Maxwell *et al.*, 1999). The financial element refers to the economic aspect such as being able to afford to buy food. From this perspective, food commodities are readily available where the human population needs it and households have the financial ability to acquire amounts of food to meet their requirements. However, high food prices can inhibit the food access or food security at household level and this can lead to some negative reactions from people. A practical example is the 2008 World food prices that led to incidents of food riots and protests in some parts of the world (Porter *et al.*, 2014; FAO, 2011). Concerns about food access have resulted in a greater policy focus on incomes, expenditure, markets and prices in achieving food security objectives. The FAO (2008) contend that measures to enhance direct access to food are more likely to be beneficial if these are embedded in more general social safety net programmes such as:

- Targeted direct feeding programmes: These include school meals; feeding of expectant and nursing mothers as well as children under five through primary health centres, soup kitchens and special canteens.
- Food-for-work programmes: These provide support to households while developing useful infrastructures such as small-scale irrigation, rural roads, buildings for rural health centres and schools.
- Income-transfer programmes. These can be in cash or in kind, including food stamps, subsidised rations and other targeted measures for poor households.

The third element of food access dimension is the social-cultural aspect. From this perspective, whereas food may be readily available and affordable to the consumers, there may be some socio-cultural barriers to food access by some vulnerable groups in society. Simon (2012), echoed that this dimension of analysing food security in social-cultural context has not been fully explored. However, the present study purports that such social-cultural barriers to food access could be influenced by certain negative beliefs regarding some food security interventions such as food aid. A practical example is, where food aid may be readily available to those in need but some individuals may be too shy or uncomfortable to be seen accessing free food in their communities, as this would trigger stigmatisation. In the context of this study, some food insecure students in tertiary institutions may be reluctant to access food aid provided by the university community due to the negative beliefs attached to the provision of free meals among the students. In turn, food insecure students may be prone to chronic food insecurity and poor health.

2.2.2.3 Utilisation

According to the WFP definition, food utilisation refers to safe and nutritious food that meets their dietary ‘needs’. Here, the quality and safety of food is a critical factor as it includes the selection of food commodities, their conservations and preparation as well as absorption of nutrients in the human body. Hence, food utilisation can be understood as the way a human body makes out of the various nutrients from the food and nutrient intake resulting from dietary diversity, feeding practices, food preparation, and intra-household/individual distribution of food. The nutrition status of individuals is determined by good biological utilisation of the food consumed (Chung *et al.*, 1997; Maxwell *et al.*, 1999). From this perspective, knowledge of basic nutrition, dietary habits, clean water and sanitation, and healthcare play a critical role in ensuring food security. The food utilisation element confirms that nutrition is directly linked to food security and as such, there is hardly food security when the human population is not properly nourished.

2.2.2.4 Stability

Food stability is the fourth dimension of the food security definition. In the definition, stability refers to ‘at all times’ (Maxwell *et al.*, 1999; Maxwell & Smith, 1992). This element has to do with the stability of the other three dimensions (availability, access and utilisation) of food

security over time. Under the stability aspect, food security is not limited to any period such as a moment, a week, a month or a year, but should be on a permanent basis with sustainability. In addition, in the absence of stability, chronic and transitory food insecurity occurs. Further, it implies that, if an individual has adequate nutritious food intake today, they are regarded food insecure if they lack a stable food supply on a periodic basis, as their nutritional status would risk being compromised. Food security may be difficult to achieve and maintain especially in situations where there is credit crisis, which usually affects food prices (Maxwell *et al.*, 1999). In addition, adverse weather conditions, political instability or economic factors may also have a negative impact on an individual's food security status.

Another critical element of the 1996 WFP definition of food security is 'food preferences for an active and healthy life'. Literature by Simon (2012: 8) shows that the element related to food preferences could be analysed and linked to household and individual level and compared to what food sovereignty is at the national level. Food 'preferences' imply that individuals should have the ability or the prior right to choose their preferred food. The 'active' and 'healthy' life aspect means that to be food secure individuals should eat a healthy diet (food that meet a minimum calorie intake) to maintain a healthy life including the ability to conduct their day-to-day activities.

In all, the literature presented shows that food security is a multifaceted phenomenon, determined by many factors including agro-physical, socio-economic, political, and biological factors. Given the complexity of analysing food security, it is usually food insecurity that is assessed or analysed, to determine the factors that may have affected food security and to decide on appropriate interventions (Simon, 2012: 8). Figure 2.1 summarises the four dimensions of food security.

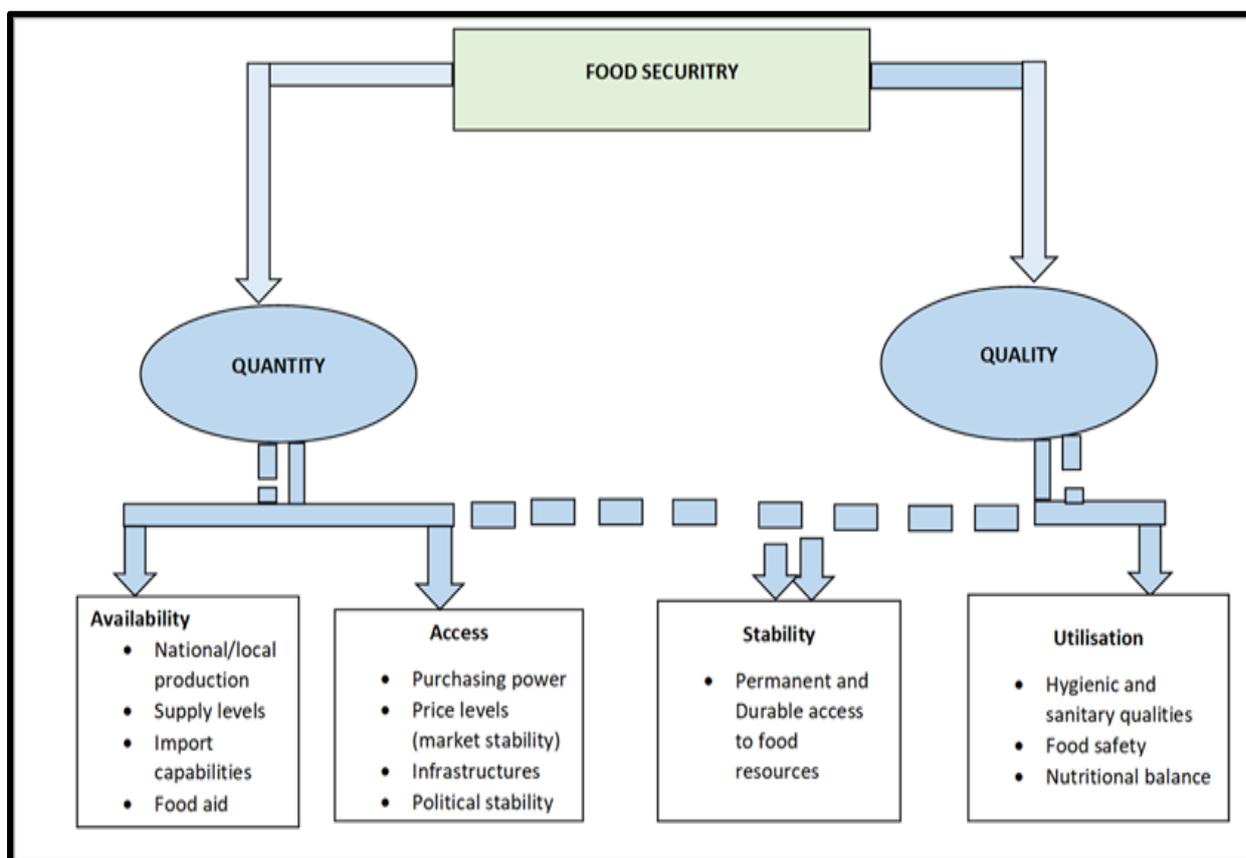


Figure 2.1: Food security dimensions³

The preceding section of this chapter discusses the aspect of food insecurity.

2.3 Food insecurity

Food insecurity is a multi-dimensional phenomenon that manifests in different ways and occurs at different levels namely:

- i) National;
- ii) Regional;
- iii) Community;
- iv) household and;
- v) individual level.

³ Figure 2.1 was adapted from the ‘Momagri website’. Available: <http://www.momagri.org/UK/focus-on-issues/Food-Security-A-Timely-Political> [Accessed 12/12/2017].

Therefore, the food insecurity may have several determinants or causal factors that are associated with the level at which they may influence it. According to Simon (2012), food insecurity factors and the level at which the causal factors occur include i) the economy or level of income of the country, community or individuals (considered as immediate causal factors) and ii) the biological factor (age, gender, ethnicity) of individuals (as non-modifiable causal factors) and the job availability or employment status, educational level, social demographic and political environments (modifiable causal factors). Simon (2012) argues that these causal factors further translate into indicators that are widely used by analysts to determine the status of food insecurity at national, community, and household/individual level.

The FAO defines food insecurity as the state of being without reliable access to sufficient safe and nutritious food for consumption to foster normal growth and to live an active and healthy life (FAO, 2008). From this perspective, food insecurity may be caused by lack of food (no availability); lack of resources (no access); improper use (no proper utilisation); change in time (no stability). As a result, food security and food insecurity may occur interchangeably depending on the duration and the causal factors.

2.3.1 Duration of food insecurity

Food insecurity is a complex process that can be manifested according to duration. Likewise, the FAO (FAO, 2008) identified the following (and these will be discussed in detail):

- (i) Chronic food insecurity;
- (ii) Transitory food insecurity to show the process and the duration of food insecurity.

2.3.1.1 Transitory food insecurity

Transitory food insecurity is a temporary food deficit, which affects households or individuals when there is a precipitous drop in the ability to produce or access adequate food or dietary diversity to maintain a good nutritional status (Headey & Ecker, 2013; Maxwell *et al.*, 1999). It emanates from short-term shocks and fluctuations in food availability and food access (Maxwell *et al.*, 1999). The FAO (2008) noted that transitory food insecurity could emanate from year-to-year variations in domestic food production, food prices and household incomes, and echoed that the phenomenon is quite unpredictable such that it can emerge suddenly.

Consequently, it makes planning and programming more cumbersome and it requires different capacities and types of intervention, including warning capacity and safety net programmes (FAO, 2008). At the household level, it affects individuals or households that are able to meet their minimum food requirements at normal times but are unable to do so after a shock (Headey & Ecker, 2013; WFP, 2004). As a result, the level of consumption is briefly pushed to below the requirements.

2.3.1.2 Chronic food insecurity

Chronic food insecurity is long-term or persistent inability to meet food consumption requirements (Devereux, 2006: 11). People experience chronic food insecurity when they are unable to meet their minimum food requirements over a sustained period. The (WFP, 2004: 8) argues that populations affected by chronic food insecurity “are unable in normal times to meet food needs because they lack sufficient income, land or productive assets, or experience high dependency ratios, chronic sickness or social barriers”. In this context, households are constantly at risk of being unable to acquire adequate or minimum food to meet their dietary needs of all members (Chung *et al.*, 1997; Maxwell *et al.*, 1999). The problem of chronic food insecurity could be overcome with typical long-term measures used to address poverty and enhance development such as education, employment, or access to productive resources such as loans or credit. This study purports that chronic food insecurity among university students could be overcome with sufficient and sustainable student funding for students in need. The FAO (2008) echoes that individuals affected by chronic food insecurity need more direct access to food, which enables them to raise their productive capacity. In view of the complex nature of chronic food insecurity, the proceeding section (2.3.1.3) of this chapter, discusses the ambiguity of food insecurity duration.

2.3.1.3 The ambiguity of food insecurity duration

Transitory and chronic food insecurity are often linked together to imply different duration of food insecurity with the former being equated to ‘acute’ food insecurity and the latter is equated to ‘moderate’ food insecurity (Devereux, 2006: 11). On the contrary, Devereux, (2006) also argues that despite being conceptualised in terms of duration, the definition of transitory and chronic food insecurity rarely specify periods. However, a more relaxed concept of chronic food insecurity and transitory food insecurity is ‘seasonal food insecurity’, which is usually

predictable and follows a sequence of known events (Headey & Ecker, 2013). In this view, seasonal is an intermediate category of food insecurity. Often, seasonal food insecurity is said to be more related to chronic food insecurity. However, due to its momentary process, seasonal food insecurity is of limited duration. As a result, it is also considered transitory. Seasonal food insecurity exists when there is a cyclical pattern of inadequate availability and access to food. In addition, it is associated with seasonal fluctuations in the climate, work opportunities (labour demands), disease and cropping patterns (FAO, 2008). In light of these conceptual differences presented, it is argued that there are overlaps between transitory and chronic food insecurity. It is also important to note that other critical factors associated with food insecurity include hunger, malnutrition, and poverty.

2.4 The interrelationship of food insecurity, poverty, hunger and malnutrition

Hunger, malnutrition and poverty have been identified as determinants of food insecurity as detailed in section 2.4.1.

2.4.1 Hunger

Scientifically, hunger is as an uncomfortable or painful sensation caused by insufficient food energy consumption by households or individuals (Barrett & Lentz, 2013; Weaver & Hadley, 2009). In the context of food insecurity, hunger is food deprivation. From this perspective, all individuals who suffer from hunger are food insecure; however, not all food insecure individuals are necessarily hungry. This is because there are some other causal factors of food insecurity including those that relate to poor intake of micronutrients such as iron, iodine and vitamin A. Many analysts note that hunger, a common phenomenon among the poor is a threat to their livelihood because it leads poor health (malnutrition, mental illnesses) and death, in extreme cases (Adams *et al.*, 2008; OECD, 2001; World Food Programme, 2004; Sorsdahl, *et al.*, 2011; Weaver & Hadley, 2009).

2.4.2 Malnutrition

Malnutrition is a resultant effect of deficiencies, excess or imbalances in macro and/or micronutrients in humans (FAO, 2008). Malnutrition is caused by several factors including food insecurity and poverty (Chung *et al.*, 1997). The FAO (2008) noted that malnutrition also is caused by non-food factors such as inadequate care practices (especially for children), lack

of health services, and an unhealthy environment. Therefore, like hunger, malnutrition is a public health concern. In resource-poor regions, people who are malnourished often suffer from deficiencies of micronutrients mainly due to poverty. Therefore, given that hunger and malnutrition are a threat to public health; they are among the major causes of death especially in developing regions where the majority of the population is poor. Within the context of food security, the relevance of nutrition demands broader understanding, recognition and responses such as socio-economic policies and sustainable interventions such as nutritional programmes that can effectively address the persistent phenomenon (Barrett & Lentz, 2013; Maxwell *et al.*, 1999). The dynamic nature of food insecurity is directly linked to poverty.

2.4.3 Poverty

Poverty is the general state of being poor and the inability to meet subsistence needs (Devereux, 2006). However, a broader understanding of poverty is presented by OECD (2001) that states, poverty encompasses various dimensions of deprivation that relate to human capabilities including food security and consumption, dignity, health, education, rights, voice, security, and decent work. Individuals who experience poverty have little to no resources such as money, goods, or means of support. In contemporary times, poverty is increasingly recognised as a key determinant of food insecurity (Barrett & Lentz, 2013; Maxwell *et al.*, 1999). In this context, food poverty could be understood as the occurrences of food insecurity, or the extent to which people live without basic recourses including money to purchase food, goods and services and the mental ability to make proper decisions to live and maintain a standard of living (Booth & Smith, 2001). A study by Dixon *et al.* (2001) in the USA on household food security revealed that adults from food insecure households were vulnerable to compromised diets threatening their health, compared to adults from food secure families. From the same study, it emerged that anxiety about the availability of food affected a person's social or mental wellbeing thereby creating feelings of irritability and depression. Quite simply, poverty is undoubtedly the cause of hunger whereas "lack of adequate and proper nutrition is itself the underlying cause of poverty" (FAO, 2008: 3). As such, poverty, food insecurity and malnutrition are naturally interrelated. Figure 2.2 demonstrates the interrelationship of food insecurity, malnutrition and hunger.

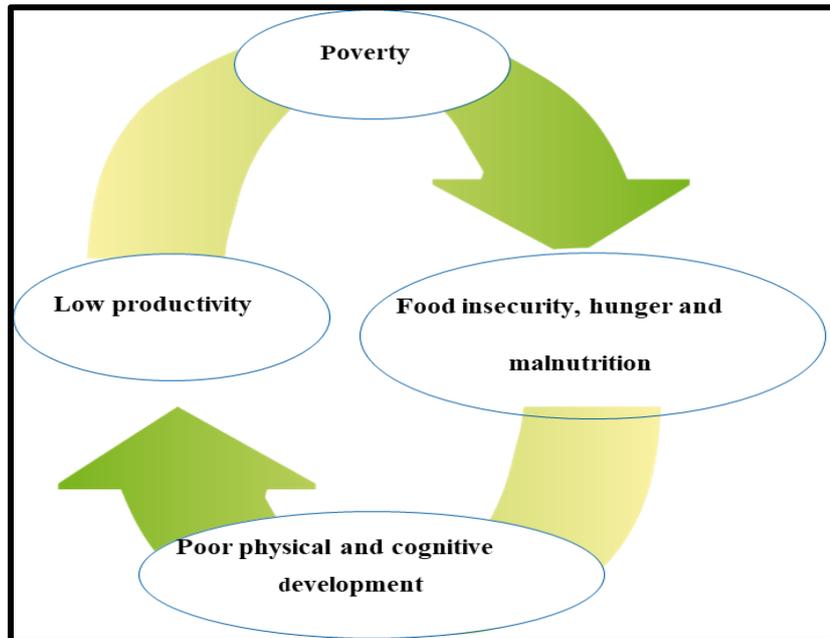


Figure 2.2 The interrelationship of poverty, food insecurity, hunger and malnutrition

Adapted from: FAO (2008: 3)

Figure 2.2 shows that food insecurity is a multi-faceted phenomenon that operates at a different level, and as such, there are with various ways of understanding it. The importance of analysing the concepts of food insecurity, malnutrition and poverty is that it helps in fostering better food security responses at both macro and micro level. The analysis of food insecurity has implications for both emergency interventions such as food aid programmes and sustainable food security interventions such as food security policies.

2.5 Historical background of food security in South Africa

Historical records show that in South Africa, food security-related concerns date back to 17th century when the arrival of the Dutch East India Company was driven by the need to grow fresh vegetables and fruit to facilitate good nutrition and wellbeing of the travelers on the long trade route journeys from Europe to the East (Hendriks, 2014: 2). Van Zyl & Kirsten, (1992) recount that during the Apartheid administration (1948-1991), South Africa equated national food security with commercial farming, a sector dominated by white South Africans. Van Zyl & Kirsten (1992) noted that much of the agricultural policy focused on self-sufficiency through commercial productions especially during the period of the country's international sanctions.

In an effort to recognise the need for food security, the Apartheid government's 1984 White Paper on Agricultural Policy stated:

For any country, the provisions of sufficient food for its people is a vital priority and for this reason, it is regarded as one of the primary objectives of agricultural policy. Adequate provision of this basic need of man not only promotes but it also an essential prerequisite for an acceptable economic, political and social order and for stability (RSA, 1984: 8-9).

This recognition did well to improve and maintain food security such that until now, South Africa is deemed food secure in terms of national food availability (Devereux & Waidler, 2017). It is argued that despite this important concern for national food security by the Apartheid government, it did little to improve food security at the household level as significantly many South Africans were poor and they could not afford food that meets a minimum calorie intake to live a healthy life. This is evidenced by 41% of South African children from very low income households who were experiencing hunger and malnutrition at the end of the apartheid Government in 1994 (Devereux & Waidler, 2017: 4). The first national study of nutrition by, South African Vitamin A Consultative Group (SAVACG) in 1994 revealed that 25% of children aged 6-71 months were malnourished while 10% of them were underweight (Labadarios *et al.*, 1996).

The household food insecurity situation was exacerbated by high racialised socio-economic policies that disadvantaged the majority in the country as evidenced by high levels of poverty, especially among the Black Africans (Seekings, 2014: 9). For instance, the income percentage of households in each annual income quintile by race, shows that in 1995 the Black Africans' households were the poorest in the country with nearly 26% of them having incomes between R0. 00 and R6 839.00 per annum, compared with 12% of the Coloured households, and 2% of both Indian and White households (Hirschowitz & Orkin, 1996: 34). Woolard, (2002: 3) recounts that at the end of apartheid, the African National Congress (ANC) as a new government inherited an extreme racialised economy such that the Black Africans accounted for 95% of the poor in South Africa.

2.5.1 South Africa's perception of food security: Post-1994

Given the high rate of poverty, and malnutrition in the country, the ANC as a new government identified food insecurity and vulnerability affecting millions of households as a matter of urgency in South Africa. Accordingly, at the dawn of the constitutional democracy in 1994, South Africa's need to achieve food security was first recognised at household/individual level as evidenced by the 1996 National Constitutional Law in which socio-economic rights were clearly embedded. Section 27(1) of the Constitution stated 'Everyone has the right to have access to (a) health care services; (b) sufficient food and water; (c) social security' (RSA, 1996b). The Constitution requires that the state must take reasonable legislative and other similar measures within its available resources to achieve the progressive realisation of each of these rights.

This imperative recognition of the human rights is reflected in the various anti-poverty policies and programmes developed and implemented to meet the objectives of the Reconstruction Development Plan (RDP) of 1994 (Department of Agriculture-DA, 2002). Hendriks (2014) noted that the RDP identified food security as a basic human need and food insecurity as a legacy of the Apartheid government. In an effort to prioritise food security, the ANC government reprioritised public spending to focus on improving food security conditions of the historically disadvantaged populations. Subsequently, several government policies designed to address food insecurity were effected. This resulted in increased public spending on social programmes (across government spheres) such as social grants and the National School Nutrition Programme (NSNP) (Hendriks (2014). Section 2.5.1.1 and Section 2.5.1.2 presents a discussion on social grants and the National School Nutrition Programme.

2.5.1.1 Social grants

Social grants are one form of a government initiative that targets food insecurity in South Africa. The grants target poor individuals from the historically disadvantaged and vulnerable demographic groups including persons with disabilities, children and older persons. As a result, the social grants are in form of old age pension funds, foster care grants, disability grants, care dependency grants and child support grants. By 2016, 30% of South Africans received some form of social grants accounting for 44% of all households in the country (Devereux & Waidler, 2017: 7). In 2016, the Child Support Grant reached a significant number of poor children (11,

9 million) below 18 years of age and paid R350.00 per month, making it the most dominated social grant. The Older Persons Grant reached about 3.2 million people over 60 years of age and paid R1 505.00 per month; while R1 525.00 to over 75-year-olds (Devereux & Waidler, 2017 Stats SA, 2016). The disability grant was paid at R1 505.00 per month, the foster Care grant was paid at R890.00 per month; and the Care Dependency Grant was paid at R1 505.00 per month. These grants are shown to have improved food access and other basic household needs in South Africa. Stats SA (2012) documented that social grants contributed to 42% of household income in poor families and were the most important source of income. However, the reality is that not all South Africans who are eligible for the grants are managing to access them arguably due to strict regulations for selecting South Africans who qualify among several factors that keep the grants from reaching all poor citizens. A significant population (20%) of economically disadvantaged South Africans have no financial support from government and are living in abject poverty (Devereux & Waidler, 2017: 7; Stats SA, 2016).

A report by Stats SA (2017) showed that despite the expanded social protection policies, which include social grants for, disadvantaged children and adults; there was an increase in poverty trends by between 2011 and 2015 in South Africa. This is presented in Figure 2.3.

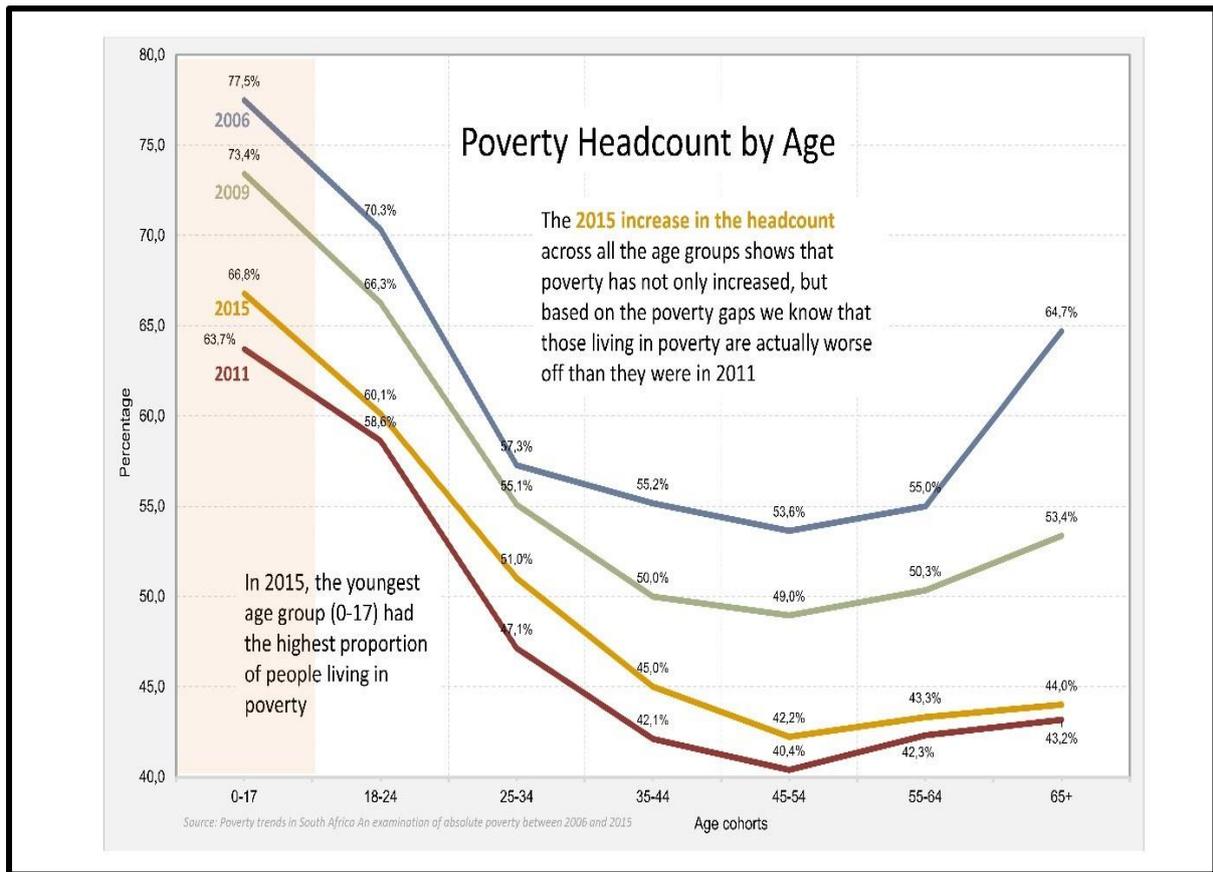


Figure 2.3: Poverty headcount by age –South Africa

Adapted from: Stats SA (2017: 1)

2.5.1.2 The National School Nutritional Programme

South Africa identifies food insecurity as one of the factors that pose a threat to health, and livelihood of the citizens. This critical realisation of the problem resulted in the establishment of nutrition programmes such as the National School Nutritional Programme (NSNP). As such, the NSNP is an important government initiative that directly addresses food security needs in South Africa. The NSNP is part of the National Policy on Food and Nutrition Security that provides a broad framework for the reorientation of food security interventions such as the nutrition services in South Africa (Department of Agriculture, Forestry and Fisheries-DAFF, August 2014). The main aim is to address nutritional needs among the most vulnerable groups in the country including school going children.

The NSNP is implemented through the School Feeding Scheme and it involves several government departments, including the Departments of Basic Education, Department of Health -DH, Department of Social Development-DSD and Department Agriculture-DA. It is aimed at alleviating short-term hunger; enhancing the learners' active learning capacity; and addressing certain micronutrient deficiencies (DBE, 2009: 1). The target beneficiaries are learners in quintile⁴ 1-3 Primary, Secondary and identified resource poor-'special schools' nationally. During school days, nutritious meals are prepared and served to learners. The meals provided follow the food basic dietary guidelines as recommended by the Department of Health that offers a variety of food items including carbohydrate, protein, fresh fruit and vegetables. In 2013/2014 financial year, the government allocated more than 5 billion Rands towards the programme that benefited a total average of 9, 131 836 learners in 19 383 schools nationally (DBE, 2014: 4-5). The programme has yielded positive results in terms of school access, alertness in class, retention and performance among the learners. As a result, barriers to learning associated with malnutrition and hunger are dealt with by providing nutritious meals to learners on all school days. Apart from providing free nutritious meals to enhance the learning capacity, the NSNP also promotes a healthy lifestyle among learners through nutrition education, and support the development of food gardens that promote food production in school communities (Hochfeld *et al.*, 2013; Rendall-Mkosi *et al.*, 2013).

While South Africa is succeeding in curbing learning barriers associated with hunger and malnutrition among the resource poor school children, it is imperative to note that, food insecurity is reported to be on the rise amongst students attending higher education in the country. Section 2.6 of this chapter is a journal review paper, it discusses food insecurity among students in institutions of higher learning, with a focus on UKZN.

⁴Quintile is a system of ranking and funding South African schools taking into account the socio-economic circumstances of learners (inequality and poverty). The poorest quintiles (1 and 2) receive more funding in terms of the norms and standards for Funding Schools (Hochfeld *et al.*, 2013: 6).

2.6 Complexities of Food Insecurity at UKZN, South Africa: a Review⁵

Abstract

Household food insecurity (FI) is a complex phenomenon challenging most sub-Saharan African countries and despite South African economic growth and decreased poverty levels, some households are still vulnerable to FI. The 2012 report by Statistics South Africa revealed that an average of 20% of households was still vulnerable to FI, the majority being the poor. Subsequently, FI could indirectly link to high dropout rates of students at Institutions of Higher Learning (IHLs) in South Africa. This threatens the country's economic advancement and transformation, as students' academic performance, degree completion and entry into the labour market are compromised. Post-2000, FI prevalence among students in South African IHLs has been studied, but there is still a knowledge gap with regard to how the phenomenon is perceived by IHLs. This study investigates the FI issues amongst students in IHLs using secondary data. Perceptions about FI among tertiary students in South Africa, particularly the University of KwaZulu-Natal, were reviewed based on the conceptual and theoretical lenses of 1) Maslow's Theory of Self-Actualisation; 2) the relationship between nutrition and cognitive power, and 3) the concept of food poverty and stigmatisation. The review shows that FI and academic underperformance in South African IHLs are challenging, complex and paradoxical. Recommendations for institutional responses are made.

Keywords: academic underperformance, poverty, social stigma, student hunger, self-esteem.

⁵ This section of the literature review chapter has been compiled into a peer-reviewed manuscript that has been accepted for publication in the Journal of Consumer Sciences. The entire manuscript was copied and pasted into this section of the literature review chapter with the exception of the references, which are presented in the References section of the chapter.

Introduction and research problem

Food insecurity (FI) has been identified as an emerging problem among university students including those in rich countries such as Australia (Hughes *et al.*, 2011), Canada (Nugent 2011), and the United States of America (USA) (Maroto *et al.*, 2015). At these institutions, FI among students is reportedly higher than the general population. In Africa, South Africa (SA), is no exception to the problem of FI. Rates of food insecurity vary across countries in sub-Saharan Africa, in South Africa (SA), 20% of households experience food insecurity (Statistics South Africa, 2012b). The 2017 report by Statistic South Africa shows that food poverty had increased by 2,8 million in headcount, from 11 million in 2011 to 13,8 million in 2015 (Statistics South Africa, 2017). The most vulnerable were low-income households. Most studies indicate that household FI and socio-economic burdens affect students in South African IHLs, especially those who come from low-income households (Letseka & Maile, 2008; Gwacela, 2013; Kassier & Veldman, 2013; Van den Berg & Raubenheimer, 2015).

The University of KwaZulu-Natal (UKZN) in SA counts among the most affected by FI complexities, given that 53% of its students come from economically disadvantaged backgrounds (Kassier & Veldman, 2013). A study by Munro *et al.* (2013) conducted between 2007 and 2010 confirmed that the UKZN, resource-poor students who are on financial aid were vulnerable to FI. The study also reported the potential impact of FI on the students' educational outcome such that by 2012 the UKZN saw the need to implement a food security programme to address the problem. Despite the reported high prevalence of FI among students and the subsequent implementation of FI intervention, there are few studies that examine perceptions of FI. Munro *et al.* (2013), Van den Berg & Raubenheimer (2015) concur that the issue of FI at IHLs is under-researched in SA. The objective of this study is therefore to review the subject of FI among students in IHLs, the potential impact on students' educational outcomes and economic prospects. The study will focus on UKZN, South Africa. Taking into account that the issue of FI at IHLs is under-researched in most developing countries like SA, the literature review will draw many examples from documented research findings conducted outside SA and most relevant to the topic in discourse.

Food insecurity in South African IHLs

The South African government plays a critical role in addressing the challenges of FI as it poses a threat to health, active life and the well-being of the citizens. This commitment is articulated in the Medium Term Strategic Framework for 2009-2014 (The Presidency, Republic of South Africa, 2009) and resonates with the Bill of Rights and Section 26 and 27 of the 1996 Constitution (Republic of South Africa, 1996) which stipulates access to sufficient food as a basic human right. In the 2010-2011 financial year, the South African government rated food security as one of the key priorities, as reflected in its millennium development goal aimed at halving the proportion of hunger and poverty levels in the country over the period 1990-2015 (Department of Agriculture, Forestry and Fisheries-DAFF, 2011). The realisation of food as a basic human right resulted in the establishment of nutrition programmes such as the National School Nutritional Programme (NSNP). The NSNP is part of the National Policy on Food and Nutrition Security that provides a broad framework for the reorientation of food security interventions (DAFF, 2014; Department of Basic Education-DBE 2009). The NSNP involves several government departments, including the DBE, and Health. It is aimed at alleviating short-term hunger; enhancing the learners' active learning capacity; and addressing micronutrient deficiencies (DBE, 2009). The targeted beneficiaries of the programme are children attending public schools coming from economically disadvantaged backgrounds. The NSNP has yielded positive results, as provisions of free nutritious meals at school have increased the school attendance and enhanced the concentration of learners (DBE, 2009; Rendall-Mkosi, 2013).

However, the NSNP is limited to school-going children and IHLs are not included. Ideally, the government through a student loan and bursary scheme called the National Student Financial Aid Scheme (NSFAS) addresses financial burdens of IHLs students. NSFAS is an agency of the South African Department of Higher Education and Training, that is governed by Act No. 56 of 1999 (Department of Higher Education and Training-DHET, 2014). Students qualify for a loan or bursary based on passing the NSFAS Means Test, which assesses their family's ability to pay something towards their studies. While NSFAS has been instrumental in providing financial aid to students from poor and working-class families, the aid is primarily directed to students who are in need of money to pay for their education including accommodation and

some stipend depending on the institution. In cases where stipends are provided, students have the autonomy to manage their own finances.

The NSFAS is usually inadequate to cover other important needs, especially the stipend for food (Letseka, 2007). This leaves students with the difficulty of finding options to close the financial gap, for example owing to the rising unemployment levels in the country, some students opt for the few part-time jobs available (Letseka & Maile, 2008). These financial gaps are among the critical factors that determine whether the student succeeds academically or drops out from a university.

The government is rigorously creating opportunities, such as increasing students' access to IHLs, which are the universities and Technical Vocational Education and Training (TVET) colleges. These institutions are perceived as primary sites for 'advancing the public good by sustaining an informed and active citizenry, reducing economic marginalisation, advancing science and innovation and ensuring quality progress in human capital development' (Motlanthe, 2010). It is possible to argue that the IHLs are integral partners in the successful execution of the 17 Sustainable Development Goals that aim to: 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture'; 'End poverty in all its forms everywhere', and 'Ensure inclusive and quality education for all and promote lifelong learning' (United Nations, General Assembly, 2015).

Meanwhile, the IHLs are burdened with the problem of students' delayed completion of their degrees, and high dropout and failure rates. A report by Letseka & Maile (2008) indicates that only 15% of students complete their degrees on time in South Africa. Nicole Murdoch, Executive Director for Teaching, Learning and Quality at the Monash University South Africa concurs with the assertion that the graduation rate among undergraduate students in 23 public universities in South Africa ranged from 15% to 20% in the recent years (Mtshali, 2013). Furthermore, the study argues that there is a need to look at students' problems holistically since the South African 2013/2014 Annual Report (DHET) mentions that hunger amongst students is a significant problem (Mtshali, 2013). Various statistics from across the country's IHLs also show that an average of 35% of students fail to complete their degrees, with 52%

dropping out of universities of technology, while 17% of the students do not complete courses at TVETs (Letseka, 2009).

Research has also shown that poverty significantly affects the students' academic performance, leading to low graduation rates, high failure, and dropout (Letseka *et al.*, 2010), which jeopardise the country's development prospects. The major problems that contribute to low student graduation rates include FI, as some go for days without having had a meal due to financial constraints (Mtshali, 2013). Munro *et al.* (2013) concur that students on financial aid are the most vulnerable to FI. Letseka & Maile (2008) had earlier warned that even when the NSFAS is granted to financially needy students; it is inadequate, as other needs such as food security could not be met.

Factors contributing to FI in IHLs

Social and economic backgrounds

Since the dawn of constitutional democracy in 1994, the SA government has placed great emphasis on education, as it is considered to be one of the key contributors to economic development. Hence, the government goal can be achieved if students in IHLs are actively engaged in academic activities, acquire relevant competencies and graduate on time. This would enable them to be absorbed into the labour market and contribute to the economic advancement of the country. Worldwide, governments recognise food security as an essential socio-economic factor, and the occurrence of FI amongst university students is not limited to SA since food insecurity has been found in university students from low-income households in, for example, the USA, Canada and Australia. FI impacts on physical and mental health and also negatively affects their academic performance (Kirkpatrick & Tarasuk, 2008; Hughes *et al.*, 2011). In SA, a study at the UKZN revealed that 55% of students, who perceived themselves as coming from low-income households, reported that they were food insecure because they had little or no financial support from their families (Gwacela, 2013). The study revealed that students used their bursaries to support their families. Research has shown that most students' guardians live on social security grants in SA. The social grants are given largely to old-aged family members, who use some portion of it on children attending school and IHLs (Neves *et al.*, 2009). It is reasoned that the portion of the grant used to support children attending higher education is largely used for tuition fees leaving almost nothing for food.

As stated earlier, in SA, students from low-income households may access NSFAS to cover mainly tuition fees and subsistence. However, a study by Letseka (2007) found that students on financial aid were faced with the problem of covering additional costs, including transport, purchasing food, books and stationery. In this context, the financial aid provided is highly compromised as it is usually split between different obligations to such an extent that it would not contribute significantly to the food budget. This results in the financial aid-dependent student being food insecure.

Income and financial mismanagement

Research has shown that there is a link between household income and food security. Likewise, high-income households are more likely to purchase food rich in nutritional value, compared to low-income households who purchase cheaper, refined grains added sugar and foods richer in vegetable fats (Kirkpatrick & Tarasuk, 2008). Foods of low nutritional value contribute to an inadequate dietary intake, which can cause health problems. This concurs with Kassier & Veldman's (2013) assertion that prolonged lack of nutritious foods can negatively affect students' health and academic performance. Kassier & Veldman's (2013) study also reported that food insecure students face the risk of missing classes and other academic commitments. With regard to IHLs students on financial aid, the high costs of tuition may directly affect the students' food budget, leading to FI and other implications such as academic underperformance.

Research has also revealed that financial risk behaviour among university student may trigger FI. In this context, regardless of the students' financial status, there is the likelihood of being FI due to financial mismanagement. Research by Mendes-da-Silva *et al.* (2012) in Brazil reported that, because students live independently in the university, they have the autonomy to spend their funds on luxurious items rather than on valuable items due to lack of financial experience and management skills. It is possible to argue that students who mismanage their finances do not prioritise valuable items such as nutritious food on their budget. A related study by Lyons (2007) in the USA shows that that financial mismanagement by students increased the likelihood of compromising their physical and mental health and consequently their academic performance. Taking into account these findings, it is imperative that students should

be oriented to financial education including budgeting skills, especially at first-year undergraduate level. A study by Ebebuwa-Okoh (2010), which examined the influence of financial status, gender and age on undergraduate students' academic performance at Delta State University in Nigeria, found that students who had financial means tended to spend money on luxuries rather than educational items such as books which could enhance academic performance. The study recommended practical solutions such as counselling to improve student academic performance.

In SA, studies have revealed that students from low-income households who had secured finance at IHLs faced the risk of FI caused by lack of financial management (Letseka, 2007; Gwacela, 2013). Financial mismanagement contributes towards misdirection of funds to other unnecessary items rather than purchasing healthy food. Letseka's (2007) study also reported that a large proportion of undergraduate students overspent on luxuries such as designer clothes, liquor and parties. Cumulatively, the reported research underscores the need to educate students on the importance of good financial management to enable proper dietary habits, good health maintenance and enhanced academic performance.

Food theft

Food theft is another contributing factor to students' FI. Food theft has been reported by some IHLs in different parts of the world (Chapman *et al.*, 2010; Gwacela, 2013; Van den Berg & Raubenheimer, 2015). Research conducted by Chapman *et al.* (2010) in Australia revealed that student perceptions of food theft as an unpreventable act were because the residential communal areas were open to all residents. The authors observed that food insecure students in universities resorted to food theft as a coping strategy, or as an emergency measure to securing food. Gwacela (2013) reported that, at UKZN, there was a high risk of food theft in students' residences that had communal kitchens. The study found that there was a high prevalence of FI among students who shared rooms because of food theft. The University of the Free State (UFS) in South Africa has recorded incidents of food theft among students who indicated that they stole food because of hunger and poverty (Van den Berg & Raubenheimer, 2015). These studies indicate food theft as a contribution to FI among students in IHLs and their possible consequences for academic underperformance.

The paradox of FI perceptions and perspectives

There are various definitions of food security. For example, the Food and Agriculture Organisation of the United Nations (FAO) states that food security ‘exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’ (World Food Summit, 1996: 1). This definition has some critical determinants including availability; access; utilization and stability. Therefore, the availability of adequate nutritious food at all times and one's access to it is critical, as it is an important socio-economic factor when analysing FI. Conceptually, FI is one's inability to access sufficient, safe and nutritious food. The inability to be food secure could result from poverty as most victims of FI are found to be poor - especially in the predominantly developing regions of the global south (FAO, International Fund for Agricultural Development (IFAD) & World Food Programme (WFP), 2015). Improper utilisation of food and poor diet can lead to illness, which can negatively affect students' academic commitments and educational outcomes (Hughes *et al.*, 2011). The complexity of household FI has continued to encourage various proponents, researchers and scientists to present their views and suggest means of addressing the problem.

Inadequate nutrition and health

The FAO, IFAD & WFP (2015) are of the view that food insecurity is a driver of health problems: food insecure people are prone to malnutrition, hunger and starvation. From this perspective, FI is an outcome of lack of access to food and poor dietary quality, which can contribute to both obesity and under-weight. Further, some authors, such as Donald (2010), have noted that there is a relationship between adequate food and nutrition, and physical health. Chen & Florax (2010) found an association between food consumption and health outcomes using Body Mass Index (BMI) among women of reproductive age. FI was found to be strongly correlated to higher BMI, indicative of overweight and obesity.

Similar studies conducted on FI among American women showed that food insecure households had more overweight individuals compared with food secure households (Adams, 2003). Overweight and obesity is becoming a public health problem linked to FI. Most households experiencing the risk of food insufficiency are vulnerable to this problem, as they tend to buy energy-dense foods that are cheaper and accessible to poorer households (Hughes

et al., 2011). A study by Jyoti (2005) showed an association between school-aged children from low-income households, who were at risk of hunger and a risk for psychosocial dysfunction. Given that food/nutrition insecurity is likely to negatively affect one's mental, physical health and academic performance (Lyons, 2007), this can have adverse effects on students' potential for economic and social development.

Food poverty

Food poverty could be understood as the occurrence of FI, or the extent to which an individual lives without basic resources (such as money to purchase food, goods and services and the mental ability to make informed decisions) to live and maintain a standard of living (Booth & Smith, 2001). A study by Dixon *et al.* (2001) in the USA on household food security concurred with this notion when it showed that adults from food insecure households are vulnerable to compromised diets threatening their health, compared to adults from food secure families. The study revealed that anxiety about the availability of food affected a person's social or mental well-being, by creating feelings of irritability and depression.

This view resonated with the findings of a national survey conducted by Sorsdahl *et al.* (2011) on food insufficiency and mental health in SA. This reported a pattern of results indicating an association between Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnoses and food insufficiency for the 12-month DSM-IV outcome. The study showed that respondents who reported food insecurity were more likely to have a 12 month DSM-IV disorder (anxiety disorder) compared with those who were food secure and/or had enough to eat over a 12 month period. The effects of poverty were also presented by Strobel (1996), who argued that they negatively impact social behaviour such as 'marginalisation' and 'stigmatisation', thereby increasing the risk of declining social cohesion. With regard to food security, individuals who were in most need of help from community support systems ironically disintegrated due to social stigma: discrimination encouraged community members to marginalise those who need help. 'marginalisation' and 'stigmatisation' have also been documented in some IHLs where food insecure students do not discuss their status openly due to the negative connotations attached to the phenomenon (Fekisi & Jaffer, 2013). Shreeves (2010) wrote about FI in the USA and referred to an article in the US publication, *The Atlantic*, which reported an increasing number of students in universities who frequently attended class

on empty stomachs but did not perceive their lack of food as a problem (Shreeves, 2010). It was noted that, even after the campus 'Food Closet' project was launched to address student FI at the University of California, students were ashamed to receive food aid. Similar views were shared by interviewed staff members from the UKZN Student Counselling Centre, who reported that one of the major challenges was that students did not admit that they were food insecure, which made it harder for the counselling staff to assist them (Khanyile, 2011 in Gwacela, 2013).

UFS, an institution confronted with FI complexities, reported that some interviewed food insecure students on campus were so ashamed of exposing their impoverished lifestyle that, when their peers offered to assist them with food, they felt that they were burdening their friends as they did not have anything to give back to them (Fekisi & Jaffer, 2013; Van den Berg & Raubenheimer, 2015). Some students were reluctant to apply for the food security aid on campus, 'No Student Hungry Programme', which they thought would expose their poor economic status on campus and trigger 'stigmatisation'. Students feared that they could be labelled as 'hungry students' who lack the means to feeding themselves.

Conversely, some studies have disclosed that community food support can have a positive impact on the psychosocial status of the targeted beneficiaries. Likewise, an impact study by the Wokingham Trussell Trust Food Bank (2014) on a community food bank in the United Kingdom, which reported that 81% of the respondents indicated that accessing free food from the community food bank made a significant positive impact, particularly on their mental and psychological status. The beneficiaries indicated that food handouts helped them reduce stress-related problems such as anxiety about where their next meals would come from. While this study did not specifically investigate the impact of food security on academic performance in IHLs, it significantly contributes to some perspectives of analysing FI interventions and their impact. This underscores the need for further research on the relationship between food security, social stigma and academic performance in IHLs.

Self-actualisation and well-being

Although there is no dispute about the relationship between nutrition and cognitive development, there is minimal evidence of the effect of FI on academic performance (Hamelin *et al.*, 1999). FI is often underestimated as a psychological and or emotional stressor that could cause or affect certain behaviours (Jyoti *et al.*, 2005). A study by Hamelin *et al.* (1999) in Canada confirmed low economic status could lead to depression, which could affect the cognitive stability and functionality limiting learning and brain memory structures and, ultimately, one's behaviour.

Abraham Maslow a behavioural scientist observed that human beings have specific needs, such as food, water and air, which should be gratified if they were to be high achievers or Self-actualised in their lifetime. Using his theory of human motivation perspective, Maslow (1954) presented a five-stage model containing a hierarchy of needs, which he sub-divided into basic needs, namely biological and physiological needs (McLeod, 2007). The hierarchy is premised on the notion that individuals must satisfy their lower level basic needs such as food and water before progressing on to the higher needs. As argued by Maslow, if the basic needs are not gratified they compromise higher-ranking needs such as Self-esteem and Self-actualisation (McLeod, 2007). In this context, food security meets the basic physiological need for food, whilst FI deprives that need.

Given this potential correlation between FI and academic performance, it is thought that if students' primary need of food security is not gratified, other factors related to academic performance could be jeopardised. Closely related to the concept of relating food security and academic performance are recent studies conducted by Kassier & Veldman (2013) on FI at UKZN. These revealed that university students who are food insecure tend to experience poor nutrition due to an unbalanced diet which is of poor quality and has low dietary diversity. Consequently, these students underperform academically. Although the above study points to a correlation between food security and academic performance, they are generalised and only consider the challenge of FI from the causal point of view. While analysing the issue of food security, Sorsdahl *et al.* (2011) noted that research on household FI seems to have received attention in developed countries such as Canada, Australia and the USA, it is under-reported

in sub-Saharan African countries, including South Africa. Hughes *et al.* (2011) reported that studies on food security and its impact on academic performance are limited to schoolchildren.

Institutionalisation of food security interventions

Unlike at basic school level, where the SA government addresses FI and nutritional problems through the NSNP, IHL students, mostly from low-income families are known to have survived on insufficient and less nutritious food (Fekisi & Jaffer, 2013). This could be attributed to an absence of policy to guide IHLs on how to address the challenge of FI, despite its acknowledged negative impact on students' education and the national economy. Nonetheless, the complexities of household FI have prompted some IHLs such as UKZN, to develop their own initiatives of providing food assistance to students in need. The food security programme was implemented at the UKZN in 2012 in response to increased cases of hunger among students. Its primary goal is to provide both counselling and food support in the form of food hampers or meal vouchers to students who are referred by designated staff, members of the Student Representative Council, or students who may identify students that are in need of food assistance. The programme also aims to create awareness about the challenges of FI and the threat it poses to students' academic performance.

The UFS, whose FI prevalence stands at 60%, has also implemented a 'No Student Hungry Programme' to address cases of student hunger in its community (Van den Berg & Raubenheimer, 2015). The research findings at the institution revealed that owing to the socio-economic disparities created by the former Apartheid regime, the previously disadvantaged populations such as Coloureds and people of African descent amongst undergraduates were most at risk of being food insecure. Other institutions, such as the University of Zululand (UZ) and Durban University of Technology (DUT), have institutionalised meal plans at some of the students' residences and dining halls where the NSFAS-funded students staying at university residences receive meal vouchers of a certain amount per day, which is used for redeeming or purchasing meals from the dining halls, (Gwacela, 2013). At DUT, it was observed that, although the dining hall system was effective in terms of addressing the students' hunger needs, there was a general tendency by some students who qualified for the vouchers to cheat the system by stealing for their friends who were excluded from the system. Thus, the relationships

between food and nutrition security/insecurity; food security interventions; cognitive power; self-esteem and actualisation may be both complex and paradoxical.

Conclusions and recommendations

From this research review, it appears that students at South African IHLs who suffer FI will additionally experience psychological and emotional stress as a factor that can impact negatively on health, self-esteem and motivation, leading to academic underperformance and can prevent self-actualisation. Due to a high prevalence of FI among students, some of the IHLs, including UKZN, have implemented student food security programmes as an intervention. These interventions have been met with complex and paradoxical reactions, such as ‘stigmatisation’ and ‘marginalisation’ of student beneficiaries, with the resulting reluctance of food insecure students to access the services. There is a need for a national policy to address the challenges of FI amongst students at South African IHLs and the associated negative perceptions about food security programmes. From this review, there are grounds to recommend that, alongside empowering students with knowledge of nutrition and basic skills in managing their food budget, practical interventions such as agriculture projects could be used to supply foods to IHLs. The review also suggests further empirical research on the scope of the FI in SA IHLs and the associated problems such as the psychological and emotional stress related to FI experienced by students.

2.7 Theoretical positioning

The proceeding section of the chapter presents the main theoretical position of this study.

2.7.1 Piaget's Theory of Cognitive Learning and Maslow's Hierarchy of Human Needs Motivational Model

The theoretical position is anchored in Maslow's Hierarchy of Needs Motivational Model and to a less extent, Piaget's Theory of Cognitive Learning (as outlined in Chapter 1). In addition, the food security impact evaluation framework also forms the theoretical backbone of this research.

Behavioural theorists and analysts such as Abraham Maslow and Jean Piaget perceive motivation as an important factor in human life. They argue that people's expectations guide their behaviour in ways that would bring desired outcomes. In particular, Maslow's Theory of Hierarchy of Human Needs is associated with the work of cognitively oriented theorist, Jean Piaget who posits that knowledge is constructed by the learner rather than being transmitted by the educator (Fischer, 1980). The Theory of Cognitive Learning holds that the ability of a learner to construct knowledge is dependent on intrinsic and extrinsic factors. Intrinsic action, a force that compels an individual to fulfil his or her inner potential and interests corresponds to the inherent desire of an individual to express his or her authentic self through selected or accepted actions or behaviour across different settings such a work environment or school environment. The extrinsic motivation is experienced when a person's actions are influenced by a desire to attain goal objectives or rewards. The notion of intrinsic and extrinsic helps us to understand human behaviour in relation to their environment such as workplace or school. Therefore, it could be reasoned that both intrinsic and extrinsic factors are motivating to certain actions or behaviour such as academic performance.

Food security and student's academic performance can be also conceptualised according to Maslow's Hierarchy of Needs Motivational Model. Abraham Maslow, a notable psychologist and postulator of the 'third wave' of humanistic movement, analysed human potential and the possibility of a more plenteous existence. He believed that exceptional people are self-actualisers who do not succeed by 'chance' or through 'luck' alone. He argued that human basic needs, plans and values play a critical role in their personal development. Subsequently, Maslow authored the Theory of Self-Actualisation in which he acknowledged the positive

aspects of human nature as his view of the person (Maslow, 1954). He believed that the entire tendency towards self-realisation or actualisation is the motive that underlies all human behaviour such that realising his or her potential is the individual's ultimate goal. In other words, that is where human development finally leads. Maslow's main belief was that human behaviour could be explained in terms of 'need gratification' and presented the human as a 'yearning being' who is rarely satisfied such that when one need is gratified then another need surfaces.

He argued that needs' gratification was not only a way of relieving one's tension, but it is also the basis for growth and realisation of an individual's full potential through self-actualisation. Maslow explained his view of how self-actualisation is attained, by presenting a five-level Hierarchy of Needs Model representing successive stages of development (Physiological needs, Safety and security needs, Love and belongingness needs, Self-esteem needs, and Self-actualisation needs) from lower to higher needs as demonstrated in Figure 2.4 below.

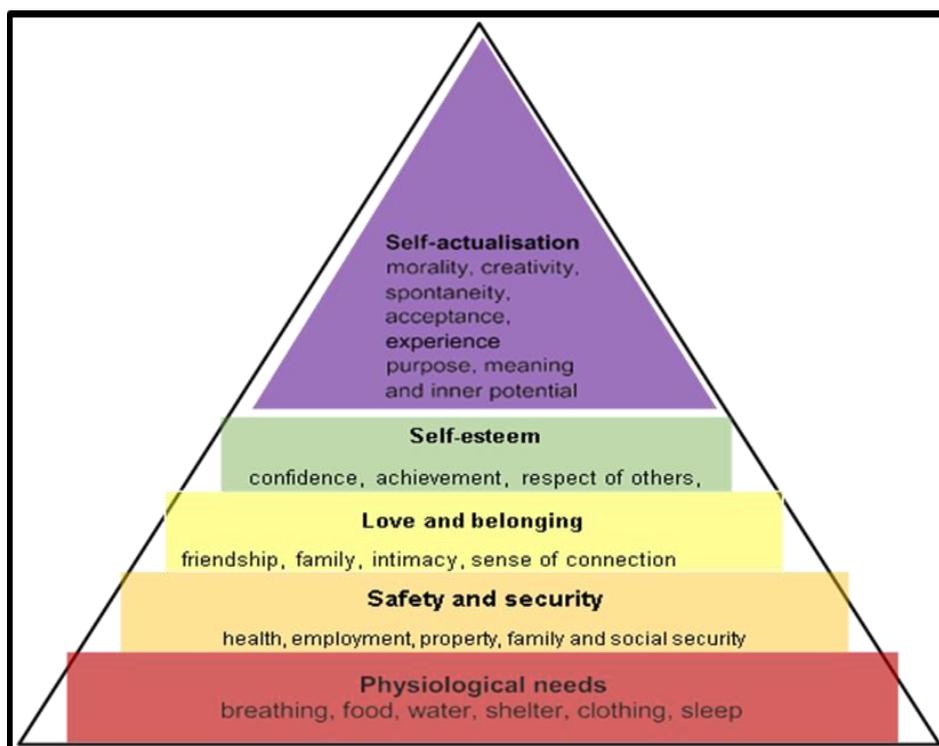


Figure 2.4: Maslow's Hierarchy of Human Needs Motivational Model

Adapted from: Maslow (1943: 370-396)

Maslow's Hierarchy of Human Needs Model is sometimes criticised for not being 'very scientific', (Nain, 2013; Wahba & Bridwell, 1976), however, the Model provides a platform for understanding human behaviour. Supporting this view, quite an interesting empirical research by Tay & Diener (2011: 364) on *Needs and Subjective Well-being Around the World*, found evidence of universal predictors of human needs hypothesised by Maslow (1954). However, the study also found that while the needs tend to be achieved in a particular order, the order through which they are attained has no strong influence on one's subjective wellbeing.

Therefore, Maslow's model is pivotal to this study because it relates to behavioural needs such as the academic performance of students facing food insecurity in IHLs. Understanding whether to achieve a particular need is necessary or not, can be a helpful basis for identifying a driver within a given behaviour and thereby assess how food insecurity and self-esteem among students in need, fits into the model. It also enables one to understand how the concept of self-actualisation relates to the present day challenges of food insecurity and academic performance amongst the students. The model claims that once a human need is satisfied, the person moves onto the next. However, the application of this interpretation will not automatically produce a smooth analysis. In the context of this study, the assumption is that with basic necessities such as counselling and nutritious food access, students can be motivated to realise their full potential of performing better academically and become self-actualised or the tendency to become actualised in what they are potentially good as proposed by Maslow.

Maslow's views are critical to this study, as they constitute some important structural elements (the hierarchy of needs) which are the basis for human behavioural analysis. Whereas the needs are hierarchically arranged, the person's development, progress through successive stages of need gratification towards the goal of self-actualisation. In other words, the lower the needs in the hierarchy, the more urgent it is which means that lower needs such as hunger or food insecurity must be gratified before needs at higher level manifest themselves. Whereas Maslow argued that human development proceeds in accordance with the hierarchy of needs, he acknowledged the likelihood that different levels of motivation could occur at any time in human mind. He, however, focused on identifying the basic types of motivation including the order in which they should be met as explained in the proceeding section of this chapter.

2.7.1.1 Physiological needs

These needs have to do with the physical requirement for human survival and they take priority in the hierarchy. They include food, water, air, and rest gratification. The theory holds that physiological needs are usually homeostatic and their gratification restores equilibrium inside the body. Accordingly, these needs are metabolic requirements for the survival of all living species including humans and if these requirements are not met, the human body cannot function well and it ultimately fails. Thus, physiological needs are thought to be very primary or basic and the most important of all human needs. Maslow (1943) believed that if basic needs are not gratified regularly, they dominate all other needs. This implies that someone who is always hungry due to lack of food will not be interested in gratifying higher ranking needs such as safety or esteem. In the context of this study, it assumes that students from poor households in IHLs may find it difficult to fulfil food security as a physiological need and this can compromise their gratification of higher-ranking needs such as esteem needs and ultimately their self-actualisation need, which is their educational outcomes.

2.7.1.2 Safety and security needs

Safety needs come into force after gratifying the physiological needs and may become dominant to such an extent that all functionality is directed towards achieving security and stability, protection, structure, law, order, limits and freedom from fear (Maslow, 1970). Accordingly, the safety needs manifest themselves in ways such as health, employment, social stability and, property. Within this context, safety needs of a student would be seen in his or her desire for minimal effects of hunger or vulnerability to the phenomenon.

2.7.1.3 Love and belongingness needs

This third level of human needs has to do with interpersonal or feelings of social affiliation in life. Once the physiological needs and safety needs are gratified, needs for love and belonging take precedence and dominate behaviour. Thus, a person becomes aware of a need to belong somewhere and to belong to someone to receive and give some love. Maslow (1970: 44) observed that this stage, a person not only needs to belong to others but identification with his/her environment such as a home and neighbourhood also contributes to the gratification of affiliation needs (Maslow, 1970: 44). He also believed that, when the need for love is not being fulfilled, it results in the formation of groups and societies where people with similar needs and

problems come together and experience a sense of belonging. Therefore, love and belonging need can manifest itself in ways such as a sense of connection, intimacy, family, and friendship.

2.7.1.4 Self-esteem needs

Maslow believed that people need others to appreciate their competence. Accordingly, the need for self-esteem refers to the need to evaluate oneself positively. It implies that, as soon as the person's need for love and belonging has been gratified to the point that it diminishes as a motivating force, the need for esteem takes precedence and dominates. The Self-esteem needs include confidence, achievement, competence, education, respect for others and the need to be a unique individual. Maslow (1970: 45) classified the Self-esteem need into two subcategories, (i) a set of needs based on a person's achievements in relation to a sense of efficiency, capability, achievement, confidence, personal strength or independence, (ii) a set of needs that relates to the esteem of others. It includes social standing, honour, importance, appreciation and dignity. The gratification of each set of basic needs is a step towards self-actualisation. In this context, the esteem need would be seen in a student's desire to discuss openly his or her food insecurity status and to be ready to be assisted/accept the food security interventions. Such a student would seek to be assisted with food security related interventions at an IHL.

2.7.1.5 Self-actualisation needs

The self-actualisation need is sometimes referred to as the ultimate goal. Maslow believed that when a person's first four basic needs have been regularly gratified, he or she could start functioning at the level of self-actualisation stage where growth motivation comes to force (Maslow, 1970). In this context, self-actualisation stage is the highest level of satisfaction in the hierarchy of needs. The basis of the perceived need for self-actualisation is the person's full potential and the realisation of that potential. Maslow held a view that the self-actualisation is the desire to accomplish everything that a person can and wants to become after mastering the previously achieved needs. At this stage, the person can become a fully functioning; goal oriented being who can contribute to scientific discoveries.

In view of the above, when a set of needs is gratified regularly, the next set of needs become dominant. For example, instead of being dominated by hunger or food insecurity the person will be craving for safety needs. Hence, the higher need (safety need) becomes an important

motivator of behaviour (Maslow, 1968). It is critical to note that Maslow acknowledged that the needs are not always gratified in strict accordance with the hierarchy and that higher needs may sometimes motivate behaviour even when lower needs have not been gratified. Thus in 1968, Maslow distinguished two general categories of motives and referred to the first four levels of needs presented above, as ‘deficiency motives’ because their lack creates anxiety within humans (Maslow, 1968). He referred to self-actualisation as ‘growth motives’ and argued that the growth motives may vary from person to person and may include the quest for knowledge, peace, understanding, meaning in life and fulfilment. The first four needs were classified as deficiency needs while the fifth-ranked basic need or self-actualisation was classified as the growth need.

Taking into consideration Maslow’s Hierarchy of Needs perception, this study assumes that if food security meets the very basic physiological need for food, then food insecurity would deprive that need among hungry students in IHLs thereby affecting his or her low self-esteem, actualisation, and wellbeing. This could lead to serious negative effects on the students’ physiology and health which in turn would impoverish their academic performance. McLeod (2007; 2014: 1) concurs with this assentation that hunger would have a negative impact on the cognitive state of an individual. He noted that “Before a student’s cognitive needs can be met they must first fulfil their basic physiological needs... a tired and hungry student will find it difficult to focus on learning”.

As highlighted Chapter 1, it is further assumed that the learner may become secretive about his or her food insecurity status in order to preserve self-esteem, which in turn would restrict the affected student from accessing food security programme as an intervention. In this context, the relationships between food and nutrition security and insecurity; food security interventions; cognitive power; and self-esteem and actualisation may be complex and paradoxical.

2.7.2 Evaluation research

Behaviourists’ theories have been linked with evaluation research (Cook & Campbell, 1979). This follows that being a form of applied research, evaluation is mostly realistic. Evaluation research can be defined as a process of determining whether a social intervention has produced

the intended results. Evaluation as defined by Lapan, (2011: 322; Lapan, 2004), is a systematic examination of programmes, materials, personnel or policies to determine their value, merit or worth. Some evaluation analysts, (Cook & Campbell, 1979) note that evaluation research may be in form of review, appraisal, audit, quality assurance and a performance rating of a given organisation or programme. Evaluation researchers (Mark, *et al.*, 2000: 3) noted that the ultimate goal of social betterment is to assist democratic institutions, to better select, improve and make sense of social programmes and policies.

In evaluation context, a programme is a planned set of expectations, procedures and activities to produce specific outcomes. Whereas social programmes seek to address social problems such as poverty, injustice, food insecurity in society, evaluation research aims at assessing the merit or challenges of social programmes to inform the thinking of policymakers, practitioners and programme participants and the public about the interventions. Some authors, Cook & Campbell (1979) noted that social programmes include treatment interventions, disaster relief efforts and adult literacy outreach. One of the main purposes of programme evaluation is to examine the effectiveness of particular social programmes targeted at specific social problems. Some authors (Pawson & Tilley (1997: 11-12) noted that evaluation came because people have always sought ways of understanding their lot regarding the quality of a given programme or social intervention in an organisation. As such, it enhances research and learning from social policies, programmes and initiatives with the aim of modifying and improving their effectiveness. Pawson & Tilley (1997: 8) contended that the evaluator's chief role is to provide the most desirable available information to decision-makers based on past experience with the problem to be addressed, and strategies for addressing it. Pawson & Tilley (1997) also acknowledged that there is no universal logic of evaluation, no absolute science of valuing and no general warrant for decision-making applicable to all judgements. Pawson & Tilley, (1997: 11) reiterated that the evaluator tries to design a particular method of evaluation most suitable for a specific class of project in good circumstances. In this view, this study adopts the Food Security Impact Evaluation Framework proposed by the monitoring and evaluation experts of food aid programmes, the Food and Nutrition Technical Assistance (FANTA, 1999) as a suitable framework to aid address the research problem in discourse.

Another closely related view to this study is Lapan's (2011: 323) argument that programme evaluation emphasises how educational and social programmes are implemented, how they operate and what effects they have on the beneficiaries. Within this context, the current study seeks to explore the functionality of the food security programme implemented at UKZN (as an intervention to food insecurity amongst students) with the focus of exploring the success and challenges of the programme. Since 2012, the food security programme has been an integral part of the UKZN student support system and its operation in the university has not been documenting research by researchers.

2.7.2.1 Food security impact evaluation framework

In a food security context, a food security impact evaluation framework demonstrates the ability of food aid programmes to effectively transform inputs (policy environment, social-culture, personnel, facilities) into outputs (service utilisation, improved quality and access to the programme resources such as food/food vouchers, cafeteria, Counselling Centre, improved knowledge, motivated behavior) and ultimately the programme's impact on the well-being of beneficiaries and in this case, UKZN students' motivated behavior in school and improved practices in academic activities. The also framework assumes that good management of food aid programmes can yield positive results in the beneficiaries. In this context, a well-managed food security programme at UKZN would help food insecure students to have improved dietary intake, self-esteem and academic performance which would lead to reduced dropout rates of students in the university. The study purports that, when a student achieves academically, he or she can develop his or her personal potential and become a self-actualised by living creatively and fully using his or her potential to contribute to his or her environment or in the world in general as summarised in Figure 2.5. Figure 2.5 was the author's proposed model depicting food security, impact evaluation and the potential impact academic performance of students.

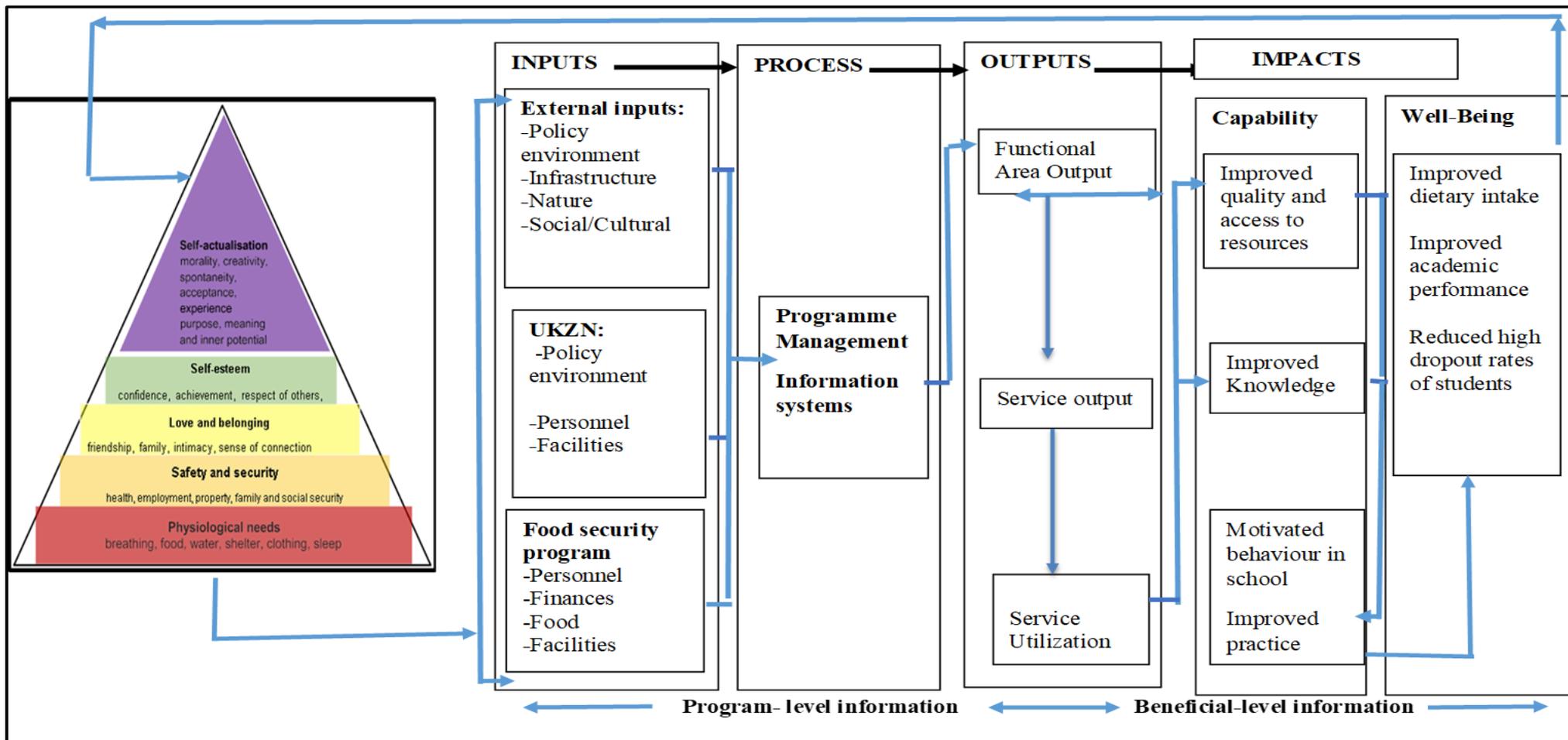


Figure 2.5: The proposed conceptual framework for food security impact evaluation of this study

Adapted from Maslow (1943: 370); Riely, *et al.* (1999: 2)

Figure 2.5 shows a summary of the theoretical positioning of this study. It depicts Riely, *et al.* (1999: 2)'s impact evaluation framework of food security programme in relation to Maslow's Hierarchy of Needs (Maslow, 1943) as it demonstrates the ability of food security programme to effectively transform inputs into outputs and ultimately its impact on a student's behaviour such as academic performance. It also shows the direct linkage between the food security program output and improvements such as academic performance in the wellbeing of programme beneficiary as outlined below.

Programme input: is a set of resources such as human and financial resources, physical facilities, equipment and operational policies that enable services to be delivered.

Programme process: is a set of activities or functional areas through which programme inputs are used to obtain the expected results such as management and supervision of various components of the programme, information systems, service delivery, logistics and counterpart training. These are monitored in terms of their relevant outputs.

Programme output: are results of activities at programme level regarding the number of goods and services delivered under the programme. Programme output may also refer to the following:

Specific functional area activities: refer to the number of goods (such as food) delivered to the university cafeteria and or to the student counselling centres.

Service output: access to quality and of services provided such as the ability to increase the number of programme locations, the average distance to service delivery points (cafeteria, college counselling Centre), and assessment of knowledge and practice of service providers.

The degree of service utilisation: by the targeted programme beneficiaries or number students on the programme and the percentage of eligible beneficiaries (food insecure students) measured.

External processes are events beyond the control of the programme external to a programme that affects the relationship between outputs and impacts (other confounding factors).

Programme impacts: are set of results such as changes in the behaviour of improvement of academic performance that occur at the beneficiary level (students) and that can be directly attributed to programme activities and outputs. Programme impacts can further be divided to distinguish.

Programme impact on capability: refer to the intermediate level of programme outcomes such as improvements in access to the programme's resources.

Impacts on wellbeing: refer to final programme results at the beneficiary level that is for example, directly related to their food security status and wellbeing in this case-improved academic performance and reduction in students' dropout rates.

2.8 Summary and conclusion

This chapter analysed the concept of food security with particular focus on the four basic elements of food security which are availability, access, utilisation, and stability. It interrogated other critical aspects associated with food security and food insecurity. The chapter explored the relationship between food security and food insecurity. In addition, it explored food security in South Africa and paid attention to the country's response to household/individual food insecurity post-apartheid era. From the literature, it emerged that despite the imperative interventions to food insecurity by the government, food insecurity was reportedly increasing at IHLs. Thus, the chapter presented the factors contributing to food insecurity in IHLs particularly and the need for necessary interventions. Further, it explored theories associated with food security and the potential relation to students' educational outcomes. Finally, in an attempt to understand how food security interventions can enhance educational outcomes, the chapter explored the UKZN food security programme and summarised its possible relation to Piaget's Theory of Cognitive Learning and Maslow's Hierarchy of Human Needs Motivational Model.

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CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The aim of this study was to recommend sustainable ways in which a Food Security Programme (FSP) as an intervention for food insecurity, can be implemented at UKZN. Chapter 3 provides the research techniques, tools and the methods that were employed in data collection, analysis and interpretation of the data, and the rationale for choosing those methods.

3.2 Research methodology

Research methodology refers to the methods, techniques, and procedures that are adopted by the researcher during the process of conducting the research design (Kothari, 2004). It aids the researcher to systematically solve the research problem (Kothari, 2004: 8). It includes underlying assumptions and principles used in shaping and informing the proposed study area. Babbie and Mouton (2001: 103-104 & 646) contend that research methodology encompasses identifying how the research will affect the elements of the phenomenon under study, and how the research is aligned with the ethical rules governing research. This research methodology adopted the qualitative and quantitative paradigms.

3.2.1 Research design and approach

This study took the form of an empirical mixed method research design. Empirical refers to the phenomena being studied and verifiable by experiences under study rather than purely theory (Baxter & Jack, 2008). The phenomena may include cases, situations, or persons and may be conducted in their natural context (Baxter & Jack, 2008: 544). The research design is a conceptual structure within which the research is conducted. It provides a blueprint for data collection, measurement and analysis, and includes an outline of the researcher's steps from writing the hypothesis to writing the final data analysis (Bhattacharjee, 2012: 35). Mixed methods research refer to all procedures for collecting and analysing both qualitative and quantitative data in the context of a single study (Tashakkori & Teddlie, 2003). Using a combination of qualitative and quantitative approach is critical, as it would expand the breadth of research to offset the weaknesses of either (quantitative or qualitative) approach alone (Rossman & Wilson, 1991). This study adopted the mixed method approach due to the complexity of food security as a phenomenon (Ivankova *et al.*, 2007). This multi-perspective

approach facilitated the research problem to be addressed by examining the various viewpoints of participants at different levels at UKZN (students, academic, support staff, and management staff) using various sources of information (Baxter & Jack, 2008: 545).

The research sought to get an in-depth understanding of the underlying phenomenon by conducting document or literature review, surveys, focus group discussions and key informant interviews. These different research methods allowed for the collection of both quantitative and qualitative data. The method was also useful for triangulating the data collected to increase its accuracy. Triangulation is the observation of the research phenomenon from two or more angles. Flick (2008: 178) concurs that during the triangulation, data is sourced from various populations differently. The complex demographic profile of the stakeholders at UKZN which is one of the major IHLs, provided a strong justification for triangulating the data collected.

3.3 Research area description

The study was conducted at UKZN in KwaZulu-Natal province of South Africa. By international standards, the UKZN is a very large and complex institution with 40 000 to 45 000 students and about 3 000 staff (UKZN, 2015b). The UKZN is organised around four Colleges consisting of 19-clustered Schools (DHET, 2015). Geographically, UKZN operates on five campuses and spans in two centres, one on the coastal city of Durban and environs, and the other in the provincial capital of Pietermaritzburg some 80km inland from Durban city. The following are the campuses and locations: Pietermaritzburg campus (Pietermaritzburg city), Nelson Mandela Medical school campus, Howard college campus, and Westville campus (Durban city), and Edgewood campus (Pinetown). Each college is headed by a Deputy Vice-Chancellor. In 2015, the UKZN staff were 3 157 of whom 1 349 were academics (UKZN, 2015b).

In terms of the demographic profile, the UKZN is quite diverse. The institution has a record of extending admission of higher education learning to students from diverse cultural and economic backgrounds; in particular, it has a profile of attracting and retaining students from the continent of Africa. In 2015, about 68% of the 43 283 students enrolled were South Africans of Black ancestry. It has also set aside a minimum number of places for students from quintile 1 and 2 schools in South Africa. Students from such schools are from very impoverished

households and are often the first in their families to access higher education opportunities. In 2015 Calendar year, 16% or 2 763 of 17 677 first-year students were from quintile 1 and 2 schools (very impoverished backgrounds) (UKZN, 2015b). This provides a strong rationale behind the selection of the University of KwaZulu-Natal as a research area.

3.3.1 Context of the UKZN: A history

The University of KwaZulu-Natal is an academic institution that was formed on 1 January 2004 because of the merger between two independent South African universities: the University of Durban-Westville (UDW) and the University of Natal (UN) (UKZN, 2013). The merger of the two universities resulted from the government's higher educational structuring plans that would see the number of higher educational institutions in South Africa reduce from 35 to 23. Prior to this, there was a culmination of a wide-range consultative process on the restructuring of the Higher Educational Sector in the early 1990s that was subsequently confirmed by Cabinet in December 2002. As a result, 35 higher education institutions were merged into 23 higher education institutions among them the current UKZN. Thus, the UKZN is was flagship of the new system- the radical reconstruction of the national Higher Education system that aimed at addressing the highly racialised and skewed nature of Higher Education Institutions, a legacy of the Apartheid government. The KwaZulu-Natal universities were among the earliest South African institutions to merge in 2004, in accordance with the government's higher educational restructuring plans. The merger also aimed at improving the management and efficacy of public higher education institutions in the non-racialised and democratic South Africa (UKZN, 2015a; UKZN, 2013).

Before the merger and during the apartheid era, the UN and the UDW served people along their racial groups. The UN was previously a Natal University College (NUC) that was established in 1910 in Pietermaritzburg (Jackson, 2006). Five years later, the NUC opened a campus (Howard College) in Durban. Subsequently, the University underwent unprecedented expansions in a population that resulted in the establishment of the Faculty of Agriculture in Pietermaritzburg in 1946 and the medical school in Durban in 1947, which was exclusively for the Black African population-indigenous Africans, Coloureds and Indians (UKZN, 2015a). Owing to its rapidly growing population and, its wide range of courses, and its achievement in opportunities and research, the NUC was granted independent University status in 1949

(Jackson, 2006). Due to its organisation and structure, the University of Natal was perceived to be a racialised and elitist colonial institution (Chetty & Merrett, 2014). However, the fall of the South African Apartheid regime- a white minority government in 1994, was followed by the abolishing of racial segregation policies in all sectors including the higher education sector. Therefore, it followed that by 2002, there was a steady increase in the student enrolment at IHLs like the UN, such that 80% of the 27 500 registered students were Black Africans (Jackson, 2006). As highlighted earlier in the chapter, on 7 December 2002, the Minister of education made an official announcement to merge a number of IHLs in the country. The UN and the UDW were among the affected institutions as they were to be merged.

The UDW was established in the 1960s as a University College to cater for Indians' academic needs. The institution was based on Salisbury Island in Durban Bay. Before 1970, the institution had few numbers of student enrolment due to the 'Congress Alliances' policies of shunning apartheid structures (Jackson, 2006). This resulted in the 1980s 'education under protest', which became part of the anti-apartheid campaign for a non-racialised South Africa. By 1971, there was a steady increase in the number of students such that the College was granted a University status. In 1972, the UDW was moved to its current campus in Westville and in 1984, the University became an independent IHL, which catered for students of all races (Chetty & Merrett, 2014; UKZN, 2015a).

The merged UKZN is an internationally recognised academic institution that caters to academic and research needs of all demographic racial groups. Constitutionally the UKZN is governed in accordance with the South African 'Higher Education Act 101 of 1997' (as amended), while its constitution is specified in the statutes of KwaZulu-Natal, as approved by both the Minister of Higher Education and the South African Parliament (Ministry of Education, 2003). The University's vision is to be a "Premier University of African Scholarship" while its mission is to "seek academic excellence, innovation in research and critical engagement with society" (UKZN, 2013). The UKZN also seeks to redress the past imbalances by achieving equitable demographics representation among students and staff. Thus, the UKZN is one of the

distinguished⁶ and internationally recognised universities on the continent of Africa. UKZN is potentially academically excellent, innovative in research, critically engaged with society and a wealth of demographically representative, redressing the disadvantages, inequities and imbalances of the past (UKZN, 2013). Although the UKZN is mainly organised around its colleges and schools, the organisation as a whole includes other structures such as the administration known as the support structure and the student representative body known as the Student Representative Council (SRC). Cumulatively of the above, the whole organisation is anchored on vision, mission and goals and designed to promote efficiency and academic excellence through integrated management and administration of a complex institution (UKZN, 2013). Table 3.1 shows the academic structure of the UKZN.

⁶ Distinguished universities are characterised by a strong focus on research production, teaching and international recognition (Ministry of Education, 2013).

Table 3.1: Organisational structure of the UKZN: Colleges and Schools (UKZN, 2013)

College of Agriculture, Engineering and Science	College of Health Sciences	College of Law and Management Studies	College of Humanities
School of Agricultural, Earth & Environmental Science. School of Chemistry & Physics. School of Engineering. School of Life Sciences. School of Mathematics, Statistics & Computer Science.	School of Clinical Medicine. School of Laboratory Medicine & Medical Sciences. School of Health Sciences. School of Nursing & Public Health.	School of Law. Graduate School of Business & Leadership. School of Accounting, Economics & Finance. School of Management, IT & Governance.	School of Religion, Philosophy & Classics. School of Arts. School of Social Sciences. School of Applied Human Sciences. School of Built Environment & Development Studies. School of Education.

3.4 Population and Sampling strategies

In research studies, population refers to the number of cases of the type that is the research subject. A population may consist of people, objects or events (Walliman, 2005: 275). In this study, the population comprised individuals within the jurisdictions of the UKZN. Sampling refers to the method of selecting units of analysis that would be subjected to the analysis (Tashakkori & Teddlie, 2003). Sampling is the process of drawing a sample from the population. It is determined by the availability of resources, both material and human. A sample is a number of selected cases in a population (Babbie & Mouton, 2001; Kothari, 2004: 15). Section 3.4.1 details the sampling strategy of this study.

3.4.1 Quota purposive sampling

The sample of this study was drawn from the UKZN community. In 2015, the student enrolment was 43 283, the overall staff members were 3 157 of which 1 300 were academic

staff and 1 857 were support staff (UKZN, 2015b). The initial sampling was purposively conducted to target some key stakeholders of the university community namely: academic staff members and students. Purposive sampling is a form of non-probability sampling where the researcher deliberately selects particular respondents from among those who know most about the phenomenon being studied (Kothari, 2004: 15). The respondents were selected in this manner because they possessed certain desirable characteristics (being key stakeholders of UKZN) relevant to the study. Subsequently, quota sampling was applied to sample fulltime students and academic members of staff and within the quota, random sampling was applied as follows: 500 students were sampled representing approximately 1% of the university students' population. This sample was equally divided among five campuses of the university. Likewise, 500 questionnaires were delivered to target 100 students at each campus of the university. Another quota sampling was drawn to target approximately 10% of academic staff that translated into 100 respondents. Subsequently, a survey was delivered to all four colleges of UKZN to target 25 academic staff members from each college.

Qualitative data was collected from the following key stakeholders: five Student Representative Council members- student service office, one from each campus; four Student support managers/Heads of counselling careers and development services one from each college; four college Executive Deans for Teaching and Learning, one from each college; two food security programme senior staff (programme administrator, and programme coordinator); 19 Academic Development Officers, one from each school. The aforementioned were purposively sampled based on the assumption that they dealt with various issues affecting students in the university community. Table 3.2 summarises the demographic distribution of these samples.

Table 3.2: Demographic attributes of research participants from key informant interviews and focus group discussions

Study site	Participants	Position held
Westville Campus	1	Senior Student Development Specialist
Westville Campus	1	Special projects Manager
Law and Management Studies ; Health Sciences; Agriculture, Engineering & Science	3	College Executive Dean: Teaching & Learning
All Colleges	4	Student Support Manager & Head of Counselling
All Campuses	5	SRC: Student services officer
Agriculture, Engineering and Science	6	Academic Development Offer
Law and Management	4	Academic Development Offer
Health Sciences	2	Academic Development Offer
Humanities	1	Academic Development Offer

3.5 Data collection methods and techniques

Sequential transformative design method was used to collect data between the November 2015 and November 2016. To obtain reliable statistical results, the study used a quantitative research method, which aims to develop and employ numerical or mathematical models, theories and or hypothesis pertaining to a phenomenon (Babbie & Mouton, 2001). In 2015, a large component of quantitative data was collected through a survey that was delivered to 500 fulltime students across all UKZN Campuses. The completed questionnaires totalled 456 translating into a 91.2% response rate.

The questionnaire was developed to include measures to collect demographical information and information about behaviours and perceptions of the surveyed students. This included vulnerability to food insecurity; perceptions about the students' food security status; perceived effects of food insecurity on students' academic performance; awareness of food security support programmes and willingness to utilise the food security-related programmes; attitudes

towards food insecurity and food aid. The questionnaire included single answers, 'yes' and 'no', as well as multiple items of the Likert scale of three and five answers (Appendix A).

In August 2016, another survey was manually delivered to collect quantitative data from 100 academic staff. A total of 94 questionnaires were completed and returned, translating into a 94% response rate. The questionnaire was developed to include measures to collect data on perceptions about the students' food security status; perceived effects of food insecurity on students' academic performance; awareness of food security support programme and willingness to utilise the food security-related programmes; attitudes towards food insecurity and food aid (Appendix B). Initially, the researcher had targeted 35 participants for focus group discussions and face-to-face interviews. However, during the data collection process, 27 respondents were available for participation, translating into 77.1% response rate. Details of the 27 respondents' participation are displayed in Table 3.2 of this Chapter. A qualitative research study aimed to understand and interpret the meaning that the research subjects give to their everyday life (Babbie & Mouton, 2001). It involves impression, and encompasses in-depth interviewing and focus group discussions and deals with the subjective assessment of opinions, attitudes, and behaviour. Therefore, data from the research subjects' experiences and their perceptions were derived to fit into a larger discourse. The larger discourse would address how the research subjects internalise their personal experiences and personal construction of food security as a concept and the impact of food security interventions on the academic performance of students in IHLs such as the UKZN.

Qualitative data were collected between September and November 2016 using focus group discussions and key informant interviews. Focus group discussions are a good method of getting data on the perceptions and in generating broad views of the research subjects (Babbie & Mouton, 2001). All focus group interviews and key informant interviews were audiotaped to capture interactions among participants.

The focus group discussions/interviews were conducted with the Academic Development officers (ADOs) from different schools of the UKZN (Appendix C). A series of key informant interviews were conducted through face-to-face interviews with individuals from the SRC, senior management staff, and food security programme managers at UKZN. This allowed the

researcher to generate in-depth data on the perceptions, implementation and issues associated with food security programme management in the university. The audio recorder, and the interview guides consisting of questions from the research objectives were used to record and to collect all the data. All interviews were transcribed and analysed using the inductive approach to data analysis. Particularly, data were analysed to construct and identify themes from recurring patterns detectable throughout (Taylor & Bogdan, 1984). Secondary data were derived from document review and scholarly publications relevant to the topic. It consolidated and broadened the researcher's knowledge base. It also brought clarity, focus on the research problem, and provided a framework for establishing the significance of the study (Creswell, 2009: 25). A literature review aided the researcher to contextualise the research findings from the surveys, key informant interviews and focus group discussions from UKZN respondents by comparing them to previous research findings.

3.6 Reliability

To enhance reliability, the research instruments were pilot-tested to ensure that the respondents would be in a position to comprehend all items therein and to minimise the risk of misinterpretation of concepts and terminologies. This was in line with some social research experts (Babbie & Mouton, 2001: 244) who suggest that pilot-testing of data collection instruments provides a way to mitigate a possibility of error in designing data collection instruments. Quantitative data collected were comprehensively coded and themes were identified. All interviews and focus group discussions were voice-recorded and the data collected were comprehensively transcribed. Subsequently, themes were systematically identified. More reliability was also ensured by the use of different data collection methods including, a survey, interview schedules, and document reviews.

3.7 Validity

Validity determines whether the research measures what it truly intends to measure (Mathison, 1988: 13). To increase validity, this research used triangulation as a strategy (Mathison, 1988: 13). Triangulation has the potential to eliminate bias and consequently allows the dismissal of plausible rival explanations such that an accurate proposition about some social phenomenon can be made. To ensure validity, this study gathered views and opinions from the university community, it gathered data from different groups of stakeholders at UKZN including students

who were vulnerable to food insecurity, representatives of the student's governing body, the support staff, lecturers, the Executive Deans and other senior staff in the university community. The researcher asked a series of questions with a similar dimension in attempting to establish the consistency of the responses. Different methods of analysis were also applied to enhance validity.

3.8 Data analysis

Survey data were coded and computed descriptively using statistical analyses such as frequency tables, cross-tabulations, and Spearman's correlations. Qualitative data from interviews and focus group discussions were fully transcribed and coded by developing thematic strands and indicators that had common relationships. Data, particularly from the interviews (with the food security programme management), were analysed within the context of social network analysis computer software-Pajek and the Kamada-Kawai (1989) algorithm to project a network of emerging themes. A literature review was naturally incorporated to consolidate findings from primary data. Overall data were analysed integratively according to emerging themes deriving from the research objectives as described below.

3.8.1 Specific-objective 1

A large component of quantitative data from a survey was used to address the sub-objective. Data was collected from full-time students across the UKZN campuses and colleges. The aim was to assess the prevalence of food insecurity amongst students and the perceptions about their food security or insecurity status. The survey had mostly closed questions and some open-ended questions. Quantitative data were analysed descriptively in IBM SPSS version 24. Details of the data analyses processes are provided in Chapter 4. Secondary information from previous studies and document reviews were used to complement the findings.

3.8.2 Specific-objective 2-3

Data for these objectives derived from the 2015 and 2016 surveys, focus group discussions and key informant interviews (with Executive Deans for Teaching and Learning, and the SRCs) conducted at UKZN. The aim was to assess awareness level of food security interventions with particular attention to the UKZN food security programme that was established in 2012. Another aim was to gain insight of how the key stakeholders at UKZN operationalise food

security or insecurity. This objective gave prominence to the conceptualisation of food security in general and more specifically food security among tertiary students at institutions such as UKZN. Two surveys were distributed to collect data from full-time students and academic staff at the UKZN. The surveys had mostly closed questions and some open-ended questions. Focus group discussions were held with the ADOs from various schools in the university. Key informant interviews were held with the following leaders in the university: SRCs, student support managers/heads of counselling at the college level, and college Executive Deans for Teaching and Learning, in the University. Quantitative data were analysed descriptively in IBM SPSS version 24 while qualitative data were analysed thematically. Details of data analyses processes are provided in Chapter 5.

3.8.3 Sub-objective 4, 5 and 6

Data for objective 4, 5 and 6 were collected between September 2016 and November 2016. The aim was to investigate the rationale behind the implementation of food security programme, reasons leading to the formation of the programme, and to identify policies guiding the implementation of the programme at UKZN. In addition, the aim was to explore the extent to which the food security programme met its objectives; to estimate the extent to which the programme enhanced students' academic performance; to explore the challenges of the food security programmes as evidenced at UKZN. Data collected was largely qualitative using key informant interviews with the senior managers of food security programme, and the student support managers and heads of counselling (from colleges) as the implementers of the programme. Data were analysed thematically and using the Pajek software. Details of analytical processes of data and its interpretation are provided in Chapter 6.

3.8.4 Sub-objective 7

The aim of this objective was to draw on the main findings deriving from the research results (particularly chapter 6), and to provide some insightful perspectives on managing the issue of student hunger in South African IHLs as evidenced from the UKZN's food security programme.

3.9 Ethical considerations and dissemination of research results

Before the data collection process, the researcher received the following authorisation: Gatekeepers authorisation certified by the UKZN registrar (Appendix D); the Ethical clearance permission (protocol ref number; HSS/1375/015D) from the Human Social Sciences research ethics committee, UKZN (Appendix E). During the research, respondents were informed about the purpose of the study and the reason for which they were selected were explained. All respondents selected for the purpose of this study were invited to sign a consent form as evidence that they had freely participated in the research. Data collection through literature review was dully acknowledged.

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CHAPTER 4: FOOD INSECURITY PREVALENCE, AND PERCEPTIONS AMONG STUDENTS AT UKZN, SOUTH AFRICA

4.1 Abstract

The study investigated the prevalence of food insecurity and perceptions about food insecurity status amongst students attending higher education in post-1994 South Africa. A critical appraisal of the effect of food on academic outcomes was analysed using; social and psychological wellbeing viewed and contextualised through 1) Maslow's Theory of Self-actualisation-to explore the food as a basic human right 2) on inadequate nutrition and health-premise that food and nutrition insecurity are part of the environmental factors that affect psychosocial functioning. This research was mainly quantitative and a survey was used to collect data. Research participants were registered students at the University of KwaZulu-Natal (UKZN), South Africa. The study explored the prevalence of and perceptions of food insecurity among students at UKZN through a survey of 500 full-time students of which 91.2% (n=456) students completed and returned a hard copy questionnaire. Food insecurity was measured using 1 item measure, and a nine-item measure, that is, Household Food Insecurity Access Scale-related conditions (HFIAS) recommended by the Food and Nutrition Technical Assistance Project (FANTA). Associations of vulnerability to food insecurity with demographic attributes and perceptions towards food insecurity status were determined descriptively using a Chi-square test and Pearson's correlation. The findings suggest that food insecurity remains a serious concern among students at UKZN. More specifically, 53.1% (n=242) of the surveyed students were found vulnerable to food insecurity according to the one-item measure, of whom 44% (n=200) experienced moderate levels of vulnerability; while 9.2% (n=42) were highly vulnerable. The highest prevalence of food insecurity was in undergraduate, males, and those relying on NSFAS or loans. The findings also indicate that food insecurity has a high potential of negatively affecting students' academic performance and their educational outcomes. About 64.3% of the students indicated that hunger reduced their concentration and vigour such that, 27.7% had missed classes. Furthermore, there was a significant correlation between student source of funding and being food insecure due to lack of resources ($r=0.119$, $p=0.012$). The study proposes that UKZN should target first year students and educate them on the importance of budgeting skills; moreover, on the importance of (being food secure) having nutritious meals for an active daily life.

Keywords: academic performance, food poverty, socio-economic status, students issues, university students.

4.2 Introduction

South Africa is relatively a wealthy country with a stable national food sufficiency of its own production and food imports (Devereux & Waidler, 2017). History recounts that post-apartheid South Africa introduced social protection policies to target the most vulnerable groups particularly the historically disadvantaged groups in the country (Department of Agriculture-DA, 2002; Hendriks, 2014). Simultaneously, South Africa recorded noticeable economic growth and a reduction in poverty levels at the national level, particularly between 2006 and 2011. According to the 2014 report by Statistics South Africa (StatsSA, 2014: 12) the reduction in poverty levels translated into 32% of the population living below the poverty line in 2011, down from 42.2% in 2006.

Despite the adequate national food supply, and documented successful reduced poverty rates and hunger in post-1994, household food security and adequate nutrition at individual level remain a challenge in South Africa (StatsSA, 2017). This is evident in the documented prevalence of undernourishment in terms of stunting growth, and other forms of malnutrition such as obesity and hidden hunger (micronutrient deficiencies resulting from lack of dietary diversity and quality) which persists in the country (Devereux & Waidler, 2017; StatsSA, 2014). In addition, since the advent of constitutional democracy in South Africa, reducing poverty and inequality has been the basis of policy development. However, until now, South Africa is one of the countries with the most wealth gaps in the world (StatsSA, 2014). Due to the persistent income inequalities among sub-population groups, the country is faced with stagnant household food insecurity levels and nutritional problems among sub-population groups such as women, children and the rural families most of whom come from low-income families (StatsSA, 2017).

The 2015 global report on ‘the state of food insecurity’ (FAO, IFAD & WFP, 2015: 5), shows that South Africa is among sub-Saharan countries with the problem of malnourishment as evidenced in some prevalence in stunting⁷ (5%) in children under the age of five. As a result, some population groups lack access to nutritious meals for an active daily life. Du Toit (2011:

⁷ Stunting refers to low weight over age, depicting long-term undernutrition and sustained poor environmental and socio-economic status of households (Hendriks, 2011: 122; (Steyn, 1996. Chapter 13: Nutrition. Properties of the Ministry of Health. Available at: http://www.hst.org.za/sahr/96/chapt13_18.htm (accessed 7 May 2004).

4) concurs with the view that South Africa has no problem with food access but rather access to nutritious meals at the household level. A report by Du Toit (2011) shows that KwaZulu-Natal Province is among the most affected by poverty and food insecurity at household level. Within this context, it is reasoned that students attending an IHL such as UKZN, are among the affected population groups. Moreover, in South Africa, food insecurity has been reportedly increasing amongst students at IHLs especially those who come from low-income families (Van Den Berg & Raubenheimer, 2015). However, estimating the prevalence of food insecurity and perceptions about issues food insecurity among students has not been fully explored in South Africa. As such, very little research has been conducted to estimate the prevalence of the food insecurity among students at institutions such as UKZN.

Previous studies on food insecurity at UKZN focused on undergraduate students and students from historically disadvantaged groups (Munro, 2013; Gwacela, 2013; Kassier & Veldman, 2013). However, this study, aimed at investigating the prevalence of food insecurity and how the issue of food security prevalence is perceived amongst students; both undergraduate and postgraduate students attending UKZN, South Africa.

4.3 Measuring food insecurity in South Africa: Household level

There is a close link between poverty and vulnerability to food insecurity in South Africa. Ideally, measuring food security at international (Headey & Ecker, 2013) and national (Hendriks, 2005; 2013) level is quite subjective such that there is no specific standard used as a benchmark. Likewise, several proponents have introduced multiple ways of measuring the phenomenon, especially at the household level. One of the notable measures of food insecurity is the Household Food Insecurity Access Scale-related conditions (HFIAS) or indicators of food insecurity to measure household and individual food security. The version 3 HFIAS, was formulated by the Food and Nutrition Technical Assistance Project (FANTA) of the United States Agency for International Development (USAID) in 2007. It is argued that the HFIAS is a simpler measuring tool for food access indicators of household food security or insecurity in research (Coates *at al.*, 2007).

In South Africa, measuring food security at the household level is quite problematic as it involves patterns of food consumptions and some critical assumptions linked to poverty. In

addition, there has been an insufficient discussion on measuring food security among students at South African universities. As a result, analysts as criteria for measuring food security have used different indicators (Hendriks, 2005). This is usually done in consistency with the definition of food security such as, the most cited FAO definition which states, “Food security exists when all people, at all times, have physical, ‘social’ and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (World Food Summit, 1996). A food security analyst (Simon, 2012: 8) further observed that it is usually food insecurity that is measured to determine the level of food security. Simon, (2012: 8) observed that measuring or analysing food security is quite complex such that, it is usually food insecurity that is, assessed or analysed. Likewise, due to its complex causes, measuring food insecurity is conducted by analysing a range of food security indicators such as food intake or food balance sheet (access, availability, utilisation and stability. At the household level, data on consumption, expenditure and nutrition indicators are used to measure food security (Headey & Ecker, 2013: 328). Nevertheless, measuring food security at any level including individual level is an important way of determining the factors that may have caused food insecurity or may affect food security in the future, and to decide on appropriate interventions.

Within this context, one of the food security analyst in South Africa, Hendriks (2005: 104-105) observed that an empirical estimation of food security or insecurity at the household level is complicated by diverse methodological approaches that have been applied to food security scholarship. Hendriks (2005: 105-106) cited South Africa as one country that lacked an inclusive and comparative empirical data on household food security to determine the vulnerability of households to the phenomenon. Hendriks reiterated that empirical food security research in South Africa was very limited such that it lacked comparative studies and time-series data sets that prohibit an accurate estimation of food security trends in South Africa. It was further noted that, the nation also lacked nationally representative food security surveys for South African population and food security monitoring systems (Hendriks, 2005).

In this study, assessing the vulnerability to food insecurity among university students at an IHL was of ultimate importance. Previous studies (Munro, 2013; Gwacela, 2013; Kassier & Veldman, 2013) on food insecurity have been limited to a particular campus or group of

students at the undergraduate level of an IHL. For instance, a study by Gwacela (2013) targeted undergraduate students attending an academic mentorship programme in one faculty of the University, whereas a study by Munro (2013) on the scope of food insecurity vulnerability was limited to students at one campus of the University. A study by Kassier & Veldman (2013) specifically targeted undergraduate students on financial aid. Nonetheless, these studies offered some insight on the issues regarding food insecurity at IHLs from a causal point of view.

The present study is quantitative, it includes among other things, all full-time students at both undergraduate and postgraduate level at all the four colleges of the university and five campuses. The research also investigates the students' perceptions about their food security status as well as the perceived effects of food insecurity on their academic performance. Within this context, the study attempted to contextualise human motivational theories as perceived by Maslow's Hierarchy of Needs Model and Piaget's Theory of Cognitive Learning. This perspective of analysing food security has not been fully explored at IHLs.

Some researchers of food security have documented that unlike in developed countries like Canada, Australia and the United States of America, research on household food security is under-reported in sub-Saharan African countries, including South Africa (Sorsdahl *et al.*, 2011). In Canada, a study by Willows & Au (2006), reported that students attending Canadian IHLs were increasingly vulnerable to food insecurity due to the impact of university fee increases on the growing number of financial aid student dependants. Other researchers reported that a large body of empirical research on food security and its impact on academic performance were limited to schoolchildren (Hughes *et al.*, 2011). The objective of this study was to estimate the vulnerability to food insecurity among students at an IHL and their perceptions about their food security status.

4.4 Methodology

This quantitative study primarily aimed to determine students' vulnerability to food insecurity, and their perceptions of their food security or food insecurity status at UKZN. The study also aimed to determine the potential impact of food insecurity on students' academic performance and wellbeing. The potential influence of food insecurity on students' academic outcomes,

social and psychological wellbeing are contextualised through the lens of Maslow's Hierarchy of Needs Model, and Piaget's Theory of Cognitive Learning.

4.4.1 Context of study method

As mentioned in Chapter 3, Section 3.3, approximately 43 283 students were registered in 2015 (UKZN, 2015). The institution offers several on and off-campus residential facilities. However, all residences are self-catering. An internal university report highlighted the increasing cases of food insecure students at the institution (UKZN, 2012). Moreover, the prevalence and perceptions about food security or insecurity among students across UKZN have not been documented recently.

4.4.2 Sample and recruitment

Participants were recruited from UKZN's five campuses. The sampling strategy aimed to recruit approximately 500 full-time students (both undergraduate and postgraduate students) from the sample frame of 43 283 registered students in 2015, giving an average of 1% of the registered students. A heterogeneous purposive sampling was randomly selected at a strategic mix of geographical recruitment sites (cafeteria, libraries and computer labs) in order to incorporate students from a broad range of the University's four colleges and five campuses. Each campus received 100 hard copy questionnaires. Once confirmed as a full-time student, the survey questionnaire was delivered to students who returned it after completion. The respondents were requested to sit apart from each other to ensure their confidentiality. The survey took approximately 12 to 15 minutes, giving an average of 13.5 minutes to complete.

4.4.3 Research procedure

A survey questionnaire was developed to include measures to collect demographical data and information about behaviours and perceptions of the surveyed students (Appendix A). This included vulnerability to food insecurity; perceptions about the students' food security status; and the perceived effects of food insecurity on students' academic performance. The questionnaire included single items, 'yes' and 'no' items, and multiple items of the Likert scale rating of three and five items. To estimate vulnerability to severe food insecurity within the student population, questions were formulated (Table 4.5) using the Household Food Insecurity Access Scale-related conditions (HFIAS) nine item measure recommended by the FANTA

(Coates *et al.*, 2007). Some limitations of this study must be considered, particularly when interpreting the findings from the HFIAS related questions (Table 4.5). In the study, the indicators of food insecurity only present the percentage of individual students who responded affirmatively to each occurrence question without the frequency of the experience during a period of four weeks (30 days). In addition, unlike the HFIAS, the questions on the students' food insecurity questionnaire were designed to apply to the individual student and not a household. However, an additional item related to vulnerability to food insecurity was included to determine the self-reported eating habits by the students 'on a normal circumstance' (Table 4.4).

4.4.4 Data analysis

To achieve the study objective, data from the survey questionnaires were analysed quantitatively using the IBM Statistical Package for Social Sciences (SPSS)-version 24 software. Descriptive analyses and frequency tables were performed to determine the percentage of variables such as demographic information of the respondents, while cross-tabulations, Chi-Square test and Spearman's (*r*) correlations were performed to determine the categorical relationship in most variables, the statistical difference, and the association between variables in non-ratio data respectively. Demographic attributes of the student's sample were summarised descriptively as displayed in Table 4.1.

4.5 Results and discussion

In this section, the research results obtained from the survey questionnaire are presented and discussed. Out of the 500 questionnaires that were distributed, 456 were completed and returned to the researcher. This gave a high response rate (91.2%) of the sampled participants. Generally, the sampled students represented the general student population but with overrepresentation of undergraduate students (90.5%) and local students (95.6%) (Table 4.1). Due to the nature of the academic programmes offered at UKZN, the majority of the students were undergraduates. From the research results, slightly above half (52%) of the respondents were female ($n=337$) whereas their male counterparts were 48% ($n=219$). The gender profile of UKZN in 2015 shows that 58% of the registered students were female whereas 42% were male.

In South Africa, the expected university entry age is 19 years⁸ and the finishing age group should be 21 years for an undergraduate degree programme. However, the results of this study show that 42.4% were over 21 years of age as shown in Table 4.1. This is an indication that the students were not completing their studies in ‘standard’ time. Results also show that about 42% of students or families were directly or indirectly responsible for the tuition fees and subsistence, whereas only (21.1%; 20.4%) of the students’ studies were funded through bursaries and NSFAS, respectively. From the results (Table 4.1), it is possible to argue that not all students from low-income households were accessing the much-needed financial support from the government, to cover their higher education costs. This is despite the fact that many students at UKZN are from impoverished backgrounds (quintile 1 and 2 school backgrounds). According to the university records, many of their students were not only from the economically disadvantaged background but also from the first generation in their families to access higher education opportunities (UKZN, 2015). Based on the 2015 undergraduate student enrolment profile, about 17 677 students were from resource-poor communities/households (quintile 1 and 2 high schools) of whom 2 763 were from resource-poor backgrounds (quintile 1 high schools).

In South Africa, resource-poor communities are usually characterised by abject poverty and dependence on social welfare pensions and grants (Devereux & Waidler, 2017). While acknowledging that South Africa is a developing country with a history of racially skewed socio-economic policies, which disadvantaged the majority, particularly the Black Africans, it has sufficient resources and enabling policies to facilitate both access to higher education and a wealth of student retention as provided in Act 108 of the 1996 National Constitution. Table 4.1 summarises the demographic attributes of the surveyed students.

⁸ In South Africa, age at which compulsory school attendance starts is 7. A child attends school for 12 years. Available: <http://pmg-assets.s3-website-eu-west-1.amazonaws.com/docs/090812childinstitute.pdf>. [Accessed 12/17/2017].

Table 4.1: Demographic attributes of students

Variable description	Gender				[N=456]	Total (%)
	Female		Male			
	(n)	(%)	(n)	(%)		
All participants	337	52	219	48	453	100
Age						
≤ 21	169	37.3	134	29.6	303	66.9
Between 22-25	60	13.3	52	11.5	112	24.8
Between 26-30	31	0.4	24	5.2	31	6.8
Between 31-35	0	0.0	4	0.8	4	0.8
>35	0	0.0	3	0.6	3	0.6
Nationality						
International	4	0.9	16	3.5	20	4.4
South African	232	51.1	203	44.6	435	95.6
College of study						
Agriculture, Engineering & Science	36	7.9	35	7.7	71	15.7
Law and management	43	9.5	40	8.3	83	18.3
Humanities	120	26.5	86	19.0	206	45.5
Health Sciences	37	8.2	56	12.4	93	20.5
Level of study						
Undergraduate	216	47.5	196	43.1	412	90.5
Post graduate	21	4.6	22	4.8	43	9.5
Funding						
NSFAS	52	11.4	44	9.6	96	21.1
Student loan	12	32.6	18	3.9	30	6.6
Bursary	43	9.4	50	11.0	93	20.4
NRF	25	5.5	21	4.6	46	10.1
Self-sponsored	105	23.0	86	18.9	191	41.

Notes: NRF= National Research Foundation (a higher education research and development scholarship by South African government agency [available at <http://www.nrf.ac.za/about-nrf>].

4.5.1 Funding and food expenditure: Poverty and inequality

Descriptive statistics were performed to determine the monthly food expenditure among the surveyed participants. Table 4.2 and 4.3 show that the minimum monthly food expenditure was only R90.00 compared to the maximum food expenditure per month, which was R3000.00. The mean expenditure was R659.00. However, Table 4.3 also shows that there was a deviation from food expenditure; between minimum and maximum by R440.74, amongst the students. Within this context, it is possible to argue that these results reflect the income variations that have been recorded in post-1994, South Africa. This also reflects the wide income gap between the rich and the poor in the country. A recent report by Statistics South Africa, on poverty trends in South Africa between 2006 and 2011 showed that while a significant proportion of people living in poverty had declined from 66.6% (31,6 million persons) in 2006 to 53.2% (27,3 million persons) in 2011, it had increased to 55.5% (30,4 million) in 2015. The report warned that the number of people living in extreme poverty (living below the food poverty line of R441.00 per person per month) had increased by 2,8 million (from 11 million in 2011 to 13,8 million in 2015 (StatsSA, 2017)). Further, it was reported that among the most vulnerable subpopulation groups included people of African ancestry, females, people living in rural areas and people with little or no education. Further, the report also shows that while the income inequality had declined from 0.7% to 0.68% in 2015 there were noticeable variations in income among people of African ancestry. In the current study, Figure 4.1 illustrates the skewness of the food expenditure among university students. Most students were spending less than R660.00 per month on food. The Figure shows that the mean falls in the lower data set.

Within this context, a recent report by the National Agricultural Marketing Council (NAMC), an organisation that regularly monitors food price trends in South Africa shows that between February 2015 and February 2016, the cost of basic food basket (excluding oranges) of consumers had increased by approximately 10.86%, in nominal terms, from R510.00 to R566.00 (NAMC, 2016: 3). This means that students who lived below the food poverty line of R441.00 per month, were not likely to purchase adequate nutritious food due to high food prices.

Table 4.2: Monthly food expenditure ration

Description	Frequency	Mean (ZAR)
Level of study		
Undergraduate	380	R636.00
Postgraduate	41	R883.00
College of study		
Agriculture, Engineering & Science	67	R578.00
Law and management	73	R672.00
Humanities	191	R639.00
Health Sciences	88	R746.00
Funding		
NSFAS	93	R622.00
Student loan	29	R536.00
Bursary	87	R747.00
NRF	42	R645.00
Self-sponsored	171	R661.00
Gender		
Male	202	R656.00
Female	220	R663.00

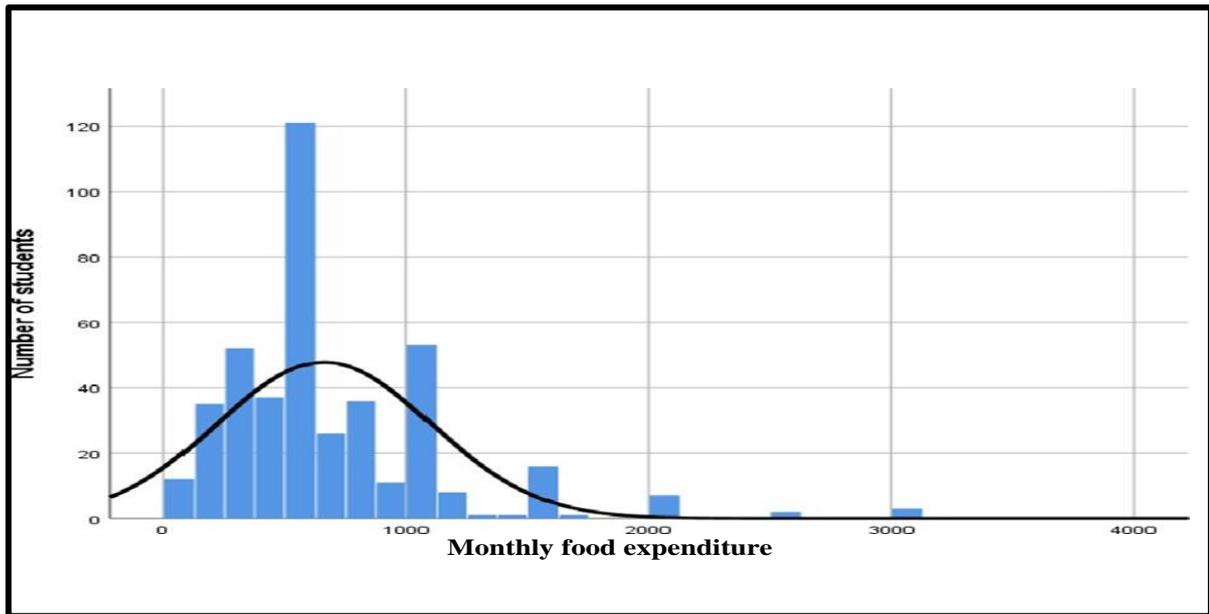


Figure 4.1: Monthly food expenditure of students

Table 4.3: Standard deviation of monthly food expenditure

Monthly food expenditure						
Valid			Std.			
count (n)	Minimum	Maximum	Mean	Deviation	Skewness	
422	R90.00	R3 000.00	R659.96	± 440.735	2.049	.119

4.5.2 Measuring Food insecurity among students

To assess hunger (food insecurity) by means of using single-item measure, a student was classified ‘vulnerable to food insecurity or at risk of being food insecure’ if they ticked one of the following on the questionnaire (number of meals per day on normal circumstance): Breakfast and lunch only (BL); Lunch and supper only (LS); Breakfast and supper only (BS). An individual (student) was classified ‘highly vulnerable to food insecurity’ when they ticked “one meal per day” (Table 4.4). Results show that the majority (53.1%) of the students were vulnerable to food insecurity as they had less than three meals a day under normal circumstances; of whom 44% experienced moderate levels of vulnerability (they had two meals per day); and 9.2% were severely vulnerable as they had only one meal per day under normal

circumstances. The distribution of food insecurity prevalence from some demographic attributes (gender, funding, study level, college of study) is summarised in Table 4.4.

Table 4.4 presents the results of the perceptions of the students of their food security status. The results show that more males (39%) had a perception that they were food insecure compared to 33.5% of females who indicated that they were food insecure. With regard to funding, most of the students (40.7% and 39.3%) sponsored by NSFAS and “student loan”, respectively, indicated that they perceived themselves to be food insecure compared to the other students who were sponsored by the NRF (28.3%). This perception by some students on their food security status reflect what previous studies had reported on. For instance, a recent investigative study on students’ food insecurity by Van den Berg & Raubenheimer (2015) at the University of the Free State shows that food insecurity prevalence was high among students who relied on loans and bursaries to finance their studies. Although Berg & Raubenheimer’s study did not investigate the students’ own perceptions about their food insecurity status, such a study underscores the notable existing evidence that students who are on financial aid are at high risk of being food insecure.

Cross-tabulations were performed to determine the percentages of male and female students with regard to their vulnerability to food insecurity. Table 4.4 shows that of the students who were considered highly vulnerable to food insecurity (had one meal per day under normal circumstances), 11% were male compared to 7.4% of their female counterparts who constituted those who were highly vulnerable to food insecurity. Results in Table 4.4 also shows that by means of funding, students who were funded through NSFAS and student loans (12.3% and 13.8% respectively) seemed to be more vulnerable to hunger (food insecurity) compared to students who were self-sponsored (8.0%) or sponsored by their families.

Similar trends among students attending higher education have been reported in some studies. In Canada, Willows & Au (2006) reported a positive correlation between food insecurity and reliance on financial aid. In South Africa, a recent study by Van Den Berg & Raubenheimer (2015) reported that South African students in higher education who were on financial aid were found to be significantly at risk of being food insecure compared to those who had other means of financing their studies. This reason is based on the notion that in post 1994 South Africa,

most higher education students who were on financial aid were from economically disadvantaged backgrounds (Jones *et al.*, 2008; Letseka & Maile, 2008) such that they are inevitably at risk of underperforming academically due to poverty-related challenges such as food insecurity which affects their physical and intellectual potential. Poverty has been identified as one of the key factors that are directly linked to food and nutrition insecurity particularly at household and individual level (Barrett & Lentz, 2013; Maxwell *et al.*, 1999).

In their work on, *Achieving Food and Nutrition Security*, Bokeloh (2009: 39) shows that poverty is the underlying cause of food and nutrition insecurity being that an individual is regarded absolutely poor when he or she is unable to meet his or her basic necessities such as food, health, water and primary education. The implication is that poverty is a pre-condition to one's vulnerability of food insecurity such that poor households and individuals hardly achieve food security due to lack of adequate resources or contribute to the creation of resources on a sustainable basis (Bokeloh, 2009: 40). Some authors have suggested a correlation between poverty and student educational outcomes (ref). In the context of South Africa, a study by the Human Sciences Research Council's student pathways in 2006 and 2007 documented that nearly 60% of households of higher education dropouts in the country were poor (Letseka & Maile, 2008). The authors reiterated that this has affected South Africa's graduation rate of 15%, which is one of the lowest in the world. Nicole Murdoch, Executive Director for Teaching, Learning and Quality at the 'Monash University South Africa', concurred with the assertion that the graduation rate among undergraduate students in 23 public universities in South Africa is one of the lowest in the world (Mtshali, 2013). Additionally, research shows that various statistics from across the country's IHLs also indicate that an average of 35% of students in South Africa fail to complete their degrees, with 52% dropping out of universities of technology, while 17% of the students do not complete courses at Technical and Vocational Education and Training (TVETs) (Letseka, 2009).

4.5.2.1 Food insecurity among undergraduate students

To estimate vulnerability to food insecurity by means of education level, undergraduate students had a higher prevalence of food insecurity as the majority (54.3%) of them ate less than three meals on a day compared to 45.7% of their postgraduate counterparts. Results also show that more undergraduate students were vulnerable to hunger (severe food insecurity) as

nearly 10% of them ate only one meal per day compared to 7.1% of postgraduate students who ate one meal on a normal day. Quite a number of researchers (Jones *et al.*, 2008; Lesteka & Maile, 2008; Munro *et al.*, 2013) have documented the likelihood of undergraduate students, especially for the first generation of those accessing higher education (Van den Berg & Raubenheimer, 2015) being at high risk of being food insecure due to poverty-related burdens which they carry from their families or backgrounds.

Table 4.4: Vulnerability to food insecurity and perceptions about food insecurity status

Meals per day under normal circumstances (N=441)	Gender (%)		Funding (%)				Study level (%)			College of study (%)			
	Male	Female	NSFAS	Loan	Bursary	NRF	Self	UG	PG	Agriculture, Law & Engineering management & Science	Humanities	Health Sciences	
BLS	47.6	46.3	42.2	34.5	52.2	47.8	48.4	45.7	59.5	51.4	53.7	38.3	55.6
BL	2.9	3.0	3.3	0.0	4.4	2.2	2.7	2.3	9.5	4.3	1.2	3.6	2.2
LS	16.2	17.3	12.2	13.8	14.4	15.2	21.0	17.1	14.3	12.9	15.9	18.4	17.8
BS	22.4	26.0	30.0	37.9	22.2	26.1	19.9	25.6	9.5	25.7	20.7	28.6	17.8
One meal	11.0	7.4	12.2	13.8	6.7	8.7	8.1	9.3	7.1	5.7	5.0	11.2	6.7
Do you regard yourself food insecure?													
(N=433)													
Yes	39.0	33.5	40.7	39.3	30.4	28.3	38.4	35.3	45.2	37.3	19.8	44.5	32.6
No	61.0	66.5	59.3	60.7	69.6	71.7	61.6	64.7	54.8	62.7	80.2	55.5	67.4

Note: UG=undergraduate, PG= Postgraduate

To assess hunger (food insecurity) by means of correlations, the variables (gender and funding) were analysed using nine -item generic occurrence questions for measuring food access related conditions in households in the past four weeks (30 days). As noted earlier, the primary aim of using this measure was to assess the food insecurity among individual students. Spearman's correlation was performed to determine any significant association between the variables. Respondents were classified being vulnerable to food insecurity if they answered 'yes' to any of the items (unable to eat preferred meals or sacrificed the quality of meal due to lack of resources). In addition, respondents were classified as being increasingly vulnerable to food insecurity if they answered 'yes' to any of the severe conditions (running out of food to eat due to lack of resources, 'going to bed hungry', or going 'whole day' or 'whole night' without eating) as presented in Table 4.5.

Table 4.5 shows that vulnerability to severe food insecurity was more prevalent in NSFAS sponsored students as 48.1% of these students had no food due to a lack of resources while 39.6% of them went to bed hungry and nearly 28% of these stayed hungry the whole day and night without food, due to food insufficiency. On the other hand, bursary-sponsored students and self-sponsored students constituted minimum percentages (20.9% and 19.8 %) of those who were severely vulnerable to food insufficiency. With regard to gender, the results show that there was a significant correlation between male students (53.5%) and female (46.5%) students who ate fewer meals a day due to food insufficiency (Spearman's correlation coefficient $r=0.115$; $p= 0.016$). This is an indication that gender had an influence on the number of meals a student ate due to food sufficiency. These results are not new to some institutions of higher learning. Previous studies at the University of the Free State, (Van Den Berg & Raubenheimer, 2015) found that food insecurity was more prevalent in male students compared to the female student.

Spearman's correlation analysis was also performed to determine an association between food insecurity and funding among the students. Table 4.5 shows that there was a significant correlation between the type of funding and the students who indicated that they were worried that they would not have enough food ($r=0.108$, $p= 0.022$). The results also showed that there was a significant correlation between funding and not having food to eat due to lack of resources ($r=0.119$, $p=0.012$). On the other hand, no significant relationship was found between

funding and the rest of the variables. However, of interest is that largely, funding seemed to influence the students' food security status in the university as shown in Tables 4.4 and 4.5. Moreover, research by Letseka & Maile (2008) revealed that even when the NSFAS is granted to financially needy students in South Africa; it is inadequate, as other needs such as food security could be unmet. Another study by Munro *et al.* (2013) found that students on financial aid are the most vulnerable to food insecurity. Table 4.5 displays the results.

Table 4.5: Results of responses to HFIAS 9-item generic occurrence questions and correlations between FI and gender, and between FI and funding

In the past 4 weeks, I:	Gender (%)				<i>(r)</i>	Funding (%)										<i>(r)</i>
	Male		Female			NSFAS		Student Loan		Bursary		NRF		Self-sponsored		
	Yes	No	Yes	No		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Was worried that I would not have enough food?	57.2	42.8	49.6	50.4	.076	71.6	28.4	43.3	56.7	46.2	53.8	44.4	55.6	51.1	48.9	.108*
Was not able to eat preferred foods due to lack of resources	60.5	35.5	57.2	42.8	.033	72.6	27.4	46.7	53.3	51.1	48.9	58.0	42.0	58.8	41.2	.070
Ate a limited variety of foods due to lack of resources	62.3	37.7	54.5	45.5	.080	69.5	30.5	73.3	26.7	48.4	51.6	51.1	48.9	56.7	43.3	.086
Ate unwanted food due to lack of resources	56.7	43.3	51.5	48.5	.053	68.4	31.6	56.7	43.3	46.2	53.8	40.0	60.0	53.5	46.5	.085
Ate smaller meal because there was not enough food	53.5	46.5	46.4	53.6	.071	62.1	37.9	50.0	50.0	46.2	53.8	31.1	68.9	49.7	50.3	.074
Ate fewer meals a day due to lack of enough food	55.7	44.3	44.2	55.8	.115*	65.6	34.4	50.0	50.0	41.1	58.9	37.0	63.0	49.2	50.8	.085
Had no food to eat due to lack of resources to get food	35.4	64.6	29.3	70.7	.065	48.1	58.2	36.7	63.3	32.2	67.8	32.6	67.4	26.7	73.3	.119*
Slept hungry at night because there was not enough food	29.9	70.8	25.8	74.2	.039	39.6	60.4	20.0	80.0	20.9	79.1	26.1	73.9	26.2	73.8	.069
Was hungry whole day and night because there was not enough food	22.2	77.8	22.3	77.7	-.002	27.5	72.5	20.0	80.0	20.9	79.1	26.1	73.9	19.8	80.2	.056

Notes: *, Correlation is significant at 0.05 (2- tailed). FI=food insecurity; *r*= Spearman's Correlation Coefficient

4.5.3 Perceived effects of food insecurity on academic performance

Food insecurity is often underestimated as a psychological and/or emotional stressor that could cause or affect certain behaviours (Jyoti *et al.*, 2005). Therefore, there was a need to understand students' experiences and their perceptions about the likely impact of food insecurity on their academic activities. Table 4.6 shows that the negative effects of food insecurity were reported by the majority (64.6%) who indicated that hunger affected their concentration and/or their effectiveness as students, while 27.7% of them reported that they had missed classes because they did not have enough food to eat. Table 4.6 also shows that the negative effects of hunger on students' academic activities were also reported among postgraduate students or 2% of them (0.9%; 1.1%) who indicated that they had missed classes because they did not have enough food to eat. Moreover, more than 5% (3.6%; 2.0%) of postgraduate students indicated that hunger affected their vigour as students.

However, the incidents of absconding classes were reportedly high among undergraduate students 25.7% (13.2%; 12.5%) compared to postgraduates students. To some extent, these results displayed in Table 4.6, reflect the relationship between food insecurity and cognitive issues regarding the severely food insecure students who were unable to attend class and/or to concentrate in class due to compromised cognitive power caused by hunger. In addition, the results suggest that an element of Maslow's Hierarchy of Human Needs largely fits into this context. Maslow's Theory of Human Motivation and Hierarchy of Needs Model portrays the individual as an integrated organism and classifies all human endeavours as an attempt to gratify one of the five needs, which are physiological, safety, belongingness, love and esteem, and Self-actualisation (Maslow, 1954; Maslow, 1943). Maslow's theory facilitates understanding of human behaviour rather than a rigid prescription of governing all human activities. In addition, a recent study by Tay & Diener (2011: 364) examined an association between the fulfilment of human needs (hypothesised by Maslow) and Self-wellbeing across diverse regions of the world (123 countries) revealed that, often, people achieve basic needs before other needs. In this context, depriving the physiological need (food and nutrition security) to an individual (a student) could affect his or her academic activities, which they are likely to abscond from thereby, compromising their intellectual potential.

In this context, food insecurity was represented by food impoverishment or the lack of a physiological need which was linked to cognitive power and esteem needs of a student, consequently demoralising a student from attending to his or her academic activity and concentrating in class. According to the Hierarchy of Needs Model, physiological needs can threaten the survival of an individual if not gratified. In other words, a severe food-insecure student incapable of gratifying the food and nutrition needs becomes vulnerable to low self-esteem needs as he or she will lack motivation for school as reflected in Table 4.6. Thus, the student is bound to suffer from physiological disorders that can be manifested by hunger, depression, and deprivation of esteem needs. Such a student will eventually underperform academically and risks losing his or her academic qualification. Jean Piaget's perception of Cognitive Learning in Human Behaviour (Fischer, 1980) is also appropriate to this context. For instance, the students' cognitive power was dependent on their physiological state and health. Therefore, food and nutritional status was a prime determinant of the students' psychological state, which impoverished their academic potential as evidenced by the results in Table 4.6.

Previous research has reported an association between poverty-related issues and psychological distress. A Canadian study by Hamelin *et al.* (1999) affirmed that low economic status can lead to depression, and in turn, it can affect cognitive stability and functionality (limits the learning and brain memory structures), and ultimately behaviour. A similar study by Visser (2007), supports the view that poverty circumstances can affect perceptual and cognitive processes. Within this context, the surveyed students reflect a view that to some extent, food insecurity negatively affects students' academic activities such as class attendance, which can compromise academic performance and educational outcomes. Table 4.6 outlines the results.

Table 4.6: Perceived effects of food insecurity on academic performance

Statement/response	Study level				Total	Gender				Total (%)
	UG		PG			M		F		
	(n)	%	(n)	%		(n)	%	(n)	%	
Hunger affects my concentration/effectiveness as a student (N=441)										
Strongly agree	164	37.2	16	3.6	40.8	81	18.3	99	22.4	40.7
Agree	96	21.8	9	2.0	23.8	60	13.6	45	10.2	23.8
Neutral	53	12.0	5	1.1	13.2	28	6.3	30	6.8	13.1
Disagree	42	9.5	7	1.6	11.1	23	5.2	26	5.9	11.1
Strongly disagree	43	9.8	6	1.4	11.1	22	5.0	28	6.3	11.3
I have missed classes because I did not have enough food to eat (N=440)										
Strongly agree	58	13.2	4	0.9	14.1	30	6.8	62	7.3	14.1
Agree	55	12.5	5	1.1	13.6	32	7.3	60	6.3	13.6
Neutral	57	13.0	3	0.7	13.6	32	7.3	61	6.6	13.8
Disagree	73	16.6	10	2.3	18.9	37	8.4	83	10.4	18.8
Strongly disagree	154	35.0	21	4.8	39.8	82	18.6	175	21.1	39.7

*UG=undergraduate; PG=post graduate; M=male; F=female

4.6 Conclusions and recommendations

This study contributes to the body of knowledge on the prevalence of food insecurity among students attending higher education in a developing country with high levels of food insecurity at the household level and high socio-economic inequalities. Awareness about student experiences of food insecurity in South African IHLs is critical as this phenomenon negatively affects students' physical and intellectual potential as evidenced by the study.

In conclusion, results from the study reflect that food insecurity is high among students at South African institutions of higher learning. The rate of food insecurity is higher among students on financial aid compared to those who were self-sponsored. Nearly 43% of the students perceived themselves to be food insecure. The study also shows that undergraduate students were more vulnerable to the phenomenon compared to their postgraduate counterpart. Both undergraduate and postgraduate students reported that food insecurity affected their academic activities. In Africa, education is widely recognised as a benchmark to uplifting the youth, families and society from poverty.

One critical measure to absorb the youth in economic activities is through increased access to quality higher education and high graduation outputs. Yet this education could be achieved when students at the institutions are well cared for including in areas of food security. Given the potential of food poverty-related issues like food insecurity, and poor academic outcomes, food security measures should be considered when analysing students' needs. It is imperative that the UKZN should target students while they are in their first-year studies and educate them on the importance of food security and budgeting skills; moreover, on the importance of having nutritious meals for an active daily life.

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CHAPTER 5: PERCEPTIONS AND AWARENESS OF FOOD INSECURITY AND INTERVENTIONS AT INSTITUTIONS OF HIGHER LEARNING: A CASE STUDY OF UNIVERSITY OF KWAZULU-NATAL, SOUTH AFRICA

5.1 Abstract

Food insecurity largely due to poverty significantly contributes to students' underperformance in South African Institutions of Higher Learning (IHLs). The University of KwaZulu-Natal (UKZN) is no exception as nearly 50% of its students are from economically disadvantaged backgrounds. While the UKZN implemented a Food Security Programme (FSP) to address food insecurity among students in 2012, clear knowledge of how the intervention is currently perceived by the stakeholders at the IHL remains elusive and complex. This study determined the stakeholder's perceptions associated with student hunger, the causes of food insecurity and interventions associated with it. To arrive at the relevant conclusions, the study used a mixed method approach, collected data using survey questionnaires, focus group discussion and key informant interviews with various primary stakeholders at UKZN. The findings suggest that student food insecurity is multifaceted, caused by various factors including poverty (family economic burdens), inadequate and limited access to funding, and lack of institutionalised meal plans for the students. Results also show that student hunger is influenced by some risk behaviours exhibited by students who lack proper orientation about managing their food budgets and lack of prioritisation of a healthy diet. In addition, while the staff members were aware of the food security programme, the overwhelming majority (90.3%) of the target beneficiaries-the students, were not aware of the intervention at UKZN. This is despite the high prevalence of food insecurity, which affects 53.1% of the students. In addition, there was a resistance related to stigmatisation and negative perceptions of food aid, which could hinder future implementation of food security programmes. Paradoxically, food insecurity was acknowledged by 70% of the surveyed students, as a human right issue. Results also suggest that the stakeholders preferred a collective approach to addressing the challenge of food insecurity in a more sustainable way at the IHL.

Keywords: collective response, food poverty, risk behaviour, social stigma, university students.

5.2 Introduction

Food insecurity has been identified as an emerging issue among students in IHLs (ref). In wealthy countries such as Australia, Canada, and the United States of America (USA), the prevalence of the student food insecurity has been reported to be higher in universities than the national average (Nugent, 2011; Hughes *et al.*, 2011; Maroto *et al.*, 2015). In developing countries like South Africa, recent studies suggest that household socio-economic burdens affect students at IHLs. The most affected are students from resource-poor families (Letseka & Maile, 2008; Gwacela, 2013; Kassier & Veldman, 2013; Van den Berg & Raubenheimer, 2015) who are unable to afford all the high educational costs including stationery, transportation and adequate food. Some studies suggest that the UKZN, South Africa, counts among the affected institutions given that most of its students come from historically disadvantaged backgrounds (Kassier & Veldman, 2013).

Within this context, a study by Munro *et al.* (2013) conducted between 2007 and 2010 shows that at the UKZN resource-poor students who are dependent on financial aid were highly vulnerable to food insecurity. The study also reported the potential impact of severe food insecurity on the students' educational outcome such that it served as a motivation behind the implementation of the UKZN student FSP as an intervention in 2012 (UKZN, 2012). However, what constitutes the knowledge gap is that since the implementation of the FSP, the current prevalence of the problem among students, the awareness level of the intervention programme among the UKZN stakeholders and the perceptions about this critical intervention are undocumented. Therefore, this serves as a motivation for this chapter as it aims to examine the perceptions and experiences of food insecurity among students and the perceptions of food insecurity interventions among various stakeholders at the IHL.

5.3 Methodology

The study used a mixed-methods approach, a combination of qualitative and quantitative methods. A mixed methodology is used to address questions, which a single methodology cannot answer (Rossman & Wilson, 1991) and it is intended to complement one source of information with the other. This approach triangulates and addresses issues from different data sources and provides comprehensive answers that could be limited by a single data source. By means of triangulation, the study incorporated different methods of collecting data using

surveys, focus group discussions and face-to-face key informant interviews. The purpose was to increase the validity of the study.

5.3.1 Context of the study

The UKZN is a South African public university situated in KwaZulu-Natal, one of the poorest provinces in the country. Chapter 3 of this dissertation provides a detailed description of the study context.

5.3.2 Sampling techniques

Chapter 3 of this dissertation provides details of the research participants, who served as respondents during the study. The study was conducted at the five campuses and four colleges of the UKZN. To collect quantitative data, the study conducted two surveys that were administered to full-time students and academic staff at UKZN. From the two surveys, a total of 94 [N=100] academic staff and 456 [N=500] fulltime students participated in the study, respectively. To collect qualitative data, some 13 support staff which included: the ADOs were interviewed. These individuals participated in focus group discussions/interviews, which were conducted in the four colleges of UKZN. In addition, a purposive sampling was held to target nine key informants at the University, of which four were the senior management staff (Executive Deans, from the Teaching and Learning division) and five members of the Student Representation Council (SRC [student services division]) from each campus. As a result, eight key informants participated in the face-to-face interviews, of whom five were SRC members and three were Executive Deans in three of the four colleges of UKZN (Humanities, Agriculture, Engineering & Science, Law & Management, and Health Sciences). All the participants (staff and students) participated in the study on a voluntary basis.

5.3.3 Surveys

A survey questionnaire for students was developed (based on the research objectives) to include measures to collect information about behaviours and perceptions of the surveyed students (Appendix A). This included vulnerability to food insecurity; perceptions about the students' food security status; perceived effects of food insecurity on students' academic performance; awareness of food security support programmes and willingness to utilise the programmes; and attitudes towards food insecurity and food aid. Demographic data about the sampled students

are summarised in Table 5.1 of this chapter. The questionnaire included closed questions, that is requiring ‘yes’ and ‘no’ answers, and multiple questions using the Likert scale rating of three and five items. To estimate vulnerability to severe food insecurity within the student population, (Appendix A) questions were formulated using the Household Food Insecurity Access Scale (HFIAS) recommended by the Food and Nutrition Technical Assistance (FANTA) project (Coates *et al.*, 2007). Survey questionnaires were delivered to fulltime registered students. The respondents were requested to sit apart from each other to ensure confidentiality. The survey took approximately 13 minutes to complete. Table 5.1 outlines the demographic results of the surveyed students.

A survey questionnaire for academic staff (Appendix B) was administered because they are part of the primary stakeholders in UKZN. These were sampled on assumption that as an academic⁹, they interacted with students and were familiar with students’ needs. Demographic attributes of the sampled academic staff are summarised in Table 5.2 of this chapter. To incorporate respondents from the university community, 100 questionnaires were equally distributed across all four colleges. Once confirmed to be an academic staff member and willing to participate, the academic staff members completed the questionnaire and returned it directly to the researcher. The questionnaire took approximately 10 minutes to complete. The questionnaire was made up of 17 questions, which investigated perceptions and knowledge of food security interventions at UKZN. The questionnaire consisted mostly of closed questions and some open-ended questions. Out of the 100 distributed questionnaires, 94 of them were completed and returned to the researcher, giving a high rate (94%) of participation rate. Table 5.2 displays the demographic results of the surveyed staff.

⁹ In this study, the words academics and lecturers are used synonymously to mean individuals who are employed to teach students at UKZN.

5.3.4 Focus group discussions

A focus group discussion guide (Appendix 3) was formulated to collect qualitative data. A series of focus group discussions were conducted with the ADOs. Some of the questions were based on the participants' perceptions of food security and insecurity among students in the university as well as their awareness about the student FSP as an intervention at UKZN. Ideally, an average group for the focus group discussion should be 9-14 people (Berg *et al.*, 2004; Edmunds, & American Marketing Association, 1999). However, the focus group discussions were held during the national-wide 'Fees Must Fall Campaign' that affected some academic programmes in the university on two consecutive years (2015 and 2016). Hence, depending on availability of the participants, most discussions were held in much smaller groups of two-four respondents, which took an average of 20-39 minutes, and some ADOs were interviewed individually. All focus group discussions were conducted in natural settings¹⁰.

5.3.5 Face-to-face interviews

The key informant interviews were face-to-face and were individually conducted in natural settings to facilitate a conducive atmosphere that would allow the participants to ask questions during the interview. Two interview guides were formulated (Appendix C), one for staff and one for students (SRCs), and were distributed to the participants prior the interviews. The questions asked in the interviews probed the respondents' experiences in dealing with student issues such as food insecurity, their awareness of the FSP as an intervention at UKZN and their opinions and recommendations on addressing the phenomenon. On average, each interview took 15-19 minutes. All interviews were conducted in natural settings.

5.3.6 Data analysis

Data from the two survey questionnaires were analysed descriptively using the IMB Statistical Package for Social Sciences (SPSS version 24). Frequency tables were performed to determine the percentage of variables such as demographic information, while cross-tabulations and Spearman's (*r*) correlations were performed to determine the categorical relationship in most

¹⁰ The researcher used a naturalistic approach to study the subject matter. The subject matter was studied as experienced by the subjects in their natural habitat at UKZN. Therefore, interviews/focus group discussions were conducted without influence on the behaviours of the subjects. Interviews conducted in natural settings are prone to disturbances such as background noises and disruptions of participants (Denzin & Lincoln, 1994).

variables and the association between variables in non-ratio data, respectively. Data from focus group discussions and face to face interviews were transcribed, coded and analysed by associating themes, concepts and verbatim/quotes that emerged from the discussions with applicable literature.

5.4 Results and discussion

In this section, the research findings obtained from the survey questionnaires, focus group discussions and key informant face-to-face interviews are presented and discussed. To complement the findings, various sources of literature were naturally incorporated in the discussion.

Table 5.1: Demographic attributes of students

Variable description	Gender				[N=456]	Total (%)
	Female		Male			
	(n)	(%)	(n)	(%)		
All participants	337	52	219	48	453	100
Age						
≤ 21	169	37.3	134	29.6	303	66.9
Between 22-25	60	13.3	52	11.5	112	24.8
Between 26-30	31	0.4	24	5.2	31	6.8
Between 31-35	0	0.0	4	0.8	4	0.8
>35	0	0.0	3	0.6	3	0.6
Nationality						
International	4	0.9	16	3.5	20	4.4
South African	232	51.1	203	44.6	435	95.6
College of study						
Agriculture, Engineering & Science	36	7.9	35	7.7	71	15.7
Law and management	43	9.5	40	8.3	83	18.3
Humanities	120	26.5	86	19.0	206	45.5
Health Sciences	37	8.2	56	12.4	93	20.5
Level of study						
Undergraduate	216	47.5	196	43.1	412	90.5
Post graduate	21	4.6	22	4.8	43	9.5
Funding						
NSFAS	52	11.4	44	9.6	96	21.1
Student loan	12	32.6	18	3.9	30	6.6
Bursary	43	9.4	50	11.0	93	20.4
NRF	25	5.5	21	4.6	46	10.1
Self-sponsored	105	23.0	86	18.9	191	41.

Note: A detailed description of Students' demographics is discussed in Table 4.1 of Chapter 4.

Table 5.2: Demographic data of academic staff

Variable description	Gender					Total (%)
	Female (%)	(n)	Male (%)	(n)		
All participants	[N=94]	41.5	39	58.5	55	100.0
College						
Law and Management	7	7.4	18	19.2	25	26.6
Humanities	11	11.7	14	14.9	25	26.6
Health Sciences	14	14.9	5	5.3	19	20.2
Agriculture, Science and Engineering	7	7.5	18	19.1	25	26.6
Job category						
Lecturer	24	25.5	31	33.0	55	58.5
Senior Lecturer	6	6.4	12	12.7	18	19.1
Contract lecturer	4	4.3	3	3.2	7	7.5
Professor	5	5.3	9	9.6	14	14.9
Teaching years						
<1 year	2	2.1	3	3.2	5	5.3
1-5 years	16	17.1	20	21.2	36	38.3
6-10 years	7	7.4	13	13.8	20	21.2
11-15 years	6	6.4	9	9.6	15	16.0
16-20 years	2	2.1	4	4.3	6	6.4
21-25 years	2	2.1	4	4.3	6	6.4
26> years	4	4.3	2	2.1	6	6.4

5.5 Perceptions about food security and insecurity: Definitions

To determine the stakeholders' (students, support staff, academic staff and senior management staff of the UKZN) perceptions or definition of food security-insecurity, an open-ended question was asked and the participants were required to write down their understanding and meaning of food security or insecurity. All the responses emerging from the surveys were coded and were descriptively analysed in IBM SPSS version 24 as presented in Table 5.3 and Table 5.4. The findings suggest that many participants provided a range of interesting responses some of which had some fundamental elements ('availability', 'access', 'utilisation' and 'stability' of the food security) as provided in the World Food Programme definition of 1996

(World Food Summit, 1996). This verifies the complexity of the phenomenon under study. For instance, from the perspectives of the students, about 31.4% linked food insecurity to the lack of a 'nutritious meal'. It is acknowledged that the 'nutritional aspect' of food is very significant to food security as it relates to the notion of diet. Closely related to this view was the perception by 3.5% (n=16) of the student participants who associated food insecurity with eating 'unhealthy food'. While this perspective identifies the lack of nutrition with food insecurity, it ignores the quantity/inadequacy and instability part of the 'nutritious meal' that affect food security among individuals. However, some participants (28.1%) defined food insecurity as 'not having enough food to eat'. Such a perspective limits food insecurity to food inadequacy. Furthermore, the notion that food insecurity was associated with hunger by 16.4% of the respondents defined food insecurity as not having 'access' to a basic meal. This notion is important as it also relates to having a 'basic meal' as a basic human right. It is also noteworthy that some respondents used the concept of food insecurity and food security interchangeably. For instance, some 6.4% (n=29) of the students, associated food insecurity with living 'without' food anxiety issues, as such they indicated, 'not worrying about food availability'. This view suggests that a food secure individual or student will not have any anxiety about his or her next meal.

Table 5.3: Students' definition of food insecurity

Question: What is your understanding of food insecurity at tertiary institutions?					
Variable description	Response				Total
					100%
	Yes		No		
	(n)	%	(n)	%	
Not enough food to eat	75	16.4	381	83.6	
No access to basic meal	29	6.4	427	93.6	
Not worrying about food availability	143	31.4	313	68.6	
Lack of nutritious meal	66	4.5	390	85.5	
Not familiar with the concept	16	3.5	439	96.5	
Eating unhealthy food	16	3.5	439	96.5	

Table 5.4 outlines results showing the academic staff's perceptions of food security ranging from: having 'regular balanced meals daily' by 22.3%, to 'access, adequate, nutritious and affordable food' by (16%). This suggests that unlike the students, some lecturers associated food security with most of the fundamental elements of the definition. Apart from considering food security as a basic need, the aspect of food as a human right was explicitly considered by 10.6% of them who conceptualised food security as the 'basic right to food'. Furthermore, the findings emerging from the key informant interviews emphasised food security as a fundamental human right. Likewise, in response to the following question 'What is your understanding of food security?', one of the Executive Deans for Teaching and Learning explicitly stated, *"One can look at it [food security] from different perspectives, but I suppose you start from the Constitution which talks about people's rights. These are basic rights which people should have"*.

Similar responses outlined in Table 5.3 were reflected in Table 5.4. For instance, food security and food insecurity concepts were used interchangeably by 11.7% of the academic staff who

associated food security with food insecurity. These respondents conceptualised food security as ‘lacking access to food’. In addition, some 10.6% of the academic staff indicated that they were not familiar with the concept. This figure is much larger compared to only 4.5% of the students who held a similar view. Nevertheless, using the concept of food security and insecurity interchangeably shows that the term food insecurity is multifaceted with various ways of interpreting it. Moreover, some food security analysts (Hendriks, 2005; Simon, 2012) acknowledge that even the empirical estimation of food insecurity is cumbersome to determine due to multifaceted methodological approaches to interpreting it. Table 5.4, outlines the academic staff responses on food security definition.

Table 5.4: Staff’s definition of food security

Variable/response	(N=94)	Percentage (%)
Regular balanced meals daily	21	22.3
The basic right to food	10	10.6
No anxiety about food	2	2.1
Access, adequate, nutritious, affordable	15	16.0
Affordable, available	5	5.3
Adequate, access, affordable	12	12.8
Available, nutritious food	1	1.1
Safe to eat	7	7.4
No answer/don’t know	10	10.6
Food insecurity	11	11.7

In view of Table 5.4, results emerging from the interviews with the SRC, suggest that they linked the nutritional aspect of food security, to an individual’s wellbeing. For instance, one of the members stated:

Food security means that a student gets at least three meals a day, nutritious food not like junk food, but nutritious-proper food and that is needed for the student to study. For the brain cells to work for his body, the student needs nutritious food. I think that’s food security for students.

These sentiments acknowledge the importance of having an adequate nutritious meal for an active daily life, particularly for a student to succeed academically (Kirkpatrick & Tarasuk, 2008). Another SRC officer held similar views to those expressed above and acknowledged the ‘sustainability’ aspect of food security by stating, “*Food security in general, means food availability and whether the student is secure for the whole month and has enough food to sustain him and to do what he is expected to do*”.

The multiple perceptions of food security and insecurity reflected in section 5.4 are evidence of the complex nature of food poverty amongst students. In addition, none of the respondents considered ‘food preference’, to be one of the fundamental aspect of food security. However, the overall statement emerging from these findings is that largely, the stakeholders were familiar with the concept of food insecurity or food security, as their definitions constituted some fundamental elements(‘availability’, ‘access’, ‘utilisation’ and ‘stability’), projected in the definition, of the World Food Programme (World Food Summit, 1996). In the context of this study, food security is defined as the ability of a student to acquire sufficient food and nutritious diet, which is culturally acceptable for his or her active daily life. The study also considers student food insecurity as the absence of food security.

5.6 Perceptions of food aid versus social stigma

The surveyed students were asked about their perceptions regarding food aid, their economic status, and food insecurity. Spearman’s correlations were performed to determine the relationship between male and female students’ perceptions regarding food insecurity and food aid. Table 5.5 outlines these results which suggest that there was a negative significant association between male and female students with regard to their perceptions of ‘lack of food as a deprivation of the right to food’ ($r=-.095$). There was also a positive significant relationship between male and female students regarding their perceptions of food insecurity with regard to self-esteem; and with regard to ‘sleeping without food than receiving food aid’ respectively ($r=.123$; $r=.104$). However, no statistically significant relationship was found for the rest of the variables with regard to gender. Moreover, the overall statement arising from these results is that while the majority of the students (70%) perceived food insecurity as a deprivation of human rights, some of them had negative perceptions about food aid. Likewise, 23.3% of them indicated that it was embarrassing to accept free food, while 27.3% of them indicated that it

was embarrassing to be known not to having the means to acquire food as a student. In addition, social stigma was attached to food-aid, 30% of the respondents preferred anonymity rather than disclosure of one's poor economic background. Furthermore, the findings in Figure 5.1 show that more than 60% of the surveyed students either disagreed or remained neutral to recommending a food insecure student to receive food assistance through the FSP in the University. Ideally, it would be expected that students at IHLs, would be willing to utilise or to recommend their fellow students in need of such critical programmes. However, the negative perceptions of poverty and food insecurity reflected here are evidence that food insecurity is perceived as a 'shameful secret' among food insecure students in universities. To complement this argument, similar results obtained from the interviewed students (SRC) who elaborated on the issue of 'shame' by stating that some students would rather suffer from hunger than being exposed or receive food aid:

Sometimes they are ashamed to actually come out and say, you know what, I am hungry, I don't have food, or I don't have money to buy food. Even if they want to, there's that shame that I can't go and say am hungry.

Sometimes, students are shy to come out and speak about it because they are afraid of what people might say about them. So I think it's a serious challenge.

The sentiments presented above suggest that food insecure students are not comfortable to discuss their predicament of hunger openly. In addition, the findings presented above concurred with Maslow's, view on the human's need to gratify his or her very basic necessity such as food, which he argued would motivate an individual to long for other needs such as self-esteem (McLeod, 2007). In this case, the food insecure students' self-esteem was compromised by their lack of motivation to discuss openly, about their economic and food insecurity status. This is attributed to some negative perceptions attached to food insecurity and poverty status of an individual (Strobel, 1996). Furthermore, issues regarding student food insecurity and social stigma have been documented in some studies. Research by Van den Berg & Raubenheimer (2015), at the University of the Free State (UFS), an institution with nearly 60% of food insecure students, reported that some students were reluctant to apply for the 'No Student Hungry Programme', a UFS food aid programme which they thought would expose their poor economic status on campus and trigger stigmatisation. The food insecure students felt that because they fall into the disadvantaged category (poverty) they would not want to be

stereotyped as food-aid dependents such that they prefer to conceal the problem. Similar findings were recorded in USA, where Shreeves (2010) referred to a publication, *The Atlantic*, which reported about the dilemma of hidden hunger and food aid among severely food insecure students at the University of California. The publication reported that the students who did not perceive their lack of food as a problem such that even after the campus 'Food Closet' project was launched to address their predicament, there was a feeling of 'shame' among them, to receive food aid. This resulted in very low beneficiary- turnout for the project (Shreeves, 2010).

Although food aid could be associated with stigmatisation, the opposite could be a reality. Research in the United Kingdom on clients' perceptions about the community food bank revealed that 81% of the respondents indicated that accessing food from the community food bank made a significant positive impact, particularly on their mental and psychological status. The beneficiaries indicated that food handouts helped them reduce stress-related problems such as anxiety about where their next meal would come from (Wokingham Trussell Trust Food Bank, 2014). This illustrates the need to create awareness about the importance of food as a basic human right and promoting food support programmes in IHLs, particularly those with a high prevalence of food insecurity. Table 5.5 outlines statistical findings of UKZN students' perceptions associated with food insecurity, stigma and negative social behaviour. Figure 5.1 outlines students' perceptions on recommending the food security interventions.

Table 5.5: Students' perceptions: food insecurity stigma and negative social behaviour

Statement	N=456	Gender						Spearman's (r) Correlation Coefficient
		Male%			Female%			
		(n)	Yes	No	Sometimes	Yes	No	
I am embarrassed to ask for food aid.	454	32.9	45.2	21.9	27.7	50.6	21.7	.037
I am embarrassed to accept free food.	450	22.2	64.4	13.6	24.4	59.0	16.7	.007
I am embarrassed to reveal that I cannot afford enough food.	450	27.3	56.9	15.7	26.7	56.9	16.4	.02
It is shameful to reveal my poor economic background.	446	30.0	53.4	16.6	28.6	54.1	17.3	.034
Having no food compromises ones dignity.	447	38.7	45.9	15.4	36.9	45.9	17.2	.051
I will rather sleep without food than receiving food aid.	449	9.4	86.6	4.0	7.3	87.1	5.6	.104*
I will rather steal food than receiving food aid.	448	8.7	88.8	2.5	6.4	91.5	2.1	.065
Lack of food diminishes self-esteem.	445	69.6	13.6	16.8	55.0	27.7	17.3	.123**
Lack of food is deprivation of the right to food.	443	70.0	22.8	7.2	73.6	22.1	4.3	-.095*

Notes: *, ** Correlation is significant at 0.05; 0.01 (2- tailed) respectively.

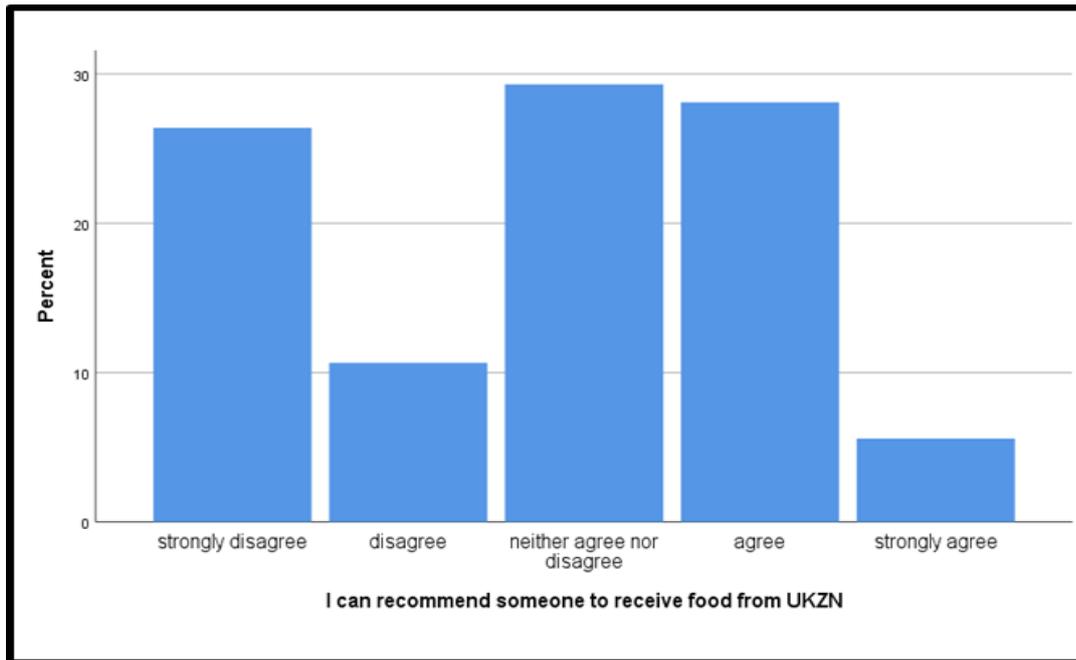


Figure 5.1: Students’ perceptions of food security interventions

It is argued that the findings presented in Figure 5.1, highlight the need to develop an effective approach for addressing the negative perceptions of food insecurity among students attending higher education in South Africa. With an approach such as a food security programme awareness, could be institutionalised in the IHLs with the aim of transforming the mind-sets of key stakeholders such that they would understand and embrace the essence of ensuring food security for students as a basic human right.

5.6.1 Perceptions associated with food insecurity and negative social behaviour

Another notable factor arising from the findings (Table 5.5) is that, apart from being a cognitive stressor, food insecurity was associated with some negative social behaviour, as there was a feeling of ‘shame’ for resorting to food aid and embracing unacceptable means to obtain food resources. Such students indicated that they would prefer to steal food (8.7%) or sleep on an empty stomach (9.4%) than receive food aid. This behaviour was more prevalent in male students (11.2%; 16.6%) than in female students (6.4%; 7.3%) respectively. These results provide added weight to previous research conducted in IHLs, which reported that students under financial pressure resort to coping strategies such as food theft to avoid the negative effects of food insecurity. In Australia, a study by Chapman *et al.* (2010) revealed that students

perceived food theft as an unpreventable act, which food-insecure students in universities resorted to, as an emergency measure to acquiring food. In South Africa, the University of the Free State recorded incidents of food theft among students who reportedly stole food because of hunger and poverty (Fekisi & Jaffer, 2013; Van den Berg & Raubenheimer, 2015). The reported incidents of food theft illustrate the importance of recognising food insecurity as a social-economic problem that needs to be addressed adequately at South African IHLs.

5.7 Coping strategies to food insecurity

The University of KwaZulu-Natal has a support centre system, which looks into student issues including their socio-economic problems, health, accommodation, counselling and guidance. These structures have been implemented across the campuses. Therefore, there was a need to ask students about their experiences and/ or opinions when they faced hunger-related issues in the university. Table 5.6 shows that 59.3% preferred seeking assistance from their fellow students (close friends) when they were hungry to receiving assistance from UKZN support structures.

Table 5.6: Students’ perceptions and coping strategies to food insecurity

Question: What do/would you do when you are food insecure?		
Responses	(n=430)	Percentage (%)
Ask friends on campus	255	59.3
Report to ADO	5	1.2
Student counselling	9	2.1
Report to SRC	8	1.9
Other/outside UKZN	153	35.6

These findings (Table 5.6) were complemented by the focus group discussions with the ADOs who elaborated that food insecure students sought assistance from their peers due to the late funding of the financial aid packages:

Some students have talked [complained] of taking time to receive their bursary funds or funding, and this has led them to underperformance. They were saying that ‘now I am okay’, but I was underperforming because of hunger and so on, and other students had to look after me.

The expression presented above is evidence that late funding has a negative influence on the students' food budget, which results in hunger and ultimately compromises the students' academic performance. The sentiments also suggest that students have developed some form of kinship by providing food assistance to their peers in need.

Likewise, an SRC officer stated:

I do receive students who tell me about issues of hunger, but now you end up finding that I do not have a budget, which is currently in my office that I can maybe assist with. So I end up doing my own way, probably take out from my own pockets, or maybe go round, get a team to look for food parcels from other students probably who have in surplus; so that we can have that food and distribute to those [students in need].

Results also suggest that 35.6% of the students preferred 'other' means of seeking food assistance from outside UKZN (Table 5.6). Although not explicitly stated by these students, the overall statement arising from such a response is that, incidents of students particularly young women, securing financial assistance (for food and subsistence) from elderly wealthy men-blessers¹¹, in exchange for sex, have been reported in South Africa. In a recent South African publication, '*Passport Girls' Are The New 'Blessees' On University Campuses In SA*, (Hunter, 2017) cited an SRC President at UKZN, who elaborated on poverty and food insecurity as a driving force for young women in universities who fall into a form of financially rewarding relationship with 'blessers' in exchange for sex. Similar incidents of food insecurity coping strategies were reported at the University of Venda, where students preferred securing money for food through their 'blessers', to finding a part-time employment to obtain money for subsistence and food. This risk behaviour exposes students to human immunodeficiency virus (HIV), other Sexually Transmitted Infections (STIs) and unwanted pregnancies. Such relationships also put students at risk of neglecting their academic activities in order to attend to their blessers' demands. As reported in the same publication, '*Passport Girls' Are The New 'Blessees' On University Campuses In SA*, Hunter (2017:1) showed that "An issue is the decline of the academic performance of these women. Say the blesser has an event somewhere and as

¹¹ In South African context, blessers are 'sugar daddies', or elderly wealthy men (usually married) who are in temporal relationships with young unmarried women (blesses) where sexual transactions are made in exchange for food or/and a lavish lifestyle (Hunter, 2017).

a 'blessee; they need to appear with them. They miss classes and tests because of these appearances".

A similar question was asked to the academic staff about their opinions/experiences of reported cases of hunger by the students. The findings in Table 5.7 suggest that the staff, as a scaffold to helping food insecure students offer various strategies. As such, 63.8% of them indicated that they would recommend the food insecure students to the UKZN support services whereas 19.1% of them indicated that they would directly offer their assistance to a hungry student, in form of money or food. Some 6.4% of them indicated that they would recommend a part-time job, while another 6.4% of them were undecided about what they would recommend to a student in such a predicament as hunger. About 2.1% of the respondents indicated that they would advise the student on healthy eating habits while another 2.1% of them indicated that they would recommend a hungry student to a nearby Church or religious organisation for food assistance.

Table 5.7: Academics' perceptions and reaction to food insecurity reported cases

Variable/response	(N= 94)	Percentage (%)
UKZN support services	60	63.8
Nearby religious/church organisation	2	2.1
Part-time job	6	6.4
Donate food/money	18	19.1
No answer/don't know	6	6.4
Advise on healthy eating habits	2	2.1

The results suggest that there is an uncoordinated approach to effectively address the problem of food insecurity at UKZN, as evidenced by several informal arrangements that are at the institution to assist food insecure students.

5.8 Students' perceptions about awareness of food insecurity prevalence and interventions

Various questions regarding the food insecurity prevalence among students and interventions were asked to the surveyed students. Results in Table 5.8 show that most of the participants (66.7%) agreed with the assertion that student food insecurity is an issue in the university. Table 5.8 also shows that despite the implementation of the FSP in 2012 at UKZN, three years later (2015) a large proportion of students (90.3%) students had no knowledge about the existence of the programme. As a result, only 2.2% of them were beneficiaries of the programme, with 0.9% of them receiving food hampers while 0.4% of them did not specify the form of assistance they received. In addition, some 0.9% of the students received assistance through the food voucher system that enabled them to redeem meals from the university cafeterias. The surveyed students were also asked about their knowledge of other food security interventions at UKZN. The results indicated that only 10.6% of the students knew about such programmes or arrangements.

Furthermore, the findings presented in Table 5.8 suggest that the majority, 65.5% of the respondents were in favour of reintroducing institutionalised meal plans in the university. This calls for an institutional policy change, to consider institutionalised meal plans or residential catering as an option for students in the university. Another important emerging finding is that

most of the students (72.3%; 77.7%) had no problem with receiving food as a reward/bursary, and as a mere parcel respectively. Some motivational theorists and analysts emphasised the importance of human motivation suggesting that an individual's expectations guide his or her behaviour in ways that would bring them desirable outcomes. Likewise, (Malone, 1981: 335) observed that an activity such as 'reward' is perceived to be intrinsically motivational to an individual if he or she engages in it for its own sake without engaging in any activity to receive an external reward such as status.

Table 5.8: Awareness of food insecurity, and interventions by students and willingness to utilise them

Variable description and response	Frequency (N)	Percentage (%)
Is food insecurity an issue among students?		
Yes	301	66.7
No	150	33.3
Do you know about FSP at UKZN?		
Yes	44	9.7
No	408	90.3
Do you know other FSP at UKZN?		
Yes	48	10.6
No	404	89.4
Are you aware of cafeteria free food?		
Yes	45	10.0
No	403	90.0
Form of assistance received from the FSP?		
Food hamper	4	0.9
Voucher	4	0.9
Other forms of assistance	2	0.4
Would you sign up for residential catering?		
Yes	289	65.5
No	100	22.7
Maybe	52	11.8
If FSP parcels were available, would you collect them?		
Yes	351	77.7
No	61	13.5
Maybe	40	8.8
If food parcels/vouchers were an award or bursary I would be glad.		
Yes	327	72.3
No	80	17.7
Maybe	45	10.0

Notes: FSP=food security programme

Cross-tabulations and Chi-square tests were performed to determine any association between willingness to sign up for residential catering and willingness for food parcels, bursary, as a reward (Table 5.9). Results show that there was an association between the students' willingness to sign up for residential catering and their willingness to receive food parcels or bursary, in form of a reward.

Table 5.9: The association between willingness for residential catering and food parcels, bursary, as a reward

Variable	%	Variable	%	χ^2 Sig level
If given food parcels, bursary, reward, I would be glad		I would sign up for residential catering		
	72.3	Yes	65.5	P value 0.000***
Yes	17.7	No	22.7	
No	10.0	Maybe	11.8	
Maybe				

Notes: *** Significant at 0.001

As evident in the foregoing (Table 5.8), only 9.7% of the respondents were aware of, the UKZN FSP. Therefore, there was a need to determine the students' source of knowledge about the FSP. Cross-tabulations were performed and descriptive statistics are displayed in Table 5.10. The findings showed that whereas the FSP was implemented through the student-counselling centre, paradoxically less than 1% of the respondents came to know about the FSP through the student-counselling office and other support staff. By contrast, of the respondents who knew about the FSP, most of them 4% (n=18) came to know about the programme through their fellow students and student notices (3.75%) respectively. Results also show that their lecturers informed some 0.5% of them.

Table 5.10: Students' source of knowledge about FSP

Response	Gender					Total (%)
	Male		Female			
	(n= 452)	(n)	(%)	(n)		
I don't know about the programme	408	192	88.5	216	92.0	90.25
Student notices	17	8	3.7	9	3.8	3.75
Student Counsellor	2	1	0.5	1	0.4	0.45
Support staff	1	1	0.5	0	0.0	0.25
Fellow student	18	10	4.5	8	3.4	3.95
Lecturer	1	1	0.5	0	0.0	0.25
SRC	5	4	1.8	1	0.4	1.1

In view of the above (Table 5.10), similar questions were asked to the academics regarding their perceptions of student food insecurity prevalence, knowledge about the FSP, and their experience with students who directly reported to them about hunger. The results in Table 5.11 show that while most of the respondents (60.6%) acknowledged that food insecurity was an issue at UKZN, a large proportion of them (71.3%) did not know the prevalence of the phenomenon in the university. In addition, about 38% of the respondents indicated that they had cases of hunger directly to them by students, of whom 61.1% indicated that 'sometimes' they received cases of student hunger, while 22.2% of them indicated that they 'often' had such cases of students hunger. In addition, it appears that only a few academics (33%) were aware of the FSP, of whom 47.1% had referred their students to it. However, the main statement emerging from these results is that, unlike the students who appeared to have negative perceptions of food aid, most of the academics (75.5%) commended the FSP (Table 5.11).

Table 5.11: Academics' perceptions of food insecurity prevalence and FSP awareness

Variable/response	Frequency (N)	Percentage (%)	College Category P value
Do you have reported cases of hunger cases?			
Yes	36	38.3	0.005**
No	58	61.7	
How often do you have cases of hunger?			
Often	8	22.2	0.332
Sometimes	22	61.1	
Not often	6	16.7	
Are you aware of the level of food insecurity at UKZN?			
Yes	27	28.7	0.016*
No	67	71.3	
Is food insecurity an issue at UKZN?			
Yes	67	60.6	0.303
No	6	6.4	
Maybe	31	33.0	
Awareness about the FSP at UKZN			
Yes	31	33.0	0.288
No	63	67.0	
Do you refer students to the FSP?			
Yes	16	47.1	0.236
No	18	52.9	
Are you aware about other food security interventions?			
Yes	20	21.3	0.543
No	74	78.7	
Should there be programmes for food security at UKZN?			
Yes	71	75.5	0.018*
No	0	0.0	
Maybe	23	24.5	

Note: *, ** P-value <0.05; <0.01 represents statistical significance, respectively

Cross-tabulations and Pearson Chi-Square tests were performed to determine any association between the main variables in Table 5.11 with the college category UKZN. Results show that there was a significant association between the college category and the following reported number of cases; awareness about the student hunger prevalence; and one willingness for food security interventions in the university community. Spearman's correlations were performed to determine any influence of the variable, 'having reported cases of student hunger' and other

variables. Results in Table 5.12 reveal that reported cases of student hunger had an influence on one's perception about the need for food security interventions at the university; one's awareness about the food security programme; and about one's knowledge about the prevalence of student hunger at UKZN. These findings suggest that the staff members who received cases of hunger were more likely to perceive the phenomenon as a problem at UKZN than those who did not receive reported cases of hunger.

Table 5.12: Correlations between reported hunger cases and awareness about food insecurity level and the interventions among academics

Variable	(N=94) Sig. (2-tailed)	Correlation Coefficient
Reported hunger cases	.029	.225*
Awareness about food insecurity level		
Reported hunger cases	.024	-.233*
Is food insecurity an issue at UKZN?		
Reported hunger cases	.005	.285**
Awareness about FSP at UKZN		
Reported hunger cases	.017	-.245*
Need for food security programmes at UKZN		

Note: *, ** Correlation is significant at the 0.05; 0.01 (2-tailed) respectively

Furthermore, the participants were asked to specify other forms of food assistance they were aware of in UKZN community. Descriptive statistics were performed and results displayed in Table 5.13. About 20 respondents were aware about other form of food security interventions of whom 55% were aware of some informal arrangements in their respective departments or schools, while 25%; 15%; and 5% of them knew about charity or religious organisations, church donations, and the UKZN Law clinic, respectively, as avenues of food security interventions. It is evident that various informal arrangements of food assistance served as food

security interventions to the prevailing critical issue of student hunger at South African IHLs such as at UKZN.

Table 5.13: Academics’ knowledge of other food interventions

Variable/response	(n=20)	Percentage (%)
UKZN Law clinic	1	5.0
An informal arrangement at the workplace	11	55.0
Donations from churches	3	15.0
Other religious/charity organisations	5	25.0

In view of the above (Table.13), respondents were asked to indicate their source of knowledge about the forms of food assistance. Descriptive statistics were performed and results are displayed in Table 5.14 Results show that most respondents (45%) came to know about the interventions through their fellow lecturer or at the work forum, whereas about 15% knew about the interventions through UKZN support staff such as ADOs, while some 10% of them came to know about the intervention through UKZN’s student counsellors. Their peers directly informed about 10% of the students and another 10% of them were informed by their religious organisations including church forums located in close proximity to UKZN. Only 5% and another 5% of the surveyed indicated that the UKZN student-notices informed them and the University’s website informed them, respectively.

Table 5.14: Academics' source of knowledge about other food interventions

Response/variable	(n=20)	Percentage (%)
Student notices	1	5.0
Counsellor	2	10.0
Support staff	3	15.0
UKZN website	1	5.0
Fellow lecturer/work forum	9	45.0
Student	2	10.0
church/religious organisation	2	10.0

5.9 Underlining causes of vulnerability to food insecurity among students

In Chapter 4, it was found that many students were vulnerable to food insecurity. Hence, in this chapter, there was a need to understand students' perceptions regarding the causes of food insecurity in the university. The surveyed students were asked about their perceived causes of student food insecurity and were required to write down their responses in the questionnaire. Among the emerging responses, were issues related to poverty and finances, financial risk behaviour and institutional factors as presented in Table 5.15 and expounded below.

5.9.1 Poverty and financial issues

Table 5.15 shows that there were many determinants of student food insecurity. Nearly half of the respondents (48.2%) associated student food insecurity with one's poverty background and high tuition fees. Closely related to this response was the perception of insufficient funding. Therefore, it follows that 46.9% of the respondents indicated that late or insufficient funding caused food insecurity among students. It is worth noting that, these findings are in agreement with the results from Chapter 4, where it appeared that students who relied on NSFAS to access higher education, perceived themselves to be more food insecure than those who were self-sponsored. Chapter 4 (Table 4.4) also revealed that students who relied on NSFAS and bank loans were more vulnerable to food insecurity than students who had other means of funding

their education at the IHL. Politically, most recipients of the financial aid schemes are generally considered poor, as the majority of them come from disadvantaged backgrounds of South Africa. Results from the interviews also suggest that poverty was linked to student food insecurity. From the interviews, one of the Executive Deans for Teaching and Learning stated, “[A] very, very large proportion of our students come from a setting of poverty”.

On the same issue, one SRC officer clearly articulated:

One thing I must put on the page is that the background of students is not the same, all of them. We get students from campuses like Pietermaritzburg, which is highly populated with the students from poor backgrounds. That is the honest truth.

Similar views on financial issues-linked to poverty were expressed by another SRC officer held a view that:

I think I have attended to a number of cases [student hunger]. You find that a student is from poor a community or has a poor background, or from a poor family. Other students you know, they are having bursaries. They are having scholarships but some of the scholarships don't pay in time. So, you find that those students are attending on empty stomachs. They are struggling there at residences, not having food.

The above results are not new because the issue of food insecurity directly or indirectly linked to student poverty has also been reported in some universities around the world. In Canada, an exploratory study by Nugent (2011: 7) at the University of Lethbridge, on food insecurity among tertiary students, found that poverty was a risk factor to student hunger such that the affected students employed various measures to mitigate their food insecurity problems. Nugent (2011: 214) reiterated that the students who lacked the financial means to support themselves became vulnerable to food insecurity such that they turned to food banks to access food. Another study by Hughes *et al.* (2011), among Australian university students, found that food insecurity was significantly prevalent in low-income students especially those who depended on government financial aid. Although the study did not directly describe poverty as a cause of food insecurity among the students, the issue of low income is one of the determinants of poverty. In South African IHLs, poverty-related factors affecting individual/household food security have been reported. A recent study by Van den Berg & Raubenheimer (2015) found that having little money was among the significant predictors of food insecurity among students at the University of the Free State. To complement the findings above, more, recent report by the Statistics South Africa (StatsSA, 2017; Lehohla, 2017: 59)

revealed that individual food insecurity remained prevalent among the poverty-stricken populations in South Africa.

5.9.2 Financial risk behaviour and substance abuse

Results in Table 5.15 also show that 11.6% and 2.2% of the respondents indicated that financial mismanagement and alcohol/drug abuse respectively, were responsible for food insecurity amongst students. The results above complimented the findings from the focus group discussions, whereof the ADOs stated:

Because you find that students who probably get financial assistance from the university spend it in one day. At the end of the month, they will be doing their own things, they are hungry.

The issue of financial mismanagement as a cause for food insecurity among students attending higher education has been reported in several research studies around the world. Research by, Mendes *et al.* (2012) in Brazil revealed that students tended to spend their funds on luxurious items rather than on valuable items due to lack of financial experience and management skills. A related study by Lyons (2007) in the United States of America revealed that financial mismanagement by students increased the likelihood of compromising their physical and mental health and consequently their academic performance. In Nigeria, research by Ebenuwa-Okoh (2010), which examined the influence of financial status, gender and age on undergraduate students' academic performance at Delta State University, found that students who had financial means tended to spend money on luxuries rather than educational items such as books which could enhance academic performance. The study recommended a practical solution such as counselling to improve student academic performance. Similar results have been reported in South Africa. Research by Letseka (2007) reported that a large proportion of undergraduate students overspent on luxuries such as designer clothes, liquor and parties. The reported research above underscores that students who mismanage their finances do not prioritise valuable items such as nutritious food on their budget. As a result, they are vulnerable to food insecurity.

5.9.3 Institutional factors

The students identified institutional factors among the causes of food insecurity. Table 5.15 shows that 7.9% of the respondents indicated that food insecurity was triggered by lack of

nutrition knowledge among students. However, students should learn to plan better for their necessities such as groceries during the semester. Results also suggest that 9.2% of the respondents complained that the long distance between the IHL and the supermarkets contributed to their reluctance to buying nutritional food and preparing it. The overall statement arising from the findings is that, while long distance is certainly not the case as most supermarkets are in close proximity to UKZN campuses, these supermarkets usually sell expensive nutritious food items, leaving the students with the option of compromising their diet quality (by purchasing less nutritious food) or to travel long distance to purchase affordable food.

In addition, 5.7% of the respondents indicated that food insecurity was caused by lack of a deliberate policy for institutionalised catering. Furthermore, 2.2% of them complained about food theft at their residences. This may be the case for students who have communal kitchens at UKZN residences, because such an environment is prone to theft. These results also suggest that in the absence of institutionalised meal plans, students are left with the option of providing their own meals. It is, therefore, possible to argue that, even when financial aid is given to such students, they are likely to remain vulnerable to food insecurity due to institutional factors such as lack of residential dining halls where students could have a stable supply of ‘ready to eat’ food during the semester. As mentioned earlier, some of the students are reluctant to walk to the supermarkets to purchase their preferred meals. This situation is worsened by the lack of prioritisation of adequate nutritious meals on the students’ food budget, due to ignorance. In addition, some students are reluctant to cook their meals such that they prefer to buy energy-dense food, which poses a risk to their health. On this issue, similar observations emerged from the focus group discussions, where an ADO stated:

Especially during the examination time, a lot of students are staying hungry, or just surviving on coke or chips so that they have a high content of sugar in their body and they don't fall asleep. So, they do not have time to actually go and buy the food and cook it and eat it. So, they would rather buy either a two litre of any soft drink and they will eat biscuits and coke, or chips and coke or something like that.

In summary, results show that there are various causes of food insecurity; hence, no single or specific factor is responsible for the phenomenon amongst the students. Inadequate/late

funding and poverty were identified as some of the major factors affecting food security among university students. Table 5.15 displays the results.

Table 5.15: Students’ perceptions about causes of food insecurity

Variable description	Response			
	Yes		No	
	(n)	(%)	(n)	(%)
Insufficient/late funding	214	46.9	242	53.8
Poverty background/high fees	220	48.2	236	51.8
High food prices	63	13.8	63	86.2
Financial mismanagement	53	11.6	403	88.4
Distance/laziness to cook	42	9.2	414	90.8
Poor nutrition knowledge	36	7.9	420	92.1
Alcohol/substance abuse	10	2.2	446	97.8
Lack of food policy/residential catering	36	5.7	430	94.3
Food theft	10	2.2	446	97.8

5.10 Stakeholders’ perceptions: Addressing students’ food insecurity

Academics were asked to state their views and opinions on addressing student hunger in the University. Descriptive statistics were performed and the result is displayed in Table 5.16. The findings indicate that 20% recommended programme awareness and addressing the issue of the stigma attached to poverty and food aid amongst students. This was followed by 11.7% who recommended ‘food banks’ or ‘soup kitchens’ and 11.7% who recommended ‘residential catering’ or ‘feeding schemes’ respectively. Meanwhile, whereas 7.4% of the academics suggested more education and research on the issue to stop student hunger 5.3% of them recommended part-time jobs. Such a view was based on the notion that lack of financial

resources leads to poverty and hunger such that when students are employed in the University, they can generate some income for groceries.

Table 5.16: Food security interventions: Academics’ perceptions

Responses	(N=94)	Percentage (%)
Programme awareness/address stigma issue	19	20.2
Food gardens	5	5.3
Food banks/soup kitchens	11	11.7
Collaboration	10	10.6
Adequate funding	13	13.8
Meal vouchers/cafeteria-stores	2	2.1
Residential catering/feeding scheme	11	11.7
Research/education	7	7.4
Part-time jobs	5	5.3
No answer/don’t know	11	11.7

In addition, results emerging from the focus group discussions and interviews (R=respondent) included the following:

R1

We don’t have a choice, but we have to attend to them [students] and assist them. We have to do more door-to-door campaign and to find out who are these students who are poverty stricken.

R2

I think it’s important that we create awareness among students. The University does have a programme which supports students where food insecurity exists. I think apart from that, we gonna make sure that it’s sustainable in the sense that it can’t be for one day or one month or one semester. It’s got to be ongoing and I think they should be a fund created at the Institution and..., I think we need to call upon donors.

R3

This is a difficult one [solution] because either way, it will involve us in getting into the private space of students. But we need staff, we need the private sector, we need government and the Institution itself to come together to combat this problem. We need to know that each sector is giving how much. We should look for a long-term issue, a long-term solution rather than just giving the food and going.

R4

We have cafeterias which are operating here at school [UKZN campuses], we have landlords who are being paid money, big money for student residences. If the University can ask these landlords to give some food to some students who are residing at their residences including these cafeterias which are operating here [UKZN Campuses] because students are buying here. If they can assist, that problem can be solved.

In summary, all the suggestions presented in this section of the chapter, provide a glimpse of how the issue of food insecurity could be addressed. They range from, early identification of the problem amongst students, and using awareness campaigns and about the phenomenon, to using a collective approach (involving the university primary stakeholders and the external stakeholders (including the business community) to mobilise funds to support the FSP in a sustainable way.

5.11 Conclusions and recommendations

The findings suggest that food insecurity is a very complex phenomenon with a wealth of related interpretations as demonstrated by various definitions provided by the participants in the study. It is also concluded that there is minimal awareness of the FSP among UKZN primary stakeholders particularly the targeted beneficiaries (students). The findings and discussions also reflect complex and seemingly contradictory views of food aid and food insecurity amongst students at the Institution, despite the high prevalence of the phenomenon. Furthermore, it emerged that due to the complexity of the phenomenon, various means could be employed to address the issue including more research and the introduction of residential catering as an option to students. The findings also suggest the need for social change to combat stigmatisation associated with food insecurity, food aid and academic underperformance in South African IHLs. Improved institutional strategies, such as counselling and awareness campaigns for food security programmes, are needed to combat negative perceptions attached food aid among students attending higher education.

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CHAPTER 6: AN EVALUATION OF FOOD SECURITY INTERVENTIONS IN INSTITUTIONS OF HIGHER LEARNING: A PERSPECTIVE OF FOOD SECURITY PROGRAMME IMPLEMENTERS, UKZN, SOUTH AFRICA

6.1 Abstract

In post-apartheid South Africa, food insecurity is a rising phenomenon among students attending universities. The country's economic prospects are affected by low graduation rates and entry into the labour market caused by poverty-related factors such as high food insecurity prevalence among university students. The University of KwaZulu-Natal (UKZN) an institution with more than 50% of students from historically disadvantaged backgrounds implemented the food security programme (FSP) in 2012, to address the problem. The form of assistance includes meal vouchers and food hampers to students in need. Since the programme inception in 2012, there has been no documented analytical and interpretation dimension of food insecurity at UKZN, thus the significance and contextual effects of the food insecurity is not yet understood. A qualitative research using an explorative research design generated data from key informants using face-to-face interviews. A purposive sample as a case study systematically included the middle and senior managers of the FSP at UKZN's five campuses to gain insight of key informants' experiences and perceptions in managing the food security interventions in universities. The study findings revealed that the FSP is not formalised and it operates as a self-help initiative linked to a social responsibility activity of the UKZN. 'Underestimation' and 'denial' resulted in the lack of prioritisation and mainstreaming of the programme. Ultimately, there is lack of sustainable funding, personnel, and infrastructure. As perceived from the student views, there is a social stigma associated with negative attitude and beliefs about food aid. Thus, the FSP programme has to ensure that it overcomes such negative connotations.

Keywords: educational outcomes, food-aid perceptions, food insecurity, programme management, university students.

6.1 Introduction

In human societies or communities, social interventions such as programmes or projects, are undertaken to improve social conditions such as poverty or nutritional problems (Rossi, *et al.*, 1999: 3). In this context, a programme is a set of activities designed to collect, analyse, interpret and communicate information about the effectiveness of social interventions. Therefore, social interventions such as food aid programmes are aimed at alleviating food poverty and nutritional problems, thereby improving individuals' wellbeing. Evaluation uses social procedures to investigate the effectiveness of social intervention programmes. Often, food aid programmes affect more people than it is commonly appreciated. For instance, in wealthy countries such as the United States of America (USA), millions of people are beneficiaries of food assistance programmes such as school lunch programmes, and special supplemental programmes for women and children (Feeding America, 2017). Therefore, it follows that food security interventions are designed to respond to food insecurity threats. While food insecurity exists whenever food security is absent, limited or uncertain (Campbell, 1991), interventions such as community food aid programmes are designed to increase an individual's access to food; ultimately it improves the beneficiaries' physical wellbeing (Barrett, 2002) and dignity (Crawford *et al.*, 2010).

In research, programme evaluation is classified under social science research methods; hence, it requires studying the social intervention in its natural, political and organisational circumstances to draw judgements about the need for the intervention and the design implementation, impact and efficiency of the programme that can address that need (Rossi *et al.*, 1999: 3). Rossi *et al.* (1999) added that individual evaluation research could make powerful valid findings of the effectiveness of social programmes and those with responsibilities or interests related to their creation, continuation or improvement of the programme. Based on valid and reliable data collection and analysis, evaluation produces timely, relevant, credible and objective findings and conclusions for a programme performance (Treasury Board of Canada, 1998). For Metz (2007), evaluation is simply another form of programme monitoring. Metz (2007) added that while programme evaluation is often perceived to be complicated and costly, evaluators serve as tools for programme improvement. Further, evaluation enables programme managers to answer basic questions about the programme's effectiveness, including; whether the participants are benefiting from the programme services, whether the

recruitment strategies are working or not, whether the staff have the necessary skills and training to deliver the services, whether the participants (programme stakeholders) are satisfied with the programme. In the same vein, Rossi *et al.* (1999: 4) held a view that, often, evaluators use social research methods to study, appraise and help improve social programmes in all their vital aspects, including the diagnosis of social problems they address, their conceptualisation and design, their implementation and administration, their outcomes and their efficiency. In other words, programme evaluation facilitates answers to basic questions about programmes' effectiveness, while evaluation data could be used to improve programme services. Ultimately, evaluation can substantiate programme operations and the organisation's strategic plan.

In this study, the researcher established that the FSP has not been evaluated since its implementation in 2012. Therefore, one of the principal aims of this study is to diagnose the operations of the FSP at UKZN, and to identify, the challenges of the programme, relating to student food insecurity issues. In the previous Chapter (5), the results showed that a significant proportion of the UKZN stakeholders, particularly the students, academic staff and some support staff, expressed their ignorance about the existence of, or the operations of the FSP at the Institution. These results aided the researcher to inquire among other things, about the rationale behind the establishment of the FSP, the programme implementation and publicity issues and taking into consideration the form of assistance given to the beneficiary; as well as issues regarding the implementation challenges and how those challenges are being managed. The study also aims to explore the effect, if any, of the programme on the beneficiary's wellbeing particularly in reference to their academic performance.

6.2 Study Methods

The explorative inquiry case study was based on two fundamental aspects: 1) exploring the implementers' interpretative perspective of student hunger and its consequences; 2) identify all successes and challenges affecting the implementation of a FSP. An exploratory research is appropriate when little is known about the phenomenon under study (Yin, 1994). Therefore, it follows an exploratory research nurtures the diagnosis of the phenomenon and screening of alternatives to discover new ideas. Using a qualitative approach in exploratory research study enables respondents (study participants) to project their underlying motivations, feelings,

beliefs or attitudes by interpreting the behaviour of others rather than themselves. In addition, exploratory research extricates possible avenues for reaching decision makers' objectives.

6.2.1 Sampling technique

A purposive sample of six, stakeholders who were part of the UKZN management support services, four of who work under the University College Office (College of Humanities, College of Law and Management Studies, College of Health Sciences, and College of Agriculture, Engineering and Science); two who are senior managers for student support programmes were the key informants in this study. In this study, each interview took approximately 25 minutes.

Data collection tools

Face-to-face in-depth interviews were held with various senior staff members of the UKZN-FSP between September and November 2016. All the interviews were conducted in natural settings¹², and the respondents were interviewed separately. Most of the questions were open-ended. The researcher sought to understand the rationale behind the formation of the programme, how the programme was being implemented and whether it was meeting its aims and objectives. Questions pertaining to the understanding of food security and insecurity by the key informants were asked. The researcher also sought to understand the respondents' perceptions of the relationship between food security and student academic performance. Some of the questions pertaining to causes of student hunger, the formation of the programme as an intervention, the implementation process, the issues affecting the programme were essential to the study.

Data analysis

All the interviews were audio recorded, and after the interviews were conducted, they were transcribed. All emerging and recurring responses were identified as 'issues' or entities.

¹² The researcher used a naturalistic approach to study the subject matter. The phenomenon was studied as experienced by the respondents in their natural environment. The interviews were conducted without manipulating the environment. Interviews conducted in natural settings are prone to disturbances such as background noises and disruptions of participants (Denzin & Lincoln, 1994).

Subsequently, a record of identified issues was prepared in a notepad. Using Pajek, a computer software package as a data analysis tool, the issues would be represented in the network through vertices or nodes by homophily and homogeneity. The size, composition and all network structures were obtained by content and thematic analysis. The analysis of composition included homogeneity of the 'issues' relating to a particular question that was asked during the interviews. The analysis of the 'issue structure' would include the strength of the ties among the 'issues'.

After the interviews with all the participants, responses were transcribed and later categorised into 'issues' to help structure and analyse the acquired information into networks¹³ of themes. In a given work environment, networks are important especially where 'interventions' can be targeted (Bezuidenhout *et al.*, 2012) and in facilitating system visualisation as well as assessing the structure of a 'system' in terms of its worth (Cross *et al.*, 2002). Therefore, network analysis provides an appropriate tool for systematically assessing a social network and identifying key points within a given network where interventions such as social programmes can be targeted. Within this context, the FSP is a treatment intervention within the UKZN work system. Bezuidenhout *et al.* (2012: 1841) reiterated that "network analyses are in particular powerful when rapid learning needs to occur in systems where there is limited knowledge". As a result, researchers use network analyses to represent complex systems, and various advanced graph theory techniques are available to support such studies. For instance, research disciplines like project management and ecology are known to exhibit several complex characteristics, such that they can be perceived as complex systems (Spector *et al.*, 2001). Therefore, complex systems can be represented as a set of interconnected entities or networks or graphs.

In this context, it is argued that programme management of the UKZN FSP, can be viewed as a complex system as it involves several players and characteristics such as linear and nonlinear responses, emergency responses, referrals, counselling, behaviour therapy, internal feedback and decision-making. Researchers such as (Rosenhead & Mingers, 2001) echoed that in a

¹³ In this study, a network is a group of vertices representing the interviewees' emerging responses to questions regarding student food insecurity and the FSP. Each vertex label represents a particular response, an entity, or an 'issue'. A theme network represents an energised map of loosely or interconnected 'issues' or entities. These are visualised by coloured boundaries and are projected onto a map or figure. Each coloured map represents a theme.

complex system, it is often more cumbersome to define a problem than to generate a solution. Therefore, network analyses could offer a better alternative to define a problem and to anticipate an effective solution. Another author, Sterman (2000) noted that researchers tend to misperceive feedback relationships and have problems in identifying dynamic causal behaviour even when they have underlying structural relationships within the system. Within this context, the UKZN student-FSP managers particularly student counsellors often engage with behaviour complexity when conducting their work.

An explorative social network analysis approach using Pajek programme is suitable for integrating theory and application because it fosters information flow configurations (Mueller *et al.*, 2007). Pajek programme provides a feasible way of obtaining network information from a complex system (Djomba *et al.*, 2016). According to the researcher's knowledge, the Pajek programme is appropriate for behavioural studies as it facilitates the process of problem identification and a comprehensive view of the complex system of issues regarding food insecurity, and the interactions amongst the different components of the issues raised. In some previous research, (Mueller *et al.*, 2007; Lam *et al.*, 2008; Bezuidenhout *et al.*, 2012) theme networks were found to be appropriate for the demonstration of the analysis at this stage of research.

6.2.2 Theme network development

In-depth key informant interviews with the FSP staff members were carried out at UKZN's four colleges, in KwaZulu-Natal province of South Africa. These key informants were of diverse portfolios including the programme coordinator, the programme administrator, and the heads of student counselling from each college. During the interviews, participants were asked to give their responses according to their perceptions and experiences regarding the issue of student food insecurity. After the interviews, all the information required was synthesised into 'issues' that seemed to dominate their perceptions on the subject matter.

The connectivity between these issues was considered and constructed into a network using Pajek. For instance, under the theme, causes of food insecurity, the vertex representing 'poverty' has a direct connection with the vertex 'lack of funding' but not with 'distance from supermarkets'. Thus, each network was represented in Pajek and was energised using the

Kamada-Kawai (1989) energy transformation, a process which positions vertices based on their connectivity and will position related vertices into the local proximity of each other (Bezuidenhout *et al.*, 2012). Bezuidenhout *et al.* (2012) contend that the Kamada-Kawai (1989) algorithm method has been used successfully in many studies including ecology and genetics. The energy transformation process also facilitates clearer visual interpretations of the energised networks. Subsequently, Freeman's (1977) technique of centrality, based on betweenness, was combined with Pajek to determine the magnitude of vertexes in a network. The betweenness centrality measures a large number of paths that pass through each vertex, such that the larger the vertex, the greater the betweenness of centrality.

As a result, all interview questions and responses were grouped according to issues which would be grouped into networks. This enabled the researcher to develop five different networks, four of which had issues relating to perceptions about student food insecurity and awareness, and one major network which had specific issues relating to the FSP. These networks helped to simplify and understand complexities in food insecurity perceptions at UKZN and to identify possible areas of improving the intervention which may be the case in other IHLs facing similar challenges. Each overall domain system network had a more detailed theme network.

Study limitations

Some possible limitations to this research should be considered. Initially, the researcher had attempted to sample (included) the beneficiaries of the programme (students currently on the programme), however, due to some ethical concerns, based primarily on confidentiality of the food insecure students as a beneficiary, and the manner in which the FSP had been implemented, (through the student counselling office), it was not possible for the researcher to interact directly with the beneficiaries to get their views and experiences regarding the FSP. Hence, there could have been a risk of biased information from the key informants because the beneficiaries of the programme were not interviewed at this stage of the research. Some of their views were represented by the counselling staff as respondents. However, the previous Chapters (4 and 5) show that some of the students who were currently, or had benefited from the FSP participated in the survey and some of their views on the subject were presented in the survey. For example, Chapter 5 (methodology section) shows that some executive members of

the student governing body (SRC), were interviewed during the study and they presented their views based on their experiences and the experiences of the students in need.

6.3 Results and discussion

The results of this study were presented using the theme networks with aid of the Pajek's Kamada-Kawai programme which takes into account the vertex connectivity and positions of all vertexes in close proximity to each other. The Kamada-Kawai algorithm energy transformation (1989) software grouped a number of related vertexes together and projected them in the network. These are depicted by coloured backgrounds, hence two- to -four of such groupings occurred in each network diagram or theme map. In this study, the two broader themes were identified as follows:

THEME (1): Interpretation and perceived meaning of food security: These included the stakeholder's perceived definition of food security or insecurity, their perceived causes of student hunger, their knowledge of the prevalence of food insecurity at the Institution, their perceptions about the relationship between food security or insecurity and academic performance of the students. Hence, each of these themes was an independent network of related issues that are subsequently presented in diagram format or map.

THEME (2): Management of the Food security programme: An explorative evaluation of the FSP as an intervention programme, highlights the strength and the most critical challenges regarding the management of student hunger at UKZN. The network theme map also enabled the researcher to identify alternative solutions to the problem. The information gathered during the evaluation study was based on exploratory of the student-FSP key stakeholders' experiences and perceptions about the FSP are detailed in section 6.4 of this study.

As highlighted in the foregoing, all the theme maps, depict the harmonised information gathered during the interviews as projected in Figures 6.1, 6.2, 6.3, 6.4, and 6.6. The nodes or vertices in larger sizes of each theme map indicate a high betweenness of centrality due to their connections with several other issues. The red dots are an indication of the main research focus. For example, in Figure 6.1 the total number of 'issues' related to the definition of food security or insecurity was 27 of which issues like 'food poverty', 'socio-economic challenges', and 'scientific and political term' are among the main research focus. In a network, any triangular connectivity (in yellow nodes) depicts a notion of strong ties among issues that can be easily operationalised; they depict a causal-effect relationship of an issue (Batagelj & Mrvar, 2004). The big black arrows reflect the actual positioning of the main issue projected in a network.

6.3.1 Perceived meaning of student food (in)security

The respondents [R] were asked to present their views on their understanding of food insecurity. The question specifically stated, “*What is your understanding of food insecurity?*” A number of interpretations of student food insecurity were provided. It should be acknowledged that although the question was specifically looking at food insecurity, some respondents used the concept interchangeably (food security and insecurity). Subsequently, three themes derived from all issues stated representing the respondents' perceived understanding of food insecurity or insecurity. These responses were broadly categorised as food insecurity [FI] issues, political issues and human rights issues as projected in Figure 6.1.

An example of the respondent's view-R4 was, “*I mean there's plenty of food available but students are not able to purchase it because of lack of funding and therefore, they go hungry. It's a problem that we face and it is directly related to poverty*”. The above response concurs with the national reports on food security, which clearly depicts food availability as not a problem in South Africa; a country which produces enough food for local consumption and exports some of its surplus food hence, at the macro level, South Africa is food secure (Devereux & Waidler, 2017). However, recent studies have reported that reality is that food insecurity remains a significant challenge at individual level mainly due to lack of food access which results from unaffordability triggered by household poverty (StatsSA, 2014).

It is argued that food insecurity is defined through inadequate economic power and support, vulnerability and poverty related to ‘socio-economic challenges’ as projected in Figure 6.1. As stated by Gwacela (2013) food insecurity in IHLs has directly linked family economic burdens, as a result, many students from poor households become food insecure as they are unlikely to afford to buy adequate nutritious food due to high food prices. Evidence from the UKZN records (UKZN, 2017:1), shows that the majority (60%) of the UKZN students are mostly undergraduates and require financial support to access higher education; an indication that these students are coming from poor households. Some of the students who receive the financial support such as NSFAS are inadequately funded hence, they become vulnerable to food insecurity while undertaking their studies. Similar views to R4 were also expressed by R2 who added the nutritional aspect to the definition by stating, “*It is a case of being without access to nutritious, healthy food, in this case for students*”. This response shows that food insecurity is not limited to lack of food access (economic power and physical availability or systems) but it includes, ‘unmet food requirements’ and ‘inadequate dietary food intake’. The following perspective viewed the concept from the political frame of the ‘right to food’, which is a constitutional right. In South Africa for an example, government's obligation to the right to food is enshrined in the Section 27 of the National Constitution (Republic of South Africa, 1996) which, stipulates that ‘everyone has the right to have access to sufficient food and water’. An example drawn from such a perspective was expressed by R1:

It's [food insecurity] understood as a scientific and politically correct term which speaks to student hunger and the result; the baggage around the issues resulting in student hunger that they cannot sustain themselves in terms of basic need and food being a basic need.

From the above perspective, without food, it is difficult for students to learn at school and get an education, hence, the right to food applies to all citizens including students attending higher education. Food as a basic need also relates to individuals, in this context, the students should have sufficient means or resources to feed themselves while undertaking their studies at IHLs. NSFAS is one of the systems that have been employed by the South African government as means to support students who are from disadvantaged economic backgrounds. However, as mentioned by Gwacela *et al.* (2013) often, the breakdown distribution of the money does not

adequately cover the food security component. Even so, most often the money meant for the student is usually shared with the family members because students send remittances home.

Figure 6.1 also shows that food security as basic necessity relates to the issue of human rights. As such, the absence of such human rights could result in unmet food requirements such as affordability and stability (World Food Programme [WFP], 2009) to maintain an active daily life. The theme map outlining a complex network of perceived understanding of student food insecurity by the respondents is outlined in Figure 6.1.

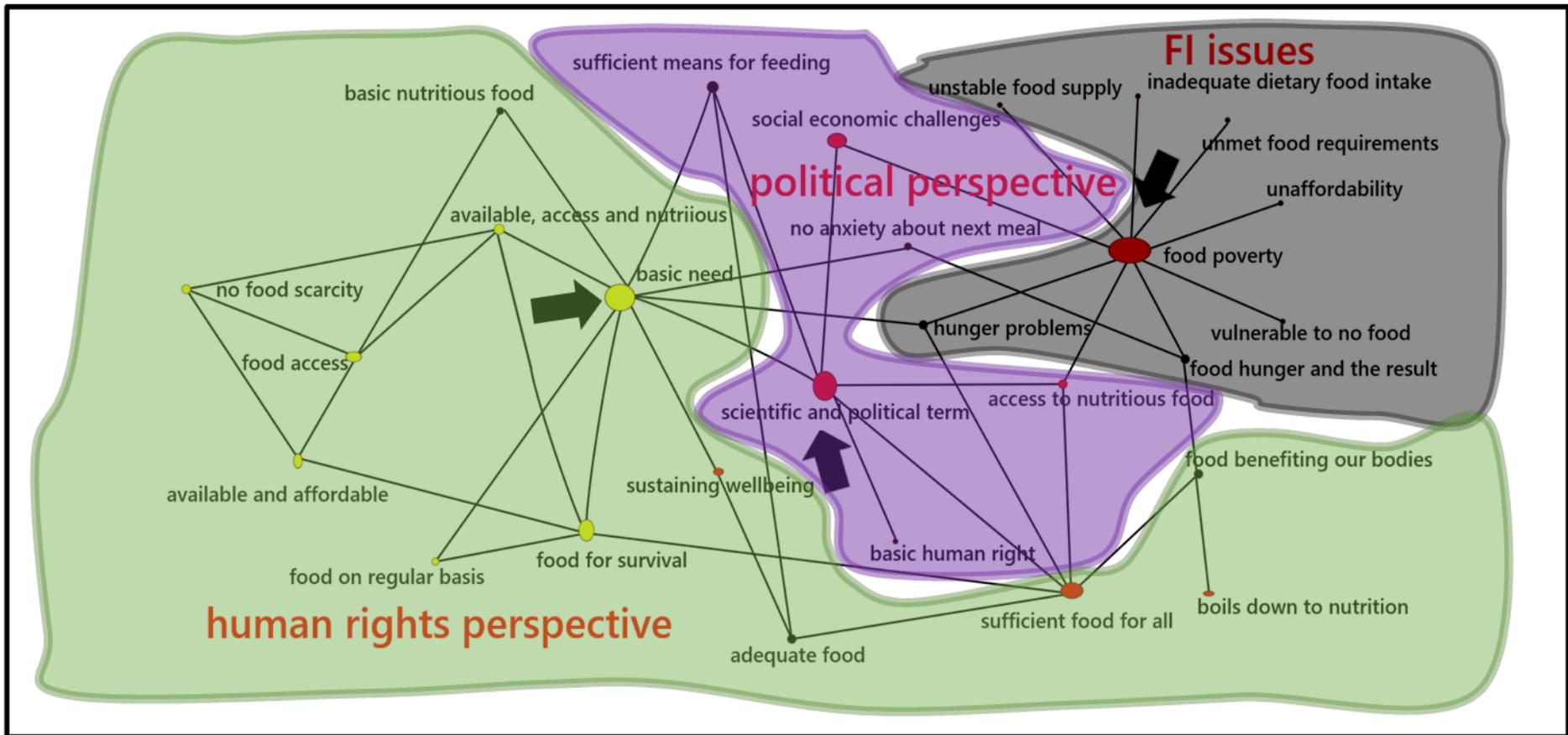


Figure 6.1: Perceived definitions of student food insecurity-theme map

6.3.2 Causes of student food insecurity

In Chapter 4 of this research dissertation, it was revealed that at least 53% of the students at UKZN were found to be vulnerable to food insecurity. Food insecurity was caused by several factors including socio-economic issues. Given the high prevalence of food insecurity among university students (Chapter 4), it was important for the researcher to get an understanding of the determinants of student hunger from the perspective of student-FSP stakeholders. Results from the interviews show that student-food insecurity is caused by factors that mainly relate to the broader context of the phenomenon. Subsequently, four main themes relating to causes of student food poverty were identified and drawn into a theme map projected in Figure 6.2. The main themes were; economic and political issues; Institutional issues and student financial risk behaviour-issues. All the issues were drawn into a theme map of a network projecting the respondents' views on the question in discussion. The question asked of the respondents was, *“What do you think are the causes of food insecurity at tertiary institutions?”*

Figure 6.2 shows that food poverty was the main cause of food insecurity among students, as it has several vertices directly and indirectly connected to it. Issues relating to poverty and student hunger include lack of funding, late funding and little funding. It is argued that for students who depend on financial aid (NSFAS), late funding can trigger food poverty as students who are from historically disadvantaged groups, especially first years, are likely to lack financial means to sustain their educational expenses which include groceries. For example, the first time successful applicants only receive their first payment in April, while the academic year starts in early February (SAILI, 2015). In this case, these students would have no stipend for meals for several weeks. From this perspective, food poverty is both an economic and a political factor that negatively affects students' food security status.

Owing to the previously racialised governance system of the Apartheid regime, being historically disadvantaged is, therefore, a socio-economic and political factor in post-1994 South Africa. Another political issue which directly relates to food poverty, and being historically disadvantaged in South Africa, is the issue of the student's school quintile background. Students, mostly from low quintile schools are from resource-poor communities and are thus likely to be food insecure due to poverty.

One interviewee, R4 stated:

I think it's [food insecurity] really related to poverty. Its related to the fact that many students come from poor households so they are disadvantaged, a lot of them are supported by their grannies [grand parents] or they are supported by people who are living on grants, mostly child grants, pension grants and so on.

The above statement suggests that student food insecurity mainly emanates from poverty backgrounds which many students at UKZN come from. While it is generally expected that students on financial aid would be food secure, the opposite is the reality. The findings (Figure 6.2) showed that students who are on government financial aid and come from very low-income households are prone to misappropriating their financial aid to supplement their family budget, as a result, they remain with little to no finances to sustain their food budgets during the semester.

Figure 6.2 also shows that some food insecure students also come from child-headed households. Wherein some of these students head their households, the financial obligation to sustain their family livelihood falls on their shoulders. As a result, they depend on the financial aid to maintain their families. Some previous studies by Munrol *et al.* (2013); Letseka & Maile (2008) also show that students who depend on financial aid such as NSFAS are vulnerable to food insecurity because the financial aid is inadequate to meet other needs such as food.

Some respondents-R6 added that student hunger was not only caused by poverty or lack of funding but because most students tended to spend their money on luxurious items other than on valuable items such as food. Commenting on the issue of student financial risk behaviour, R6 said:

Largely it is related to socio-economic factors. Well, its also poverty, the refugee students [of foreign nationalities/refugees] don't have [specific citizenship] identity so they cannot access funding. And I know that there was a big number of students who mismanaged their funds, who splashed it on themselves, who bought branded outfits and cellphones and clothes and will send money home. And we are caught in this political understanding of 'whose money is that'. So really we are in a dilemma now about how to effectively manage the money [financial aid] to ensure the money for food because that money is linked to food as well.

Respondent R5 expressed similar sentiments as R6's views on students' financial risk behaviour and stated, "*If the government is giving you money to study and the contract is with you and the government, we [UKZN] merely administer it, it's your[student] money*".

The views presented above show that there is an absence of financial accountability by government to monitor how the financial aid is utilised by the students. As a result, students have the potential to abuse their financial aid by diverting some of the money, particularly the stipend to luxurious items other than nutritious food and educational items such as textbooks and stationery.

Figure 6.2 also shows that to some extent, student hunger was caused by institutional factors. These results concurred with the findings in Chapter 5, section 5.9.3 of this dissertation, where students complained about lack of institutionalised meal plans or residential catering for them at UKZN. In the an absence of institutionalised meal plans, students are left with the option of purchasing their own food items from nearby supermarkets. However, most supermarkets in close proximity to the UKZN sell expensive nutritious food, resulting in poorer students to cover a long distance to purchase affordable groceries. Ultimately, students who lack food budgeting skills are not likely to purchase adequate nutritious meals or have enough time to prepare it. This phenomenon affects most of those who are the first generation of attending higher education and lack support network as students.

R1 stated:

They did away with residential catering services, they are trying to support the diverse eating needs of our cultures. In light of that, we have done away with catering but now the students are hungry. The students have got kitchens in their little passages. You must have pots and pans, you must know how to cook, and you must cook a nutritious meal. So, students also want fast foods. They don't want to cook, they don't want to clean up. You are adding further responsibility.

R4 shared similar sentiments related to residential catering and stated, "*When I was at the university, there was catering in the university. There was no hungry student then*". The above statement denotes that the absence of institutionalised catering at UKZN is one of the determinants of student food insecurity. The statement also reflects a view that in a culturally diverse community such a UKZN, residential/ institutionalised catering could be met with negative beliefs and cultural issues that can affect its operation. Figure 6.2 summarises issues regarding the causes of food insecurity. However, similar to the findings presented above, some

studies have shown that students who prepare their own food are likely to be food insecure compared to those whose meals are prepared by others such as their families (Van den Berg & Raubenheimer, 2015; Hughes *et al.*, 2011). These students were insecure largely because of their lack of food budgeting skills and cooking skills.

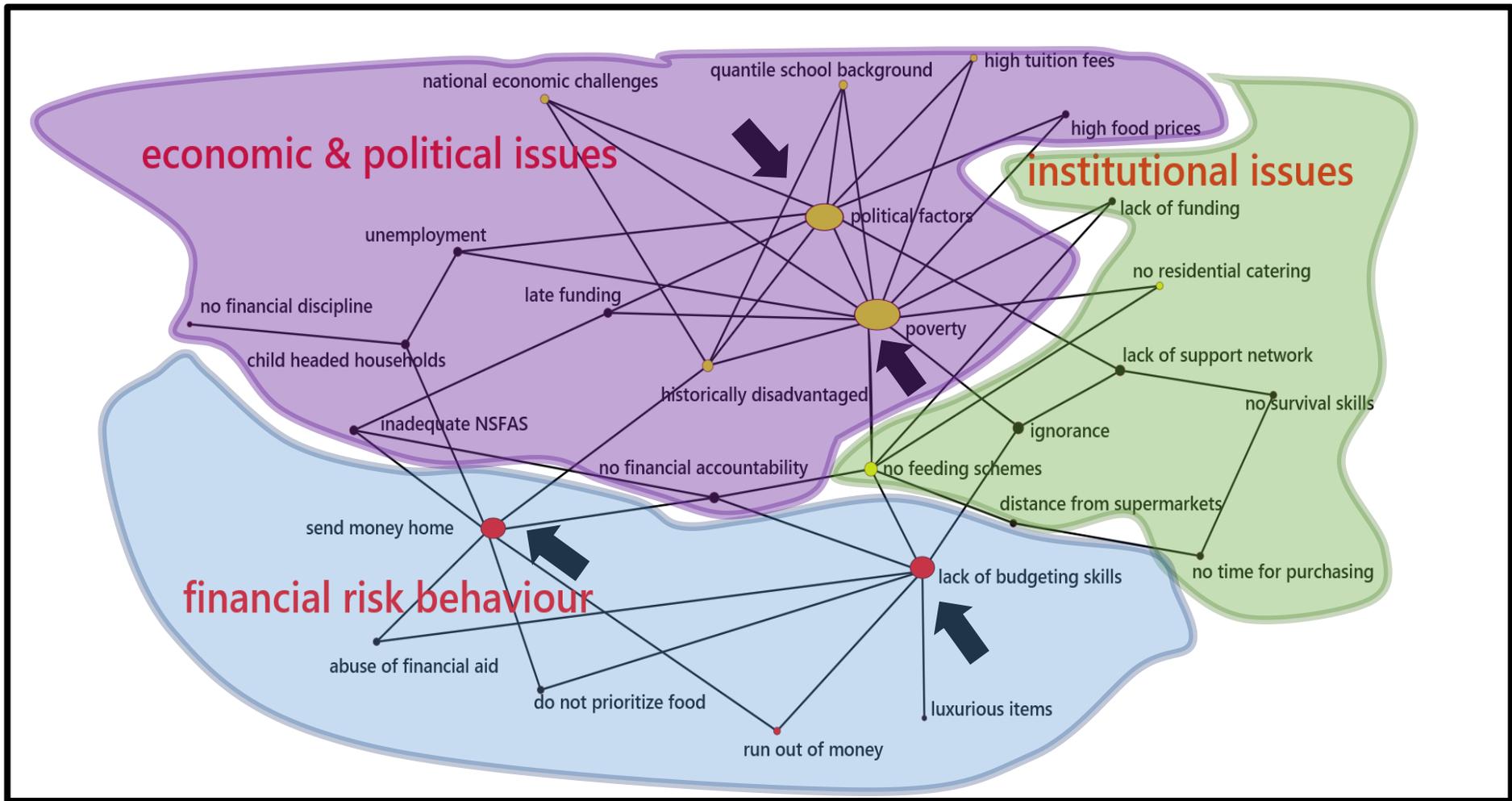


Figure 6.2: Perceived causes of food insecurity-theme map

6.3.3 Awareness and perceptions of the food insecurity prevalence

To determine the operationalisation of food security interventions at UKZN, respondents were asked to present their views or the understanding of the food insecurity prevalence at the IHL. Figure 6.3 depicts a network of issues relating to the respondents' knowledge and perceptions regarding the extent of student food insecurity at the Institution. The questions related to this theme were, "Do you think that food insecurity is an issue at UKZN? And give your reasons?". The subsequent question was, "What is the prevalence or the extent of food insecurity among students in the university?". The theme map (Figure 6.3) depicts that while the respondents acknowledged the existence of food insecurity among students in the university community, they could not establish the prevalence of the phenomenon at the Institution as it had very little empirical data on the subject matter. One response was provided by R5 who stated:

A lot of our students come from quintile 1 and 2 schools [poor schools] and when they get to the university, they get very little support, most of them send their money home other than using it for food on campus, so I definitely think, it is an issue for UKZN.

Although R5 could not determine the prevalence of the phenomenon, the respondent was able to establish that food insecurity was an issue at the Institution due to a large number of students who came from poverty backgrounds.

In addition, a more explicit view was presented by R1 who felt that the prevalence of student food insecurity could not be established because the issue was not a priority in the country and at the institution:

Yes, it is an issue nationally, it is an issue at UKZN but the extent or prevalence will never truly be known because to my knowledge, it is not a priority matter on the agenda of higher education institutions.

However, the researcher established that the prevalence could not be established because the Institution had very little empirical data on the subject matter. Figure 6.3 also shows that at the institutional level, the unknown extent of the food insecurity prevalence is directly related to the issue of stigma, which is attached to food aid. Results also show that most who experience food insecurity do not report the problem partly due to stigma. Some issues that are directly connected to stigma include concealing the problem, feeling shy and being embarrassed about one's food insecurity status or their poor economic status. To some extent, some students would

prefer being hungry than being on the programme. As a result, it was difficult for the respondents to determine the extent of the problem which, is underreported in the university. Further, results in Figure 6.3 show that coming from a rural background is directly connected to being the first generation of students attending higher education, poor quintile school background, and being historically disadvantaged. However, of ultimate importance to this study is that some respondents held a view that due to students changing demographics each year, and the unreported cases of food insecurity (linked to social stigma), it is difficult for the University to estimate the prevalence of food insecurity among students. For instance, commenting on the subject matter, R2 responded, *“I think what you see in the ‘student support’ [UKZN student-FSP] is really a tip of an iceberg because not everyone comes in to present the problem of food insecurity because there’s a lot of shame”*.

Moreover, the majority of the respondents held a view that the unknown prevalence of the student hunger at the IHL was part of the national wide problem because South Africa lacked statistical evidence on the scope of the phenomenon across universities. Here, the argument is that student hunger is part of broader sociological issues or social problems. Such problems include inadequate funding of students in need, a delay in the distribution of financial aid packages to students by the government, and lack of policy orientation to adequately address the emerging problem of hunger amongst students in the country. Some previous studies (Van den Berg & Raubenheimer, 2015) also reported that the scope of food insecurity at South African universities is undocumented because it has not been prioritised by the state. Figure 6.3 summarises a theme network of issues regarding the respondent’s knowledge and perceptions of food insecurity prevalence.

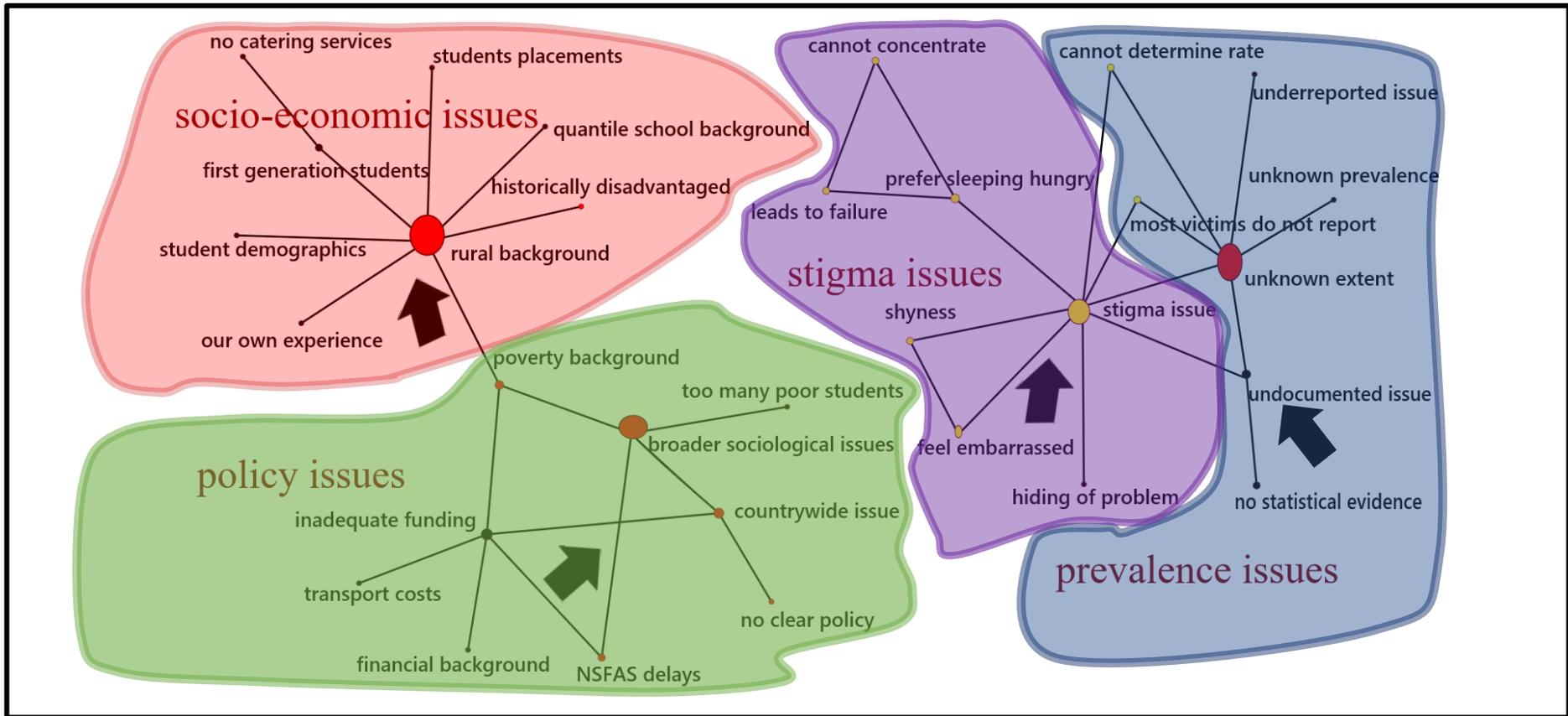


Figure 6.3: Awareness and perceptions about student food insecurity prevalence-theme map

6.3.4 Food security and academic performance

This section of the chapter explored the respondent's perceptions of the relationship between food insecurity and student academic performance as evidenced at UKZN. Thus, a question related to the impact of food security on the academic potential of students was asked during the interviews. All the issues from the respondents' point of view on the subject, were presented in a network. Subsequently, three themes were identified and drawn into a network as projected in Figure 6.4. The main themes included: positive correlation of the said supposition; the negative effect of the food insecurity on the academic performance of students; and the neural responses to the assumption. The purpose was to apply Maslow's Hierarchy of Needs perspective in relation to the experiences and views of the FSP stakeholders at UKZN on the subject. It is acknowledged in this study, that the interviewer's question made no mention of Maslow's Hierarchy of Needs to the respondents. Respondent R3's sentiment on the subject was related to scientific view:

There's a lot of research that supports that, that shows that there's a correlation between academic performance and food insecurity. The bottom line is if you are going to be using your brain and then you need it to think, you need to have the nourishment for that so it's just a very basic form of the premise. If you don't have adequate support in terms of basic needs as well, it's like you are going to have a negative impact on academic performance as well.

The above is an indication of a scientific and psychological perspective of the negative impact of food insecurity and academic performance. Other respondents, R1 and R4 shared similar sentiments to respondent R3's, but gave a more explicit view: R1 stated:

If you look at Maslow's Hierarchy of Needs, the basic needs of a human being are food, clothing, and shelter. To sustain one's wellbeing in life, people need to eat whether there is one or two meals a day, but you need to eat. So to be deprived of a basic need has a repelling effect on one's life whether you're a baby, a young adult or adult. Without food, it has a repel effect in terms of productivity. It [food insecurity] has a real mode of impact on institutions of higher learning. It has an impact if you are a poor person in a community; your experience of life is going to be very different from a person who has food.

R4: "I spoke to you [interviewer] about Maslow's Hierarchy of Needs. If anybody tells me that a hungry person is completely productive and concentrates in a class, I am not sure what they are running into".

Some respondents explained that food insecurity was directly related to the notion of academic performance and wellbeing. R5 stated:

Definitely, academic achievement according to research is related to one's wellbeing and psychological need is one of the basic needs of human systems and if the basic needs are not satisfied and taken care of, no performance will be possible especially at an optimal level to ensure success.

R6 expressed similar views as R5 and stated:

[I]t's a broader issue [food insecurity] but within it, I think it affects academic performance severely because it impacts on concentration, it impacts on the energy levels, it impacts on the inability of the student to function if they are hungry. I don't think it's possible to function well when you are hungry, it's a basic human need.

From the above sentiments, it can be seen that owing to the negative effects of hunger on physical wellbeing on an individual, the majority of the respondents held a view that there is a positive correlation between food insecurity and academic under-performance of students and linked the relationship by specifically referring to Abraham's Maslow's Hierarchy of Needs perspective.

Within this context, Abraham Maslow's Hierarchy of Needs perspective regards food as a very basic physiological need such that without its gratification, it negatively affects other human needs such as self-esteem and self-actualisation that is, a severely food insecure student may struggle to achieve academically and to contribute to self and national development. To shed more light on the perspective, results in Figure 6.4 shows that there is a direct relationship between food insecurity and academic underperformance of student due to the negative effects of hunger on wellbeing. For instance, hunger leads to dizziness, headaches, or illness such that a student may fail to meet the demands of higher education that is, to concentrate in class, to study or to attend to their academic activities hence, compromising his or her educational qualification. Furthermore, a wealth of empirical research (Belachew *et al.*, 2011; Hoyland *et al.*, 2009; Florence *et al.*, 2008) with regards to the school aged learners, showed that severe food insecurity and poor nutrition negatively affects cognitive function as well as academic performance. Moreover, a study in Canada (Hamelin *et al.*, 1999) affirmed that poverty could lead to depression, which can negatively affect the cognitive stability and functionality that limits the learning and brain memory structures, and ultimately one's behaviour. On the

contrary, Figure 6.4 also shows that some respondents could not determine the relationship between food insecurity and academic underperformance of higher education students affirmatively and stated that the supposed relationship should be tested among students attending higher education. Figure 6.4 depicts a summarised visualisation network of all responses regarding the relationship between food insecurity and academic underperformance of students.

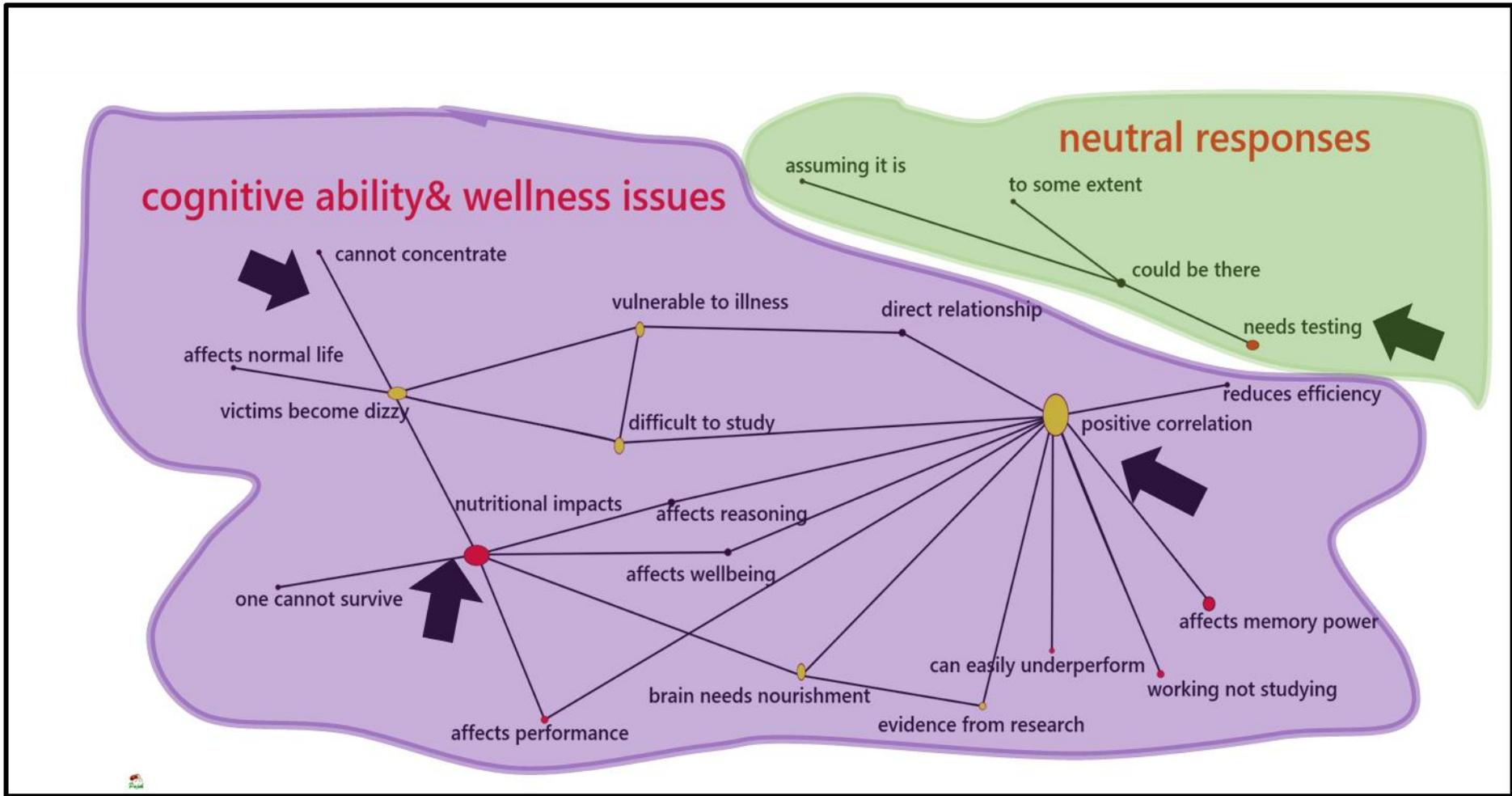


Figure 6.4: The perceived relationship between food security and academic performance-theme map

6.4 Evaluation of the student FSP: UKZN

Section 6.4 explores and discusses the UKZN-student FSP implementation. Programme evaluation was the main aim of this section of the chapter. Programme evaluation is a systematic method for collecting, analysing, and using the information to answer questions about a programme implementation, its effectiveness or efficiency. However, this study acknowledges that, that not all programme evaluations result in the assessment of its merit or worth. Some evaluation proponents (Pawson & Tilley, 1997: 63) contend that social programmes or interventions are simply ‘social systems’ because they comprise interplays of individuals or institutions, of structure and agency and of both micro and macro processes.

This evaluation study was carried out at an IHL, UKZN, to help identify the factors affecting the programme with the aim of providing possible alternatives or improvement to the operation of the programme. Among the point of focus in the study was to determine the rationale behind the formation of the programme, to identify what policy or framework was guiding the implementation of the FSP. The study also sought to explore to what extent if any, had the programme as an intervention to student hunger, enhanced the beneficiaries’ well-being including their academic performance. This evaluation study will attempt to apply the proposed conceptual framework as presented in Chapter 2, Figure 2.5 of this research dissertation. This qualitative study investigated the FSP implemented in 2012 by the office of student services division, to address the increasing cases of student hunger at the institution. This discussion on this topic is mainly based on the interview results and is complemented by secondary literature.

6.4.1 Rationale behind the formation of UKZN student FSP

The UKZN FSP was established in 2012. Prior to the implementation of the FSP, there was an increasing number of students who were experiencing hunger, and they lacked means to feed themselves. According to the information gathered from the research interviews, the student hunger problems at UKZN resulted from increasing number of the student enrollment especially in the UKZN’s access programme and the foundation programmes where it was established that the majority of these students had an insufficient fund for their education. The UKZN’s ‘alternative access programme’ was meant to improve student-enrollment to IHLs

especially among the historically disadvantaged groups in post-apartheid South Africa. Meanwhile, most students enrolled in the ¹⁴ alternative access programmes come from quintile 1 and 2 schools or the most impoverished schools in South Africa. In addition, in terms of the UKZN student profile, there was a significant number of poor student enrolled in the access programme, compared to students enrolled in the mainstream programmes. However, of utmost importance to this study is that the reported cases of hunger amongst students who lacked a stable supply of food, arguably due to poverty, enabled UKZN to establish an ‘intervention’ to help the critically food insecure students to access free food from the support services. Initially, the FSP was meant to be a stopgap measure or an incremental approach to address the reported cases of hunger amongst students. Hence, provisions of free meals to food insecure students were made through an informal arrangement of donating food from well-wishers from within and outside UKZN, and in some instances, some contingency funds were directed at taking care of students that required support systems including food and sanitary.

Subsequently, there was an increasing number of hunger cases reported to the university support system. A study by Munro *et al.* (2013) showed that many students especially those who came from low-income households and/or depended on financial aid for their educational requirement, were vulnerable to food insecurity at UKZN. In 2012, the UKZN Executive director of student services established a support fund to oversee the emerging student hunger problems in the university community. These funds were generated from the staff members across the university campuses, who were invited to contribute voluntarily on a monthly basis through a stop order system. Hence, the money would be deducted directly from the staff salaries to support what became known as the student-FSP.

6.4.2 Organisational structure of the UKZN-student FSP

Organically, the UKZN top leadership, which is the Executive management, comprises the Vice-Chancellor as the head of the institution and 12 other members whereof the Executive

¹⁴ Prospective students come from schools that have not equipped them for admission to a university in that they do not obtain the required point scores for admission to specific programmes. The University has developed innovative alternative access programmes to identify candidates who have the potential to succeed at university. Students identified by the programmes are recommended to Colleges. Available at <http://applications.ukzn.ac.za/Programmes-Offered/Alternative-Access-Programmes.aspx>. [Accessed 06/12/2017].

Director of Student Services is among them. As explained in the study methodology (Chapter 3), the UKZN-student FSP operates under the university's support structures particularly the student services division. The programme is organised around, the Executive Director of Student Division; as Head of the programme, the UKZN projects' manager, as the FSP programme administrator, Senior Student Development Specialist- as the programme coordinator, student counselling officers as counsellors for student support, and service providers as suppliers of food and meal vouchers. Figure 6.5 summarises the structure of the student-FSP programme. During the study, it was established that, at the university level, the office of the student division, headed by the Executive Director, is expected to enhance, support and to coordinate university programmes and services that facilitate a student-friendly atmosphere. Such an approach would promote students' growth, encourage their active engagement within the university and enhance academic access and personal wellbeing. In addition, the office works to integrate students' academic, social and community experiences and responsibilities on student services including financial aid, student counselling, and accommodation, health and student governance. Thus, the FSP was the Executive Director's initiative, to help address the problem of student hunger in the university community. Figure 6.5 presents the researcher's visualisation of the FSP organogram.

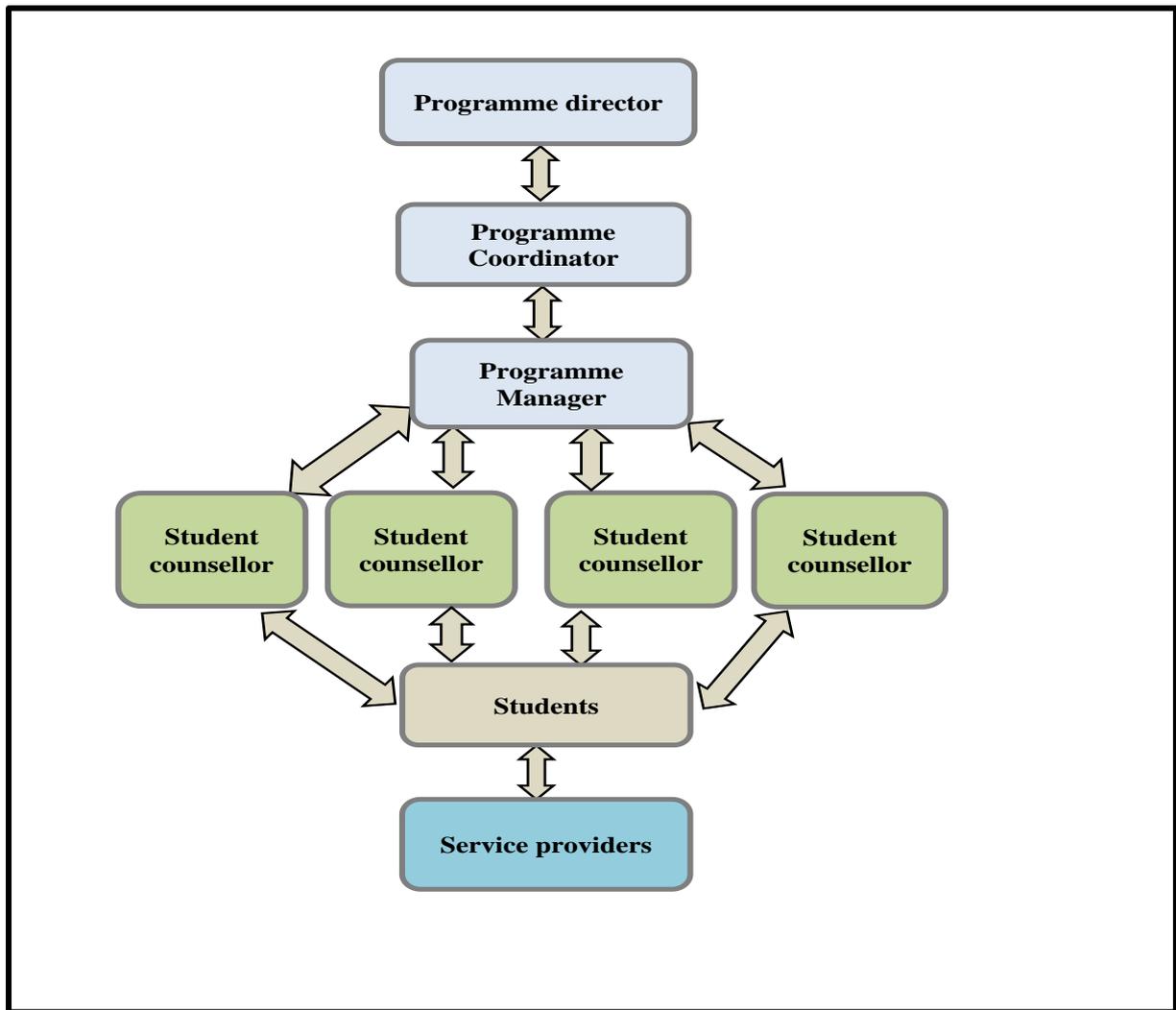


Figure 6.5: An organogram of the UKZN-student FSP

6.4.3 The aims and objectives of the programme

The following are the aims and objectives of the UKZN FSP:

- To provide food access to students in need;
- To create awareness about the problems of food insecurity and the impact;
- To provide counselling to the students;
- To inculcate a culture of self-support, self-reliance and consciousness of abundance amongst students;
- To collaborate with community organisations and donors to support the fund to sustain the programme.

The target beneficiary

The target beneficiary of the programme are naturally the students who are food insecure. The students lack means to feed themselves while undertaking their studies at UKZN. The students are mostly self-identified or are identified by their peers or academic/support staff of the university. They would seek help directly from their respective counselling offices (in colleges), or they would be referred to the programme by their friends, their peers, the SRC (the leadership of student body), or any designated staff within the university.

6.4.4 Analysis of the implementation of the FSP: An overview

The UKZN FSP operates under the UKZN, Student Division Services Office. The students' project manager who administers the payment of vouchers across the university campuses coordinates the programme. The coordination involves liaising with students' services division across UKZN's five campuses such that the target beneficiaries are able to access the meal that would be costed as a 'meal allowance'. The meal is very basic and nutritious and it is redeemed once a day. The meal includes a protein, a carbohydrate and a fruit/vegetable or fresh juice. The target beneficiary would be identified and screened at the student support services in each college who would then assist the student and provide them with a meal voucher. The programme coordinator sources the food service providers for the beneficiaries and then make available the payment of vouchers to the responsible college staff (student counsellors). The vouchers are then distributed to the college staff who distribute them to the beneficiaries. The proceeding sections of the chapter detail the implementation of the FSP at UKZN.

6.4.4.1 The programme input: policy and framework

From the interviews, it emerged that despite the implementation of the FSP, it has no direct policy or a well-established framework provided by the university. The programme director's office facilitates funding from within UKZN through voluntary contributions by few staff members. Ideally, it is expected that UKZN should allocate some funds to sustain the programme, however, the researcher gathered that the UKZN has no official position on financing the programme hence, it does not in any way allocate funds towards the operation of the critical intervention which aims at addressing hunger issues amongst students in need. Meanwhile, the Executive Director of student services office formalised the previously informal arrangement of assisting food insecure students at the university. As earlier outlined

in this study, efforts to provide food support to UKZN food insecure students had existed before the year 2012 or before the Executive Director's office was established at the University.

As highlighted earlier, the previous arrangements of the food provisions were in the form of uncoordinated arrangement of food donations from UKZN community (staff and students) and from some well-wishers (charity organisations such as the 'Gift of the Givers foundation', some Christian churches). Most of the donated food was perishable. By 2012, a more formal arrangement of what became known as the student 'food security programme', was established to take care of food insecure students in a more sustainable way by providing them with meal vouchers which they would use to redeem a meal from the university cafeterias. This arrangement was made possible by introducing a student support fund or 'meal allowance' from the UKZN staff who wished to contribute voluntarily on a monthly basis from their salaries. Generally, the staff members were informed about the support fund through their work forums such as meetings, the staff notice on the UKZN website or by the word of mouth from any of the UKZN stakeholders who were knowledgeable about the arrangement.

As an overseer of the operations of the FSP, the director facilitates the support fund, which is calculated in form of meal vouchers and is dispatched to the coordinator office. The programme coordinator and the programme manager facilitate the implementation process of the FSP by liaising with the service providers who operate some food cafeteria, across UKZN's five campuses, and to make available the payment of meal vouchers to all the four student-counselling centre in colleges, which are spread across the five campuses respectively. The beneficiaries (food insecure students) would access the meal vouchers after being screened by the student counselling office in their respective colleges. Following the screening process, the students would use the vouchers to redeem a whole meal from the UKZN cafeteria.

Meanwhile, whereas UKZN had provided some physical infrastructure (mostly college offices) and personnel as programme input, it emerged from the interviews that the Institution had not taken an official position on the 'ownership' of the programme. As a result, there is no clear orientation or policy framework from the university on the operation of the programme as can be seen that UKZN does not financially support the programme. This study argues that a well-

established framework or policy would guide the operation of the programme by providing, for instance, a strategy of raising funds in a more sustainable way.

6.4.4.2 The process: screening of the beneficiary

The targeted beneficiaries of the programme are UKZN students who have been identified or have been found to be critically food insecure. These are naturally referred to the student counselling office of the college through the institutional support arrangements such as campus health clinic, SRCs, ADOs, lecturers, or students. Thus, various UKZN stakeholders identify the programme beneficiaries through various ways. Mostly, a student is identified to be in need of the meal provisions when they are found to lacking a means to feed themselves. While it is acknowledged that the student counselling office is responsible for screening the beneficiary, part of the screening process is conducted at the ‘Campus Health Clinic’. For instance, the UKZN Campus Clinic is one area where food insecure students are identified by the certified medical personnel (a nurse or a doctor) when they are sick/unwell and are diagnosed with malnutrition related symptoms such as a severe headache, dizziness, inability to concentrate, lack of appetite for food or drink and stomach upset in a student. In cases where it is established that the student’s health is critically compromised by hunger, the food insecure student is given a whole meal at the Campus Health Clinic as an emergency measure. The medical personnel would, in most cases refer the student to the College Counselling Centre to determine the root cause and the extent of the student food poverty. According to R4:

At the clinic, if the student shows up and during evaluation, the nurse may realise that, that student might have presented symptoms like a headache, cramps, dizziness, nausea, and realise that all combined, the student ate their last meals three days ago.

In most cases, students report directly to the counselling office about their food poverty-related issues linked to lack of finances. At the counselling office, the certified psychologist interviews the student, including looking at the student’s financial circumstances to determine whether the student, would be needing food assistance for a short period or not; this is what is known as the ‘verification process’. Once it is established that the student lacks means, mostly finances to feed himself or herself on a sustainable basis, they are put on the FSP. The verification process involves determining the student source of funding (in case of the financial aid scheme or bursary), and whether that source of funding comes with some meal allowance (in case of financial aid scheme/loan/bursary) and when they last received their funding particularly their

meal allowance. Once the verification process is completed, the certified psychologist in the college (student counsellor) will inform the student about the meal voucher and administer it to him or her, which would be used to redeem a meal from the university campus cafeteria. Through the FSP, food insecure students (beneficiary) get a nutritious basic meal valued between R35.00-R45.00 (per day). Despite that the only one meal is redeemed per day, the meal voucher is much more than what an NSFAS beneficiary was allocated (R800.00 per month) which, translates into R26.6 for a meal per day.

Owing to ethical considerations, and to preserve the dignity of the beneficiary, the screening process is highly confidential; it is in a form of a closed-door face-to-face meeting. Only one student would be allowed per session. After establishing the need to put the student on the programme, a meal voucher is given in a case of an emergency short-term problem. However, depending on financial resources available, multiple vouchers are given if the student is a beneficiary of the programme for more than a day. For instance, a student who has no bursary or financial aid and is from a low-income household is likely to be on the programme for more than a month. University-wide, approximately 100 students are assisted through the student-FSP every year. The proceeding sections of the chapter discuss management issues regarding the FSP at UKZN.

6.4.4.3 The UKZN FSP: Theme map

As part of the evaluation study, questions pertaining to the management of the FSP at the IHL were asked during the interviews. Figure 6.6 depicts a network of 'issues' drawn in the Pajek programme, relating to the stakeholder's perceptions about the management of the FSP. The responses were harmonised into three major themes namely: challenges of the programme; successes of the programme; recommendations or proposed solutions for the programme improvement. Results show that the FSP has several challenges. For instance, the programme is largely perceived to be 'unsustainable' because it is not on institutional agenda. Other issues that affect the programme include unsustainable funding; the issue of social stigma amongst students; lack of a specific framework for its operation; and the programme not being funded by the University. Other challenges include that the programme is also perceived to be a welfare arrangement. Some of the achievements of the programme include 'looking at a broader context of the problem'. The identified themes were projected in a network displayed in Figure

6.6. The projected theme map represents a summary of the interview results from the UKZN's student-FSP management issues. The details of these results are discussed in Section 6.4.4.4 and 6.4.4.5.

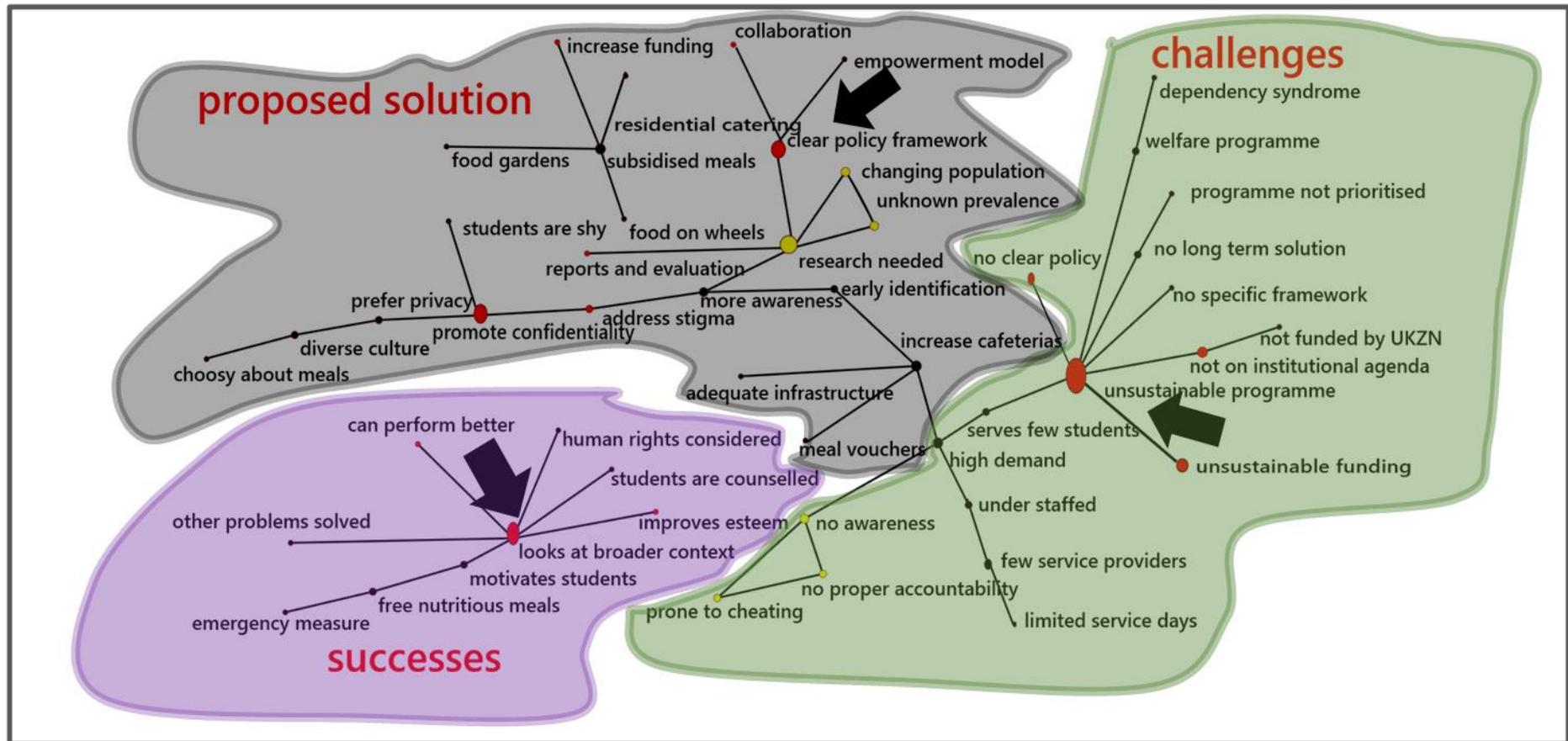


Figure 6.6: FSP management-theme map

6.4.4.4 Programme output and impacts: Successes of the FSP

Addressing broader issues

Figure 6.6 shows that despite that UKZN has not taken any official position on the ownership of the FSP, the programme has been successful in addressing emergency hunger-related issues among students in need, thereby providing them with access to nutritious food. In addition, despite having limited resources such as personnel, physical infrastructure and financial resources the programme has been running smoothly in terms of making attempts and providing both counselling and meals to the beneficiaries. Further, the students who are referred to the programme by the student clinic office, after establishing that their condition of health was compromised by hunger, are attended to, thereby, ensuring the student's physical well-being.

To shed light on the above statement, results show that the FSP has been instrumental in providing food access to some critically food insecure students, who otherwise would not have been able to have a decent meal in times of their need. The provision of free meals to students in need also reflect the aspect of human rights considerations as food is a very basic human requirement. Moreover, owing to the fact that food access is a basic human need, most respondents held a view that, the food security intervention is part of a holistic approach to assisting a resource poor student to meet the demands of higher education. For instance, all the respondents held a view that the FSP is a combination of strategies that enhance student wellness-that is, students who are assisted with hunger issues are also offered counselling services and are assisted with other skills such as food budgeting and the importance of having a healthy diet for an active daily life.

One of the interviewees [R1], stated:

We can say for those we assist with hunger, we see them in counselling and we offer them support and skills. For those we feel that the reality is very harsh, they have no money going to support their families, and we give you options. We would rather look at your needs and get you a part-time job.

The above sentiments clearly show that the programme looks at the issue from a broader sociological perspective. It takes into account, the contributing factor to the issue of student hunger. In addition, some respondents contended that the programme has been successful in considering the real effect on academic performance. Respondent R4 stated, "*It does help them, it does help them to focus better and for me, that is one of the major impacts of the programme*".

Figure 6.6 also shows that the provision of free nutritious meals to food insecure students served as a motivation factor which to some extent helped them to perform better at school. The aspect of motivation was directly linked to improved esteem needs and the ability of the programme beneficiary to perform better academically.

Although the programme primarily targets students who lack financial support to sustain their food budget and are from impoverished backgrounds, results in Figure 6.6 show that the opposite was the reality largely due to political factors. Likewise, the FSP also reaches out to students who are on financial aid and are affected by hunger issues due to some political factors such as delayed payment of the financial aid packages by the government. Such political factors affect most students who depend on financial aid, to acquire food during the semester. On this issue, R5 stated:

At peak periods, students are hungry, because the Department of Education supply chain, works from April to April next year. Registration is from January to February. From January to April, students are hungry so we bridge that gap, for those who do get funding but the money comes late. We bridge the gap, for those who do not get funding or those who had funds but they mismanaged the money.

The above sentiments also show that to some extent, political factors such as delayed payment of financial aid to students attending higher education triggers food poverty and hunger especially among students who depend on government funding.

In summary, it is argued that while the food security intervention is a short-term emergency measure, it is quite useful, such that when a student in need goes to the counselling office and report that they have not eaten for days, they are assisted. In addition, the screening process creates a rapport between a student and the counselling staff by enabling them to look at a broader context of the cause of student food insecurity. The process facilitates other sustainable options of assisting the students, such as recommending the students for the part-time job so that they can have some regular income to sustain their food budget. In view of the above, R2 stated:

What is important is the optimal functional brain in the university, so it's much more than just handing a voucher. The programme looks at the broader issues of nutrition, study skills and time management of looking at other resources that they can tap in and the whole question of 'resilience'.

The above sentiments demonstrate that the FSP at UKZN is also a platform, which allows the counselling office to look at psycho-education of the student. In addition, it serves as a platform for looking at budgeting skills and dietary diversity of a food insecure student.

6.4.4.5 Challenges of the UKZN FSP: Factors affecting the FSP

The results of this study show that, despite such an important intervention which takes into considerations, the plight of the students in need by, providing them with means to access free meals at the university, the FSP is faced with a number of challenges that are both political and non-political. The proceeding section of the chapter discusses the factors affecting the food security programme at UKZN. These factors are outlined in Figure 6.6 of the Pajek result and the Kamada-Kawai (1989) emerging transformation depicting the main issues raised by the FSP stakeholder's perceptions during the interviews.

The stakeholders identified many challenges affecting the implementation of the FSP. Results in Figure 6.6 shows that although the respondents perceived the FSP as a necessary emergency intervention of student hunger from a broader context, an overwhelming majority of the respondents had no confidence in the programme sustainability. The respondents perceived the programme to be unsustainable due to several factors such as lack of prioritisation of the programme by the university, and the negative perceptions attached to food aid as expounded below.

Policy issues: Lack of a regulated framework-un coordinated approach to management

As explained earlier in the chapter, the FSP has no direct policy or a well-established framework provided by UKZN, to help implement the programme. From the interviews, it emerged that the respondents were concerned with the sustainability of the programme and expressed lack of confidence in the future of the programme. Such concerns were linked to an absence of an orientation or a direct policy from the UKZN, to support the programme despite its existence for more than four years. The respondents were also concerned that the meal voucher system was not a long-term or consistent solution to addressing student hunger during the semester. As such, the system did not allow the beneficiary to access food on a regular basis. For instance, the programme's operation is parallel with the UKZN academic calendar, which implies that the programme beneficiary can only access a meal on school days and not on weekend, and on public holidays. On the subject matter, some respondents expressed their

dissatisfaction with the way the programme was being implemented by holding a view that the whole system of managing the programme, was unsustainable. Such a view was shared by R2 and R4 (respectively):

R2:

I think it's a complex issue that we need to really sit together and really come up with something which is viable, which is easy to implement, which has the corporate sector on board, which has shops and so on, on board, which has students themselves on board, which is sustainable for a very long time.

R4:

I am uncertain about the future, the fact that there is no proper or policy framework put in place. I think it needs to be addressed in a more university approach rather than it feels like a reactive response by identifying an issue and then being proactive about it.

Respondent R6 added that the programme was also challenged with dependency syndrome among the beneficiaries:

The challenges are issues with coordination and having a proper policy or framework in place that would help to manage this and provide clearer guidelines. I think both the staff and then the community draws it up, and the staff will have to manage it like some of the staff under me as well as the students themselves understanding that there is availability. And it should be one that creates a sense of self-sustainability rather than dependency. I think we need to shift from a dependence model to something that provides dignity and some sustainability.

R5 affirmatively stated:

It's not sustainable, or especially in the long term and we are not looking at students in terms of response to, for example, that it's a transformation issue, that it's an issue that is related to access. It's an issue related to citizenship.

Resource issues: funding and personnel

The study findings show that the absence of the programme regulated framework resulted in limited resources to support the programme in a more sustainable and effective manner. As outlined earlier in the chapter, the FSP is financed on a voluntary basis by the university staff members from their ‘pockets’. Therefore, the respondents held a view that funding system of the programme quite unsustainable in that, often, the well-wishers (funders) are not consistent in providing their monthly contribution. As a result, only a small population (approximately 100 students) are beneficiaries of the programme every year. This is a significantly low population of the targeted beneficiary compared to the prevalence of student food insecurity, which is estimated at 53% whereof 10% are severely food insecure, as revealed in Chapter 4 of this study. Another problem linked to financial resources is that particularly the voucher system is funded by voluntary staff contributions, each month; hence, a number of vouchers to be dispatched to each month would be determined by the monthly contributions raised. On the subject matter, R5 considered a collaborative approach to ensure financial sustainability, “*I think it [FSP] needs a lot of assistance from the private sector. It needs sustained and consistent fundraising efforts*”.

Apart from having limited financial resources, the programme is also short of infrastructure and personnel. The study established that the implementation stage the programme suffers from having limited personnel. For instance, the FSP did not have specific personnel employed to operate the programme. Instead, in their capacity as UKZN student counsellors, their offices are open to all students regardless of the student’s socio-economic status. In other words, the student counselling office staff attend to all students’ social and psychological needs including issues of student hunger and the effect. Within this context, the UKZN psychologists are ‘sort of volunteers’ for the programme because, in their roles as student counsellors, they attend to any student who directly reports to them or is referred to them by any designated staff at the institution. Thus, there is no official position of their roles in the FSP than being the UKZN student counsellors. For instance, it takes a food insecure student to make an appointment with a student psychologist who would subject the student to screening to determine whether the student should be on the FSP or not. Moreover, the majority of the respondents expressed their dissatisfactions in the programme implementation. Respondent R1 stated, “*You know you really need someone to drive this programme*”.

Further, R2 expressed sentiments, depicting dilemma in the programme implementation:

I would say, we would need about two or three additional members of staff per campus. Without the necessary human resource input, that is the major challenge. That is where implementation is a challenge, which is why we are looking at centralising it to student services and actually have it to operate from the student health clinic or from the campus HIV/AIDS units.

Meanwhile, R6 had similar views as R2, depicting the dilemma on the implementation of the programme:

We've been told that the food voucher system was an interim measure. So it's not a bottomless pit, we need to look at other strategies. Previously we had food parcels but was what we started with before. The problem around that was the storage of food parcels and the expiration dates of the food.

Inadequate infrastructure is another problem negatively affecting the implementation stage. The programme depends on the few cafeterias at UKZN, to deliver the meals to the beneficiaries. For instance, some campuses have limited service providers that are contracted to provide the meals to the students. This leaves the students with a limited choice of accessing their preferred meals.

Other issues linked to limited financial resources of FSP include very low publicity for the programme. In this study, it is reasoned that funding has more influence on determining the number of the beneficiaries than the marketing of the programme at the Institution. For instance, the limited financial support for the programme resulted in very low publicity and programme awareness in UKZN community. Ultimately, the majority of UKZN stakeholders especially the students are ignorant about the programme existence. Responding to the question of programme awareness issues, R5 stated:

If this programme was well marketed to the students to let the wider population know that there is such a programme on campus, I can almost guarantee that the numbers will skyrocket and sometimes we do not have funding to manage this, so financing for us is the first major challenge.

Apart from R5, R6 also held a view that,

We don't market it for a good reason. If we market it, we will fill up the whole University. So it's for proper criteria, we have a proper, little protocol here, proper criteria to meet and we have a strategy in place. Students come to us via the SRC, via

lecturers, via the PL wellness centre, academic mentors, ADOs. So, they come through institutional support arrangements. A student will hear from other students to come to us. They come and they see the admin [administrator] and they say, they are hungry. One does not necessarily need counselling because they are hungry, it's a poverty and social-economic issue.

The views expressed above, are a clear indication that due to limited funding, the FSP is unable to reach out to many students who are in the predicament of food poverty. The above sentiments also demonstrate that such food aid programmes are prone to abuse if no proper channels for screening are put in place. Furthermore, some respondents held a view that apart from having limited service providers at each campus, the lack of research on the prevalence of the phenomenon had compromised the implementation of the programme. For instance, R4 stated:

The other challenge is that we do not know and we have been unable to establish the prevalence of food insecurity at the University and that needs to be done. Under the current system, the way it is running is that we will not be able to provide meals for that number of students then.

Accountability issues

Closely linked to the issue of awareness is accountability issues. Some respondents held a view that they could not advertise the programme to the wider university community because the 'system' is prone to cheating as some food secure students would take advantage of accessing free meals. R4 stated, "*We have reports of the voucher being sold off. I suppose with any programme, there are going to be loopholes and only when it's tested would you be able to see how to address that*".

Respondent R6 shared similar sentiments to R4s' views:

The criteria is a little problematic because this again has been determined by the student services as well. I have reservations again because students, who have funding, for example, should not be eligible right. But often, students who do receive funding don't know how to budget properly or they come from such an impoverished background that they are sending money back home. So there they are here needing to succeed academically but without support, you know the basic need being met as well. So that is the main criteria, the student should not have funding. There needs to be evidence that they don't have other financial support. That's problematic again because students don't have those documents.

In addition, R5 held a view that, "*We have two groups of people [food insecure students]. There're those who don't have the money and they don't have food, and there're those who have the money but have no food because they mismanage it*".

However, one of the senior personnel in the programme, complained about the lack of proper accountability to measure the programme impact on the student and the institution. R2 stated, *“The programme has been unable to establish the impact of the programme due to lack of information from the college office”*. The study established that such information lacking was due to the absence of a monitoring and evaluation system for the programme.

Negative perceptions: Stigma issues

Apart from the issues of limited resources, the FSP is also faced with the problem of negative perceptions attached to food aid. Seemly, some students do not want to be known to be beneficiaries of ‘a food programme’ as this would trigger social stigma. Commenting on the subject matter R1 stated, *“I don’t like it to be seen as a food programme. There shouldn’t be the stigma attached. There should be easy access to whoever wants to, we need catering residences”*.

However, a more explicit view regarding student food insecurity, food aid and stigma was shared by R3:

They [beneficiary] pitch up during exams, before exams, after exams, beginning of the year, end of the year when they finish their money. That’s the time you see them. Particularly you will see them from late January to April. They don’t come in big numbers, there is a stigma attached to that. So they will come in one by one, and once we know them, we work with them, we don’t need to ask them.

From the interviews, it was established that the UKZN has other food security interventions that informally assist students by providing them with food. Commenting on this issue, R2 stated:

There’s the ‘Hare Krishna’ [a charity organisation] that comes in on Mondays and Wednesdays and there are ques of students getting food, there’s food but it’s not only for hungry people. Anybody can go there, the whole university can crowd there.

R6 stated:

There are academics that bring food. There are people that have an on-going standing support for the students, they know who they are, and the students will go and eat discretely to them. They are many things happening on campus that is why I said there isn’t a coordinated approach to managing food insecurity in higher education.

The above sentiments are not only a confirmation of high prevalence of food insecurity at the UKZN but also an indication that students who need free food may not feel the stigma or the

shame attached to food aid when food is distributed openly and access is guaranteed to all who may need it. To some extent, it also shows that there is minimal or no social stigma attached to free food is when it is distributed without a 'tag' 'label' or as handouts for the poor and needy in communities. This calls for an option of considering residential catering at the university campuses as this would enable students to access food without the stigma attached. Moreover, the presence of other food support arrangements at the institutions is a clear indication that many students would be needing food assistance due to food insecurity.

Within this context, it is argued that the presence of several food support arrangements, formal and informal, is a clear indication that food insecurity is a real issue at UKZN and that many affected students prefer not to be known dependents of a 'welfare programme' due to the stigma attached to food aid programmes.

6.5 Conclusions

Based on the review from policy documents, secondary studies and from key informants' interviews, this study contends that the implementation of the FSP at UKZN, can be successful because of its' well-coordinated voucher system across UKZN campuses for more than four years. Largely, the programme has met some of its main objectives such as the provisions of a very basic human need, which is a nutritious meal to some critically food insecure students, who otherwise would have been unable to cope and to meet the higher educational demands during the semester. As such, the programme has been making a difference in terms of food access and food availability to critically food insecure students while undertaking their studies. The FSP has also been successful in providing counselling and guidance to the beneficiary by educating them about the importance of a food budget and healthy diet for an active.

In contrast, the programme has very little resources of personnel, infrastructure and finances to reach out to many students who are in the predicament of food poverty. Efforts to reach the programme to the wider community were impeded by lack of financial support from the university that resulted in a shortage of staff, infrastructure and service providers. The study established that the FSP did not have the infrastructure of its own but operates 'somehow', from the student counselling office. The study also revealed that the FSP lacks the much needed regulated framework to foster a more effective and efficient operation of the programme. Further, this study established that it was much harder for the FSP stakeholders to estimate the

prevalence of the phenomenon due to lack of empirical research on the issue and the programme's evaluation system. All the respondents expressed their willingness in knowing the prevalence of the current state of food insecurity at the institution and encouraged the researcher to make available the results of this study. Respondents also cited the problematic social stigma attached to the issue of food insecurity and food aid among the factors impeding many students in need from accessing food from the programme. As a result, there was lack of openness about the problem among the target beneficiary leading to the very low turnout of the beneficiary in the programme. Based on the findings presented in this chapter, the proceeding Chapter (7) presents a proposed framework as a potential solution to challenges facing the FSP.

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CHAPTER 7: A PROPOSED FRAMEWORK FOR MANAGING STUDENT FOOD INSECURITY AT UKZN

7.1 Introduction

This chapter briefly addresses objective 7 of the dissertation. The aim of this study was to offer the potential solutions to the challenges facing the food security programme at the University of KwaZulu-Natal (UKZN). The chapter draws on the findings of the study and provides some insightful perspectives on managing the complexity of student food insecurity in South African Institutions of Higher Learning (IHLs)-through a collective approach between UKZN and other community stakeholders such as the business sector. The chapter presents a framework (Figure 7.1) and proposes it as a more sustainable and effective strategy for managing food security interventions at UKZN. Section 7.1 of this chapter describes the key activis involved in implementing and managing the food security programme (FSP), the chapter ends with a conclusion.

From the findings of the study, several challenges regarding the issue of student food insecurity and its management at UKZN were identified. Generally, most participants in the study cited lack of programme (FSP) awareness. As reported in Chapter 6, most participants cited limited resources: finance, infrastructure and personnel as major factors affecting the operation of the FSP. This study established that most of the challenges associated with programme management emanate from the issue of ‘unspecified ownership’. Therefore, the study findings suggest that ‘programme ownership’ and ‘clear programme orientation’ are the most fundamental elements in building a sustainable and effective food security intervention at the Institution. The study recommends that UKZN, as an institution affected by student food insecurity, should take an official position on the programme ownership and prioritise it as an institutional agenda.

Herein, the proposed framework (Figure7.1) serves as an overview of the recommendation for the improving students’ food security through a collaborative approach between an IHL (UKZN) and the business sector. From a broader perspective, this collaborative approach between the aforementioned would reflect their commitment as part of the key players in enhancing food justice by responding to the needs of the poor (food insecure students) in their respective communities. More specifically, the approach has high potential to leverage food

insecure students from hunger and the negative issues (such as academic underperformance) associated with the phenomenon on a student and the nation’s development prospects.

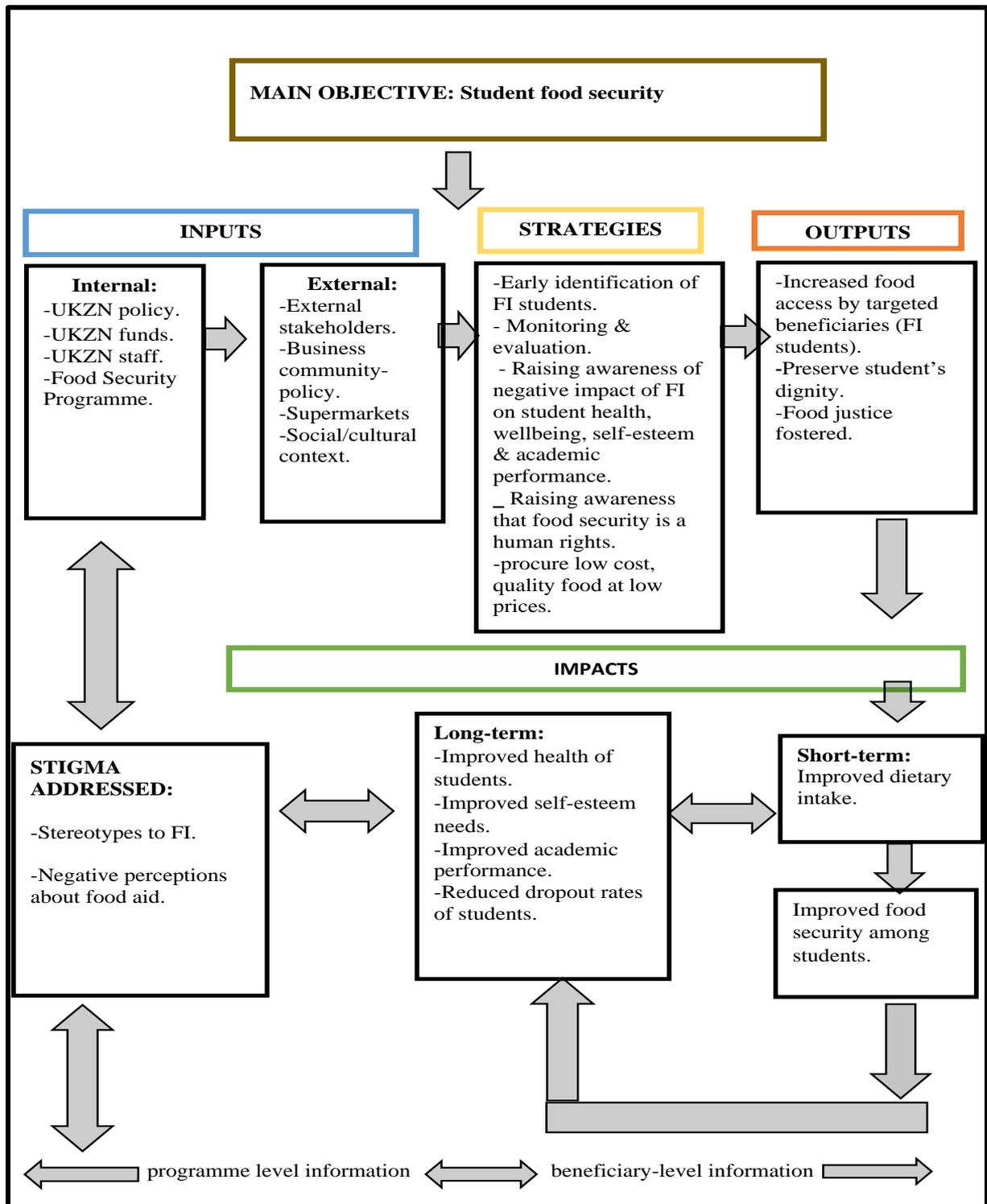


Figure 7.1: Aproposed framework for managing FSP at UKZN, South Africa

7.2: Programme management

Programme management involves a number of factors including input, outputs and impact. The following are some of the fundamental elements to consider in building a sustainable FSP at UKZN.

7.2.1 Input and strategies

Internal: The UKZN Policy environment: This study, identified that despite the increased access to higher education among the poor, not all financially needy students, access the financial aid scheme (Council on Higher Education, 2016: 29). This leaves some poor students with very little financial support to meet the educational requirements and to maintain a healthy diet during their period of study. As highlighted earlier in this chapter, in the absence of residential catering at the IHL, and the subsequent high levels of food insecure students, UKZN should officially take the ‘ownership’ of the FSP and prioritise it in enhancing student wellness and academic performance. In addition, alongside receiving monthly donations from some members of staff, the UKZN should include the FSP in its annual budget and set aside some funds for targeting to support severely food insecure students who are not on financial aid. The programme personnel would include the social workers who will be responsible for issuing meal vouchers to the beneficiaries. Considering the stigma attached to food aid, the offices for the social workers could be located close to the financial aid offices at each campus of the University.

External input: This would be a collective approach by the UKZN, the business sector, social aid agencies and other key stakeholders to consider food justice among the most vulnerable (food insecure students) in their communities. Geographically, the UKZN campuses are located in two cities of KwaZulu-Natal Province, Durban and Pietermaritzburg. These campuses are located in areas that are convenient for students to purchase their groceries from nearby supermarkets. The University of KwaZulu-Natal could lobby that the local business community source and sell low- cost, quality food to food insecure students. The supermarkets would allow food insecure students to purchase nutritious meals at an affordable price, using their meal vouchers issued by UKZN. Taking into account the social and cultural context of food preference, purchasing food from supermarkets will give the programme beneficiaries the autonomy to choose their preferred meals (that are culturally accepted). It is noted that meeting

‘food preference’, is one of the fundamental elements of food security. The UKZN could also lobby external stakeholders to raise funds for the programme.

7.2.2 Outputs

One of the fundamental outputs would be increased number of the targeted beneficiaries. The beneficiaries will have a sustainable way of accessing nutritious food in a dignified manner, as they will have the autonomy to purchase it directly from the supermarket.

Impacts

The programme impacts would be short term and long term.

Short term: One of the fundamental aspects of the short-term impact of the programme would be improved intake of an adequate, quality diet among the beneficiaries.

Long-term: One of the pillars of food security is to live an active daily life. Within this context, it is argued that such activities include good cognitive and intellectual ability. The long-term impact of the achieved food and nutrition security of the students would benefit both the students and the institution, academically. At the individual level, once the beneficiary is food secure, as he or she would be accessing adequate, quality food in a sustainable manner, there would be a positive change in the perceptions, attitude and behaviour of students towards food aid. The achieved food and nutrition security of the targeted students would impact positively on their health and wellbeing and self-esteem. The beneficiaries of the FSP would be motivated to participate actively in academic activities. Ultimately, there would be improved academic performance and reduced dropout rates in the institution.

7.2.3 Other fundamental elements of programme management

Programme monitoring and evaluation. The study established that the impact of the FSP being implemented at UKZN could not be measured mainly because there was no monitoring and evaluation system in place. Therefore, the establishment of a programme monitoring and evaluation system is strongly recommended. Monitoring and evaluation improve the efficiency and effectiveness of the programme. In addition, it enhances documentation, learning, feedback, transparency and accountability.

Programme awareness and education about food security

The study findings indicate that undergraduate students from resource-poor backgrounds are highly vulnerable to food insecurity; hence, early identification of the targeted beneficiary (food insecure students) could be done at first-year undergraduate level. The existence of the FSP and its profile could be published on the UKZN website to raise awareness among the students and the broader University community.

7.3 Conclusion

Based on the findings of this study, a framework for managing FSP at UKZN has been proposed. The framework proposes a structured and systematic way of establishing, mobilising resources, implementing and managing the programme. The framework indicates that key strategic elements of the programme include raising awareness of the need for the programme and its existence once it has been established. Changing the negative perceptions and attitudes of the targeted beneficiaries (food insecure students) is a key to the utilisation of the FSP. It is believed that the framework proposed above has a good potential for application in other South African IHLs with a significant prevalence of student food insecurity.

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CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

This chapter concludes the study and considers the significance of the main findings of this research, which was in essence a study on student food insecurity at an Institutions of Higher Learning (IHL), with a particular focus on the perceptions, prevalence, awareness and management challenges of food security interventions at the University of KwaZulu-Natal (UKZN) in South Africa. The study presented the complexities that it regards as critical to issues regarding food insecurity among students at IHLs. It also presented the implementation of the UKZN-student Food Security Programme (FSP), as an intervention to the problem of student hunger at the Institution. The study findings also established that the UKZN had no monitoring and evaluation system to determine the prevalence of food insecurity at UKZN, and the operations of the FSP at the Institution. Furthermore, it presented a set of recommendations for managing the food insecurity issue and argued that these could enhance a positive outcome of the FSP at UKZN and other IHLs facing similar challenges in South Africa.

One of the main research problems of this study was guided by the question “What are the perceptions of food insecurity at IHLs and how is the problem of food insecurity being managed at UKZN?” The primary of this study was to recommend sustainable ways in which the Food Security Programme as an intervention for food insecurity, can be implemented at UKZN. Deriving from the main objective were the following seven specific objectives:

1. To assess the prevalence food insecurity among students at UKZN.
2. To assess the level of awareness of food insecurity prevalence and perceptions about food security interventions at UKZN.
3. To determine the operationalisation of food security/insecurity and interventions as evidenced at UKZN.
4. To identify the policies guiding the implementation of the FSP at UKZN.
5. To determine the extent to which the FSP meets its intended objectives and enhancing students’ academic performance at UKZN.
6. To identify the management challenges of the food security programmes as evidenced at UKZN.

7. To propose recommendations to meet the intended objectives of the FSP and its impact on students education at UKZN.

The study was guided by Maslow's Hierarchy of Needs Model, which is associated with Piaget's Theory of Cognitive Development. Maslow's Model comprises a five-stage Hierarchy of Human Needs, which are classified into the following needs: physiological needs, safety and security needs, love and belonging needs, self-esteem needs and self-actualisation need. According to the model, food is a physiological need, hence, a very basic need in human life such that if left ungratified, it negatively affects some higher-ranking needs such as self-esteem and self-actualisation. However, of importance to this study is the Model's assumption that there is a relationship between human basic needs and general behaviour such that, if a lower ranking need such as food security is not gratified by the students, it can compromise their other needs such as self-esteem. Therefore, largely, this study concurs with the assertion that hunger would have a negative impact on the cognitive state of an individual student and his or her motivation to stay in school. From Maslow's perspective of Hierarchy of Needs Model and Piaget's Theory of Cognitive Development, this study argues that food and nutritional security are critical needs which if left ungratified, can seriously impend a student's esteem to access food aid, the motivation for school and ultimately his or her self-actualisation need. It is also argued that individual food security is a basic human right for all, including students attending higher education.

The conceptual framework for food security and the impact evaluation framework of food security programmes also guided the study. The framework posits that good management of food security programmes can yield positive results in the targeted beneficiaries. This study argues that despite the good management of the programme, the absence of the specified policy on implementation can compromise the operations of the programme and its sustainability as evidenced from the UKZN FSP in South Africa.

A mixed methods approach was employed. Data were collected twice-using two questionnaire surveys with open-ended and closed questions (Appendix A & B), focus group discussions (Appendix C) and in-depth key informant interviews (Appendix C) to investigate the research problem. Data were collected from the purposively selected UKZN fulltime students, academic lecturers, senior management staff, and junior support staff from all the colleges and campuses

of UKZN. Data were also collected from the management staff for the FSP at the Institution. Literature reviews were incorporated in the study, to complement the arguments in the findings. The survey data were analysed descriptively using the IBM SPSS version 24 software. Qualitative data from focus group discussions and key informant interviews with senior management staff and SRCs were analysed thematically. Qualitative data from the key informant interviews with the FSP management were analysed descriptively and thematically, guided by the Pajek software together with the Kamada-Kawai (1989) algorithm energising transformation to project networks of themes.

8.2 Conclusions

This proceeding section presents the summary and conclusions from the chapters of the dissertation:

8.2.1 Literature review

The literature review established that food security remains critical in the world. Food security is a widely recognised phenomenon at international level as evidenced by its prominence at global development forums such as the 2000 United Nations' MDGs summit and the subsequent 17 SDGs in 2000 and 2015 respectively. In post-apartheid South Africa, food security is one of the fundamental human rights enshrined in the 1996 National Constitution. From the literature review, it emerged that the realisation of food as a constitutional right resulted in several government policies including the Reconstruction and Development Programme, which translated into programmes such as the National School Nutritional Programme and actions such as the school feeding programmes. As a result, South Africa has made great strides in addressing food insecurity and nutritional needs among the school age children, resulting in enhancing their active learning capacity. On the contrary, the preliminary literature review shows that there is an absence of a formalised framework for addressing food insecurity among learners who are in the same predicament of poverty and at IHLs such as the UKZN. As a result, the UKZN implemented the FSP in 2012 to address the increasing cases of food insecurity among students. From the literature review, also established that the case of UKZN is not unique, as the phenomenon has been identified as an emerging problem among university students including those in economically advanced countries like the United States of America, Canada and Australia. At those institutions, food insecurity was reportedly higher than in the general population. Some researchers reported that some coping strategies of food

insecurity included securing part-time jobs to raise an income for a stable supply of food, and food theft, particularly those who shared communal kitchens at university residences.

8.2.2 Specific-objective 1

The sub-objective one derived from the question, “What is the prevalence of food insecurity and perceptions of food insecurity status among students at UKZN?” The aim was to explore the prevalence of food insecurity among UKZN students and perceptions about their food insecurity status. The study found that there was a high food insecurity prevalence at the institution with nearly 10% of the students being severely vulnerable to food insecurity. Ideally, a student who is on financial aid or bursary was expected to be food secure. On the contrary, the opposite was the reality as, the study findings showed that students who depend on the financial aid scheme (NSAFS) and study loan to access higher education, stand a risk of being vulnerable to food insecurity compared to students who were self-sponsored. In addition, the study found that food insecurity was more prevalent in undergraduate students than in postgraduate students. The study also investigated students’ perceptions about their food security status. It was revealed that students who depended on NSFAS or loans, perceived themselves to be food insecure compared to self-sponsored students and those who were funded through bursary. The study established that poverty was one of the major factors that contributed to student food insecurity at the Institution. Furthermore, it was found that severe food insecurity had a negative effect on students’ concentration and effectiveness such that some of them had missed classes due to hunger.

8.2.3 Specific-objectives 2-3

The objectives aimed to assess the awareness level of food insecurity prevalence and perceptions towards food security interventions among stakeholders at UKZN. The objective also aimed to determine the operationalisation of food security and or food insecurity at IHLs as evidenced at UKZN. The main research questions deriving from these objectives were, “What is the level of awareness about food insecurity prevalence at UKZN?”; “What are the perceptions of food insecurity interventions among the stakeholders at UKZN?”; “How are the food (in)security and interventions operationalised at UKZN?” Most participants in the study acknowledged that the Institution was faced with an issue of student hunger. Contrary, despite that the FSP had been in operation for more than three years, an overwhelming majority of the

participants were not aware of the existence of the programme or other similar interventions at the IHL. The study findings also established that most of the executive management had no clear knowledge about the operation of the FSP as an intervention despite acknowledging that student food insecurity is an emerging issue at UKZN. Such knowledge a gap derived from the lack of awareness regarding UKZN food insecurity prevalence and lack of documented research to inform the University and foster a strategy to adequately address the problem. The study also revealed that social stigma was attached to food aid such that some food insecure students were unlikely to access nutritious meals through the FSP due to negative perceptions they attached to food aid linked to poverty. It was also acknowledged that the concept of food security is complex such that be used interchangeably with food insecurity by different people.

8.2.4 Specific-objectives 4, 5 and 6

The sub-objectives for this study were to identify the reasons behind the implementation of the FSP, and the policies guiding it at UKZN. Herein, the study also aimed to explore the extent to which the FSP meets its intended objectives. The study also aimed to identify the management challenges of the food security programmes as evidenced at UKZN some of the questions about included the following: “What is the policy framework guiding the implementation and management of FSP at UKZN?”; “How is the food security programme being implemented FSP at UKZN?”; “To what extent if any, has the FSP has improved the beneficiary’s food security and their academic performance?”; and “if any, what are the management challenges of food security programmes as evidenced at UKZN?”

The study established that the FSP was implemented in 2012 to respond to the increasing cases of student hunger at the IHL. The study also found that most poor students were vulnerable to food insecurity due to little financial support from government and families. As a result, the students had inadequate resources to sustain their food budget and to maintain an adequate nutritional diet. The study findings also revealed that some students were vulnerable to the phenomenon due to some risk behaviour such as poor financial management. Therefore, such students were found needy even when they had sufficient means to sustain their food budget. Further, it emerged that the UKZN had no official ‘ownership’ of the FSP and as a result, there was no policy orientation for the programme implementation and sustainability at the Institution. The study findings revealed several challenges affecting the operation of the programme, among them, limited resources such as finances, infrastructure and personnel. As

a result, the existence of the FSP had not been publicised to the broader UKZN community, such that very few students were beneficiaries of the FSP. The study concludes that formalised food security interventions at other IHLs in South Africa, are likely to be met with similar paradoxical perceptions such as uncertainties about the programme sustainability and social stigma of the targeted beneficiaries with the resulting reluctance of students to access the services.

8.2.5 Specific-objective 7

The aim of Chapter 7 was to address Objective 7 of this dissertation. The chapter drew on the findings of the study and provided some insightful perspectives on managing the issue of food insecurity IHLs-through a collaborative approach between the external stakeholders such as the business community and UKZN. Having identified some critical challenges regarding the management of student food insecurity, Chapter 7 established that taking an official position on the programme ownership by the UKZN and having a monitoring and evaluation system in place are fundamental to meeting the objectives of the FSP. Herein, Chapter 7 provided a framework for managing the issue of food insecurity which it argued, would enable the UKZN to adequately address food insecurity and enhance student wellness at the institution.

8.3 Policy recommendations

The study confirms that student food insecurity is a challenge at in South Africa, especially at UKZN where there is a high number of students from low-income households; coupled with the lack of institutionalised meal plans or dining halls offering balanced meals for students. Yet the issue is not a priority on the national agenda, despite its reported consequences on the students' educational outcomes resulting in low graduation output and jeopardising the country's economic prospects. In the absence of a policy orientation to addressing the emerging problem of food insecurity, seemingly, an IHL like UKZN will have to contend with the situation as students who experience critical food insecurity will additionally suffer from psychological and emotional stress as a factor that can negatively influence their self-esteem and motivation, leading to underperformance of both the students and the institutions. However, due to the high prevalence of food insecurity among the students, an IHL such as the UKZN established the FSP, which has been met with complex and paradoxical perceptions such as stigmatisation and marginalisation of student beneficiaries with the resulting reluctance of food insecure students to access the service. As such, there is a need for government to

include the issue of student food insecurity on the national agenda. Such an approach may include the following:

- Reintroduction of institutionalised meal plans in the affected IHLs such as the UKZN to enable students to access their meals in a sustainable way. However, in doing so, the Institutions should take into account the students' diverse culture and beliefs about eating certain foods, or the preparations of certain food.
- Due to increasing poverty levels in the country, there is a likelihood that students who are on financial aid, who come from very poor households will continue to divert their financial aid, mainly NSFAS, to support their families other than prioritising their food security need and other educational costs like stationary, and transportation.
- Alternatively, the government could offer financial assistance to FSPs at institutions such as UKZN to enable poor students who are experiencing food insecurity during their period of study. It is noted that this gesture will promote food justice among the most vulnerable in the country, as will be evidenced from helping poor students from hunger.

Recommendations for UKZN:

There are grounds to recommend UKZN to enable the Institution address the challenge of student food insecurity adequately:

To take the ownership of the FSP and prioritise student food security on the institutional agenda. The study also recommends a collective approach by UKZN, the business sector, social aid agencies and other key stakeholders to consider food justice among the most vulnerable students to food insecurity as detailed in Chapter 7 of this study. The argues that if such a commitment of responding to the needs of poor students is made, as an institution, the UKZN will resonate with its mission which, seeks to critically engage with society, to redress the past inequities and imbalances, and to promote academic excellence.

- The university should also provide infrastructure and personnel for the smooth operation of the programme. This will promote proper accountability for the effectiveness of the programme. For instance, in its current state, the FSP lacks a formalised framework to support its existence; this has compromised proper programme accountability and sustainability. Meanwhile, during this study, the scope

of food insecurity was unknown to the programme personnel and the university. If the programme is to be sustainable, it needs a well-coordinated and embedded strategy, with well-resourced infrastructure, personnel and finances.

- The study also recommends that alongside empowering students with the knowledge of nutrition and basic skills in managing their food budget, practical interventions such as agriculture projects could be used to supply foods to UKZN.
- The study further recommends that alongside the proposed framework (Figure 7.1) for the UKZN, the Institution should engage the following academic discipline: food security, dietetics and nutrition, and the policy department and other concerned staff, to draft a formalised policy framework or orientation that would establish a criteria for students who need support from the programme as stipulated in the objectives of the programme. If the programme is to be sustainable, it needs a well-coordinated, embedded strategy, with well-resourced infrastructure, personnel and finances.

8.4 Contributions that this study has made to Original Research

The originality of this study lies in the extensive empirical data collected from all the colleges and campuses of UKZN. The data collected provided a wealth of insightful information, which allowed the researcher to understand the likelihood of, and the challenges associated with student food insecurity and the interventions associated with it. The preliminary literature showed that no study of this nature, particularly on food security interventions and the UKZN stakeholders' perceptions of those interventions had been undertaken at the Institution. In addition, the study findings revealed that no study was undertaken regarding the FSP since its implementation in 2012. Further, the findings showed that the UKZN could not establish the scope of student food insecurity at the Institution due to lack of a programme monitoring and evaluation system in place. However, the study acknowledges that previously, few studies by Gwacela, (2013); Munro (*et al.*, 2013) and Van den Berg & Raubenheimer, (2015), had attempted to study the phenomenon at IHLs such as UKZN and UFS from a single perspective. These studies explored the phenomenon among university students using descriptive surveys; however, the studies did not consider the perspectives of other stakeholders such as the universities' leadership, the academic staff, and other support staff at the institutions.

Furthermore, most of the studies in this area were unable to capture such a holistic approach to analysing the complexities of food insecurity issues at IHLs in South Africa.

This study was divided into two main parts. Firstly, it assessed the prevalence of food insecurity across UKZN campuses, the perceptions regarding the causes of the phenomenon and UKZN's response to the problem. Secondly, the study looked at the rationale behind the implementation of the FSP at UKZN and evaluated the programme. The study also diagnosed the challenges affecting the implementations of the FSP and presented a practical number of recommendations including a monitoring and evaluation framework for the programme management, which the institution could adopt. The study also recommended the institution to take an official position on the FSP ownership. It is argued that these recommendations have great potential to contribute towards the achievement of the programme objectives as well as the Institution's objective of maintaining student wellness while undertaking their studies.

The recommendations are drawn from the literature on food security, Maslow's Hierarchy of Needs Model, Piaget's Motivation Theory of Cognitive Development, and the impact framework on food security monitoring and evaluation projects and policy documents. The strength of the study is that it assessed the issue of student food insecurity and the interventions to the issue, from diverse perspectives of UKZN's diverse stakeholders including, students, academic staff, senior management, the student leadership body, junior support staff, and the management staff of the food security programme. Hence, the study made use of the perspectives and experiences of different stakeholders of understanding food insecurity in general and more specifically among university students and took into considerations their proposed recommendations on improving food security at the institutions and other institutions and at the national level. The study also took into considerations the stakeholder's opinion of food aid and means of improving food security amongst university students. It is acknowledged that towards the end of each interview session, the following recommendations were made in accordance with the challenges experienced and highlighted by the stakeholders in this study:

One of the student-counselling officers expressed concerns about the need for more research on food insecurity and stated:

I just would like to see the results of what you [the interviewer] will find and I just want to get those figures [statistics/findings]”.

Similar concerns were made by another student-counselling officer who stated:

You know, I think we need to look at what's been happening at the University and certainly use what comes out of your study. We need to make this thing [food insecurity] go, making the findings available for example, to the 'Executive Director of Students Services so that they can make decisions so that they can engage with it as well.

A FSP senior manager stated:

Just to let you know from our side, we are looking at other avenues that haven't been covered by research as well. So we are actually looking forward to an update, [UKZN food insecurity prevalence]. So am looking forward to your research.

One of the Executive Deans for Teaching and Learning commented:

The finding of this [current research], will this be shared broadly with the university community or the recommendations that come out of this [current study]? How would our students benefit from this? And, how would other stakeholders of the University be made aware of the outcome of the recommendations?

Some recommendations emerging from UKZN student leadership-SRC included the following: *"I hope that the findings and those recommendations will be implemented and taken to the University's higher structures"*.

8.5 Recommendations for further research

The study recommends further empirical research to determine the scope of the food insecurity in South African IHLs, and the associated problems such as psychological and emotional stress related to food insecurity experienced by students. The study also recommends further empirical research (experimental evaluation) to help determine the actual impact of food security on student academic performance at IHLs.

References

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APPENDICES

Appendix A: Student questionnaire

Assessing Perceptions, Management and Impact of Food Security Interventions on the Academic Performance of Undergraduate Students at the University of KwaZulu-Natal.

This questionnaire consists of **six sections**: Biographical; experiences, perceptions and awareness about food security interventions; food access and food insecurity; knowledge about institutional support; social stigma around food insecurity; experiences of food insecurity.

Please answer in the spaces provided. All data will be coded so that anonymity will be protected in any research papers and presentation that will result in this work. Your signature below indicates that you have understood the information about this study and consent to your participation and you may refuse to answer certain questions on the questionnaire and withdraw from the study at any time.

Participant:----- Date:-----
Researcher:----- Date:-----

Sex of respondent

M	F
---	---

1. Age -----

2. Nationality: Please tick

South African
International

3. What degree are you studying towards? E.g BScoSc, Bsc, LLb -----

4. Year of study/level -----

5. In which year did you register for this degree? -----

6. Who is funding your studies?

NSFAS	Student loan	Bursary	NRF	Other
-------	--------------	---------	-----	-------

If other please specify -----

7. Experiences, perceptions and awareness about food security interventions

8.1 Do you think there is food insecurity among students in the university?

Yes	No
-----	----

8.2 If you answered **Yes** in the above question, what are the perceived causes of food insecurity among students?

a)-----

b)-----

c)-----

8.3 What implications do you think food insecurity has on academic performance?

a)-----

b)-----

c)-----

8.4 What is your understanding of food insecurity at tertiary institutions?

8.5 Do you regard yourself a food insecure?

Yes	No
-----	----

8.6 What do you do as a student when you don't have enough money to buy food?

Ask other students/friend on campus	Tell ADO	Go for counselling	Report to SRC	Other
-------------------------------------	----------	--------------------	---------------	-------

If **Other** please specify.....

8.7 Do you know about the student food security programme in the university?

Yes	No
-----	----

8.8 If you answered **Yes**, how did you come to know about it?

Student notices	College counsellor	support staff	fellow student	lecturer	UKZN website	SRC	Other
-----------------	--------------------	---------------	----------------	----------	--------------	-----	-------

8.9 Are you currently on the student food security programme?

Yes	No
-----	----

8.10 Were you previously on the student food security programme?

Yes	No
-----	----

8.11 If you answered **Yes** to any of the two above questions, how did you benefit from the programme?

Food hamper	Voucher	Other form of food assistance
-------------	---------	-------------------------------

8.12 Are you aware that students can access food from the cafeteria by redeeming food vouchers?

Yes	No
-----	----

8.13 If residential catering was available, were meals where prepared for you, three times a day, would you sign up?

Yes	No	Maybe
-----	----	-------

8.14 If food security parcels/vouchers were given as an award and or bursary, I would be glad.

Yes	No	Maybe
-----	----	-------

8.15 If food parcels/vouchers were available, I would go and collect them.

Yes	No	Maybe
-----	----	-------

8.16 Do you know of any other programme/intervention in the university that addresses the problem of food insecurity among students?

Yes	No
-----	----

8.17 If you answered **Yes** in the previous question, please specify? -----

8.18. How did you come to know about it?

Student notices	College counsellor	support staff	UKZN website	Fellow lecturer,	SRC	Student	Other
-----------------	--------------------	---------------	--------------	------------------	-----	---------	-------

9 **Food access and food insecurity**

9.1 How much do you spend on food per month -----

9.2 Sources of income for purchasing food -----

9.3 Please respond according to the following rating scale:

1=strongly disagree 2= disagree 3=neutral 4=agree 5=strongly agree

- a. I have trouble choosing the correct foods when shopping-----
- b. Food is generally affordable at the supermarket-----
- c. The price of food influences me on whether I want to buy or not-----
- d. I know about healthy eating habits and I apply them-----
- e. I have enough to cook/eat-----
- f. Hunger affects my concentration/effectiveness as a student-----
- g. I have missed classes because I did not have food to eat-----

10 **Knowledge about institutional support**

Please respond according to the following rating scale:

1=strongly disagree 2= disagree 3=neutral 4= agree 5=strongly agree

- a. The university offers help to students who are in need of food.....
- b. I am aware that students receive help from the university when they are in need of food.....
- c. I can recommend someone to receive food assistance from the university.....
- d. I receive help from the university when I don't have enough money to buy food.....

11 Social stigma around food insecurity

No	Statement	Yes	No	Sometimes
1.	I am embarrassed to ask for food/food aid.			
2.	I am embarrassed to accept free food.			
3.	I am embarrassed to reveal that I cannot afford enough food.			
4.	It is shameful to reveal my poor economic background			
5.	Having no food compromises one's dignity.			
6.	I will rather sleep without food than receiving food aid/food parcels.			
7.	I will rather steal food than receiving food aid/food parcels.			
8.	Food security programme is the same as food aid/food parcels.			
9.	Lack of food diminishes one's self-esteem.			
10.	Lack of food is deprivation of the right to food.			

12 Experiences of food insecurity

No	Occurrence Questions	Yes	No
1.	In the past four weeks, did you worry that you would not have enough food?		
2.	In the past four weeks, were you not able to eat the kinds of foods you preferred because of a lack of resources?		
3.	In the past four weeks, did you have to eat a limited variety of foods due to a lack of resources?		
4.	In the past four weeks, did you have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?		
5.	In the past four weeks, did you have to eat a smaller meal than you felt you needed because there was not enough food?		
6.	In the past four weeks, did you have to eat fewer meals in a day because there was not enough food?		
7.	In the past four weeks, was there ever no food to eat of any kind because of lack of resources to get food?		
8.	In the past four weeks, did you go to sleep at night hungry because there was not enough food?		
9.	In the past four weeks, did you go a whole day and night without eating anything because there was not enough food?		

13 Number of meals per day under normal circumstances

Breakfast, lunch and supper	Breakfast and lunch only	Lunch and supper only	Breakfast and supper only	Only one meal per day

(Please tick in the appropriate box)

Appendix B: Academic staff questionnaire

Research Topic: Assessing Perceptions, Management and Impact of Food Security Interventions on the Academic Performance of Undergraduate Students at the University of KwaZulu-Natal.

This questionnaire consists of three sections: Biographic; experiences, perceptions and beliefs about food security; awareness about food security interventions in the University.

Please answer in the spaces provided. All data will be coded so that anonymity will be protected in any research papers and presentation that will result in this work. Your signature below indicates that you have understood the information about this study and consent to your participation and you may refuse to answer certain questions on the questionnaire and withdraw from the study at any time.

Signature -----

Date: -----

1. Sex of respondent

M	F
---	---

2. Discipline: -----

3. Position: -----

4. How long have you been teaching in the University? -----

Experiences, perceptions and beliefs about food security

5. Do you have cases of hunger or food problems reported to you by your students?

Yes	No
-----	----

5.1. If you answered **Yes**, how **often** do you have such cases? If you answered **No**, proceed to question **6**.

6.

Very often	Often	Sometimes	Not often
------------	-------	-----------	-----------

What do/would you recommend a student who reported that they were hungry/or did not have enough to eat?

7. What is your general understanding of food security?

8. Are you aware of the level of student's food insecurity in the university?

Yes	No
-----	----

9. Do you think food security is an issue at tertiary institutions such as UKZN?

Yes	No	Maybe
-----	----	-------

Awareness about food security interventions in the University

10. Are you aware of the student food security programme within the University?

Yes	No
-----	----

11. If your answer is **No** proceed to question **13**. If your answer is **Yes**, how did you come to know about the programme?

Student notices	College counsellor	Support staff	UKZN website	Fellow lecturer,	SRC	Student	Other
-----------------	--------------------	---------------	--------------	------------------	-----	---------	-------

If your answer is **Other**, please specify-----

12. Do you refer any students to the programme?

Yes	No
-----	----

13. Do you know of **any** other form of food assistance in the University that addresses the problem of food insecurity among students?

Yes	No
-----	----

14. If your answer is **No** proceed to question **16**. If your answer is **Yes**, please specify? -----

15. How did you come to know about the form of assistance intervention?

Student notices	College counsellor	Support staff	UKZN website	Fellow lecturer	SRC	Student	Other
-----------------	--------------------	---------------	--------------	-----------------	-----	---------	-------

If your answer is **Other**, please specify-----

16. Should there be programmes for food security at UKZN?

Yes	No	Maybe
-----	----	-------

17. What would you suggest as the best way of addressing the problem of food security among undergraduate students in the University?

Thank you!

Return to: Sabis@ukzn.ac.za

Appendix C: Key informants interviews and focus group guide



COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCES

School of Agricultural, Earth and Environmental Science (SAEES)
University of KwaZulu-Natal
Pietermaritzburg

Interview Guide

Research Topic: Assessing Perceptions, Management and Impact of Food Security Interventions on the Academic Performance of Undergraduate Students at the University of KwaZulu-Natal

Outline:

This document serves as an abridged version of some of the probable questions to be directed at the research participants or interviewees during the field work and data collection process. Methods of data collection will be primary as these interviews seek to cover the primary aspect of the study. The structure of the interview guide centres around five(5) major themes: impact of socio-economic factors on students' academic performance; perceptions of food security of students and staff and related stakeholders; factors influencing formation of food security programme at universities; implications of their role in addressing the problems of food insecurity; expectations of students in food security programme. The purpose is to draw a wide range of opinions and attitudes and experiences from the research subjects and to understand the context behind the answers given. In addition, this will enable the researcher to explore the research topic in detail and this will lead towards assessing the impact of food (in)security on the academic performance of students particularly in tertiary students and to arrive a relevant conclusion. Basically the interview questions will focus on the following groups.

Group 1: Interviews with the Coordinator/director/administrator for food security programme), in the University, Westville campus.

Group 2: Interviews with student support managers/heads of counselling, careers and development services, all campuses.

Group 3: Interviews with university senior management staff-Executive Deans for Teaching and Learning- all colleges.

Group 4: Interviews with selected Student Representatives Council (CRS) executive members-student services officer- all campuses.

Group 1: (Key informant interviews checklist of guiding questions for the Coordinator/director/administrator for FSP).

1. How would you define food security?
2. In your own opinion do you think food security is an issue at tertiary institutions such as UKZN?
3. Let us talk about the background and aim of the programme you are running
4. In your role as coordinator/director, what is your perception about the level or state of food security in the university?
5. How long the programme has been running for?
6. How is this programme running?
7. Are there any policies guiding your programme?
8. Who are the target groups and how do you identify them?
9. Do you collaborate with other sectors in the university and outside to address the problem of food security in the university? If yes, then how do you collaborate?
10. Who finances the programme? Are they internal or external or both?
11. In what ways do you think the programme is benefiting the beneficiaries?
12. In your own opinion do you think there is a relationship between academic performance and food insecurity?
13. Do you think that the programme is helping students to perform better academically? If yes how is it helping them?
14. What are the achievements of your programme?
15. Let's talk about the major challenges confronting your programme. What do you think are the major challenges affecting your operation in the university and do you think these can be remedied?
16. How do you think these challenges could be resolved?

Group 2: (Key informant interviews checklist of guiding questions for student support managers/heads of counselling, careers and development services).

1. What is your portfolio?
2. How long have you been working in the university?
3. What is your understanding of food security?
4. Do you think food security is an issue at tertiary institutions such as UKZN?
5. What do you think are the causes of food insecurity at tertiary levels?
6. Are you aware of the level of student's food insecurity in the university?
7. Are you aware of the UKZN student's failure rate?
8. Are you aware of any food security programmes within the university?
9. Have you ever referred any students to the programme/s?
10. Should there be programmes for food security at UKZN?
11. In your own view how should this work that is if you think we should have them; if you think we should not have them not why do you think there is no need for such programmes?
12. Do you think there is a relationship between academic performance and food insecurity?
13. How do the beneficiaries come to know about the programme?
14. What is the form of assistance given to beneficiaries?
15. What determines the form of assistance given to the beneficiaries?
16. Is there a limit to the food assistance given to them? What determines the limit?
17. How often is the food assistance given to students and what determines the criteria?

Group 3: (Key informant interviews checklist of guiding questions for senior management- Executive Deans for teaching and learning).

1. What is your understanding of food security at tertiary institutions?
2. What do you think about food insecurity status in the university?
3. What is your perception about the level or state of food security in the university?
4. Are there food security interventions in the university? If yes what are they?
5. Are you aware of the food security programme in the university? If you answered yes, how did you find out?
6. What are the policies guiding the programme in the university?
7. Who do you think are the target (beneficiaries) in the programme?
8. What is your view with regards to the relationship between food insecurity and academic performance?
9. What would you suggest as a remedy to solving the problem of food security in the university?

Group 4: (Key informant interviews checklist of guiding questions for selected Student Representatives Council members-student service officers).

1. Let us talk about your involvement with students' needs such as their socio-economic academic challenges. What are some of the economic challenges that university students face?
2. In your role as SRC member, how do you help students with such challenges?
3. Do you receive or attend to students with cases of hunger or food problems?
4. How often do you attend to such problems?
5. What do you do when you receive students with such a challenge?
6. What is your understanding of food security at tertiary institutions?
7. Are you aware about the food security programme in the university or on campus?
8. If your answer is yes, how did you come to know about it?
9. Do you know of any other food security intervention in the university?
10. If you answered yes, how did you find out about it?
11. Do you think that food intervention can help students perform better academically?
12. Give reasons for your answer

13. What would you suggest as the best way of solving the problem of food insecurity in the university?
14. What is your view with regards to the relationship between food insecurity and academic performance?

Group 5: Focus group discussions

(Checklist of guiding questions for Academic Development Officers-ADOs).

1. Let us talk about your involvement with students' needs such as their academic performance. What do students mostly complain about when they come for consultation?
2. As people involved with students' academic issues; what kind of issues do they mention as the causes for their poor academic performance?
3. If a student reports that they have food shortages or starvation? What measures do you take or how do you deal with the situation?
4. What is your understanding of food security?
5. Are you aware about the food security programme in UKZN? If your answer is yes, do you refer any students to the food security programme?
6. How did you find out about the programme?
7. Are you aware of any other food security intervention in the university? If so, what are they?
8. What would you suggest as the best ways of addressing food insecurity in the university?
9. In your own view do you think there is a relationship between food insecurity and poor academic performance? How so...?

Appendix D: Gate keepers permission



11 June 2015

Ms Stella Chewe Sabi

School of Agricultural, Earth & Environ Sciences

College of Agriculture Engineering and Science

Pietermaritzburg Campus

UKZN

Email: sabis@ukzn.ac.za

Dear Ms Sabi

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN) towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"Assessing Perceptions, Management and Impact of Food Security Interventions on the Academic Performance of Undergraduate Students at the University of KwaZulu-Natal".

It is noted that you will be constituting your sample by randomly handing out questionnaires as well as conducting interviews/focus group discussions with UKZN staff and students.

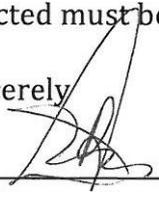
Please ensure that the following appears on your questionnaire/attached to your notice: • Ethical clearance number;

• Research title and details of the research, the researcher and the supervisor; • Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire; • gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using 'Microsoft Outlook' address book.

Data collected must be tr

Yours sincerely



----- e treated with due confidentiality and anonymity.

MR B POO

REGISTRAR (ACTING)

Office of the Registrar

Postal Address: Private Bag , Durban, South Africa

Telephone: +27 (0) 31 260 8005/2206 Facsimile: +27 (0) 31 260 7824/2204 Email: registrarOukzn.aoeza

Website: WWW.ukzn.ac.za

1910 - 2010

100 YEARS OF ACADEMIC EXCELLENCE

Edgewood

Howard College

Medical School

Pietermaritzburg

Westville

Appendix E: Ethical clearance



30 November 2015

Ms Stella Chewe Sabi 211514575
School of Agriculture, Earth and Environmental Sciences
Pietermaritzburg Campus

Dear Ms Sabi

Protocol reference number: HSS/1375/015D

Project Title: Assessing perceptions, management and impact of Food Security Interventions on the Academic Performance of Undergraduate Students at the University of KwaZulu-Natal

Full Approval – Expedited Application

In response to your application received on 25 September 2015, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shenuka Singh (Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

Supervisor: Dr Unathi Kolanisi
Academic Leader Research: Professor Onesimo Mutanga
School Administrator: Ms Marsha Manjoo

Humanities & Social Sciences Research Ethics Committee

Dr Shenuka Singh (Chair)

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Website: www.ukzn.ac.za

 1910 - 2010
100 YEARS OF ACADEMIC EXCELLENCE

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

Appendix F: Informed consent

UNIVERSITY OF KWAZULU-NATAL

SCHOOL OF AGRICULTURE, EARTH AND ENVIRONMENTAL SCIENCES

INFORMED CONSENT AND DELARATION FOR PARTICIPANTS

Dear Sir/Madam, my name is Stella Chewe Sabi and I am a full-time student at the University of KwaZulu-Natal registered for PhD in Agriculture (Food Security). I would like you to participate in a study titled “Assessing Perceptions, Management and Impact of Food Security Interventions on the Academic Performance of Undergraduate Students at the University of KwaZulu-Natal”. Therefore you will be required to answer the questions.

- Participation in this study is absolutely voluntary and the respondent is free to withdraw from the study at any time without any undesirable or negative consequences to him/her.
- Individual responses from audio recordings will be treated with maximum confidentiality and will be used only for the purpose of this study. In this regard, your identity will be coded during the analysis to preserve anonymity. All information will be destroyed when it is no longer needed.
- There will be no form of payment for participating in the study.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number: HSS/1375/015D).

In the event of any problems or concerns/questions you may contact Dr. Muthulisi Siwela or Professor Unathi Kolanisi who are the supervisors of the study at 033 260 5459 or siwelam@ukzn.ac.za; kolanisi@ukzn.ac.za respectively (School of Agriculture, Earth and Environmental sciences) or the UKZN Humanities & Social Sciences Research Ethics Committee.

Please express your full consent to participate in this research by writing your name and signing below.

Declaration:

I ----- have been informed about the study entitled “Assessing Perceptions, Management and Impact of Food Security Interventions on the Academic Performance of Undergraduate Students at the University of KwaZulu-Natal” by Stella Chewe Sabi.

I understand the purpose and procedures of the study.

I have been given an opportunity to answer questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (provide details).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557 - Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

I hereby provide consent to:

Audio-record my interview / focus group discussion YES / NO

Signature of Participant

Date

Appendix G: Confirmation of peer-review



02 October 2015

To. S. C. Sabi, U. Kolanisi, M. Siwela and D. Naidoo
Confirmation of peer-review

Article title: Investigating perceptions of food insecurity complexities in South African higher learning institutions: a review.

This letter confirms that the above-mentioned article appearing in the proceedings for the University of KwaZulu-Natal's - 9th Annual Teaching & Learning in Higher Education Conference 2015 (TLHEC 2015), hosted by the University Teaching & Learning Office (UTLO) was reviewed. In addition,

- The abstract was double-blind peer reviewed.
- The full paper was reviewed by a member of the editorial board for the proceedings.

Dr Jaya Naidoo
TLHEC 2015: Conference Proceedings Editor

Prof Sarah Bansilal
TLHEC 2015: Conference Proceedings Co-Editor

Rubby Dhunp

Dr Rubby Dhunp TLHEC 2014: Conference convenor and chairperson

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Telephone: +27 (0) 31 260 3002 Facsimile: +27 (0) 31 260 3360 Email: utio@ukzn.ac.za, Website: www.ukzn.ac.za

Appendix H: Publication acceptance

JOURNAL OF CONSUMER SCIENCES



26 January 2018

SC Sabi

School of Agricultural, Earth and Environmental Sciences,
University of KwaZulu-Natal,
Private Bag X01,
Scottsville 3209,
Pietermaritzburg,
South Africa

Dear Sc Sabi

It is my pleasure to inform you that the article you submitted to the Journal of Consumer Sciences previously the Journal of Family Ecology and Consumer Sciences titled: **Complexities of Food Insecurity at the University of KwaZulu-Natal, South Africa: a Review**, by **S. C. Sabi , M. Siwela , U. Kolanisi and D.K Naidoo** has been accepted for publication. This article will be considered for publication in the *Special Edition on Food and Nutrition challenges in Southern Africa*.

The final article has been submitted to an independent Plagiarism Journal Administrator and considered publishable by the journal. You will be receiving correspondence from the Editorial Administrator regarding final sign off of the article as well as an invoice for page fees to be paid before publication of the article can be finalised. Final sign off of the article will be requested. Please note that it is the responsibility of the authors to ensure that the title and author information in the article is correct as well as figures and diagrams correctly captured. It is also important that the version to be published is checked.

Looking forward to future submissions

Kind regards

Prof Elizabeth Kempen

A handwritten signature in black ink, appearing to read "Elizabeth Kempen".

Editor
Journal of Consumer Sciences (previously the Journal of Family Ecology and
Consumer Sciences)