



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

**Cooking competence of white young adults
residing in Tshwane, South Africa**

LOUÉLLE RYAN (04426789)

Dissertation

Master's in Consumer Science (Food Management)

University of Pretoria

Supervisor: Prof. G.E. du Rand

Co-supervisor: Dr. A.T. Viljoen

March 2023



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residing in Tshwane, South Africa**

by

Lou  lle Ryan

Submission in partial fulfilment of the requirements for the degree of

Master's in Consumer Science: Food Management

in the

Faculty of Natural and Agricultural Sciences
Department of Consumer and Food Sciences

UNIVERSITY OF PRETORIA

Supervisor: Prof. G.E du Rand

Co-supervisor: Dr. A.T. Viljoen

March 2023

DECLARATION

I, Lou  lle Ryan (04426789), declare that this dissertation, which I hereby submit for the degree of Master's in Consumer Science: Food Management at the University of Pretoria, is my work and has not been submitted by me to any other tertiary institution for a degree.



Lou  lle Ryan

March 2023

DEDICATION

*Not to [me], but to Your name give glory, because of your loving kindness,
because of Your truth and faithfulness.*

Psalm 115:1

SUMMARY/ABSTRACT

Title & Author: **Cooking competence of white young adults residing in Tshwane, South Africa**

by

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Faculty: Faculty of Natural and Agricultural Sciences

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This study investigated the cooking competence of white young adult couples residing in Tshwane, South Africa. The study aimed to explore and describe the cooking knowledge and skills of young couples to gain insight and understanding into their cooking competence. Cooking competence was conceptualised as cooking knowledge and cooking skills. Cooking knowledge comprises academic, perceptual and conceptual knowledge dimensions and their related indicators and cooking skills comprise mechanical and planning dimensions and their related indicators.

A decline in cooking competence has become a global concern, and young adults do not seem to engage in food preparation anymore. It can be attributed to factors such as the decrease in cooking competence learning in educational institutions, the change in lifestyle and societal norms and the ever-increasing time deficit crisis. These attributed factors consequently led to the consumption of Ultra-Processed Foods (UPFs), which is associated with health concerns and contributes to the global obesity epidemic. For this qualitative study, a conceptual framework for cooking competence was developed.

From the literature reviewed, cooking competence and its dimensions were conceptualised, and a conceptual framework was compiled from which the study's objectives were formulated. The conceptual framework guided this study into exploring and describing these couples' cooking knowledge and skills according to their cooking competence dimensions. This qualitative study used an ethnographical strategy of enquiry, where data were gathered

through visual ethnography in the form of semi-structured interviews, observations, personal documentation (i.e., food diaries), and photo-elicitation. The interviews were transcribed, and the data were analysed and interpreted using the qualitative computer data analysis program *Atlas.ti* 8.

The findings concurred with the literature in that there is a depreciation of teaching cooking competence-related subjects, and a change in lifestyle and societal norms was noted. Intergenerational transmission of cooking knowledge and skills is still present. The time deficit crisis was prevalent amongst all participants, but especially amongst the young family participants and was a significant factor influencing participants cooking competence. It was revealed that the participants were high consumers of UPFs, and young families, in particular, seemed to be high consumers of these foods. This can be linked to the decline in cooking competence.

In exploring the participants cooking competence for this study, it was identified that participants had different combinations of indicators of each of the cooking competence dimensions, which formed each participant's unique set of cooking competencies, each within their own set of external factors. External factors included boundaries participants found themselves in and psycho-social factors such as intra-household dynamics. Furthermore, it was revealed that the participants' cooking knowledge and skills were interrelated and interdependent and that cooking competence forms part of a component of food literacy and contributes to an individual's food literacy.

Based on the findings, an adapted cooking competence dimensions table was developed, and a new conceptual framework was proposed.

Keywords:

Cooking competence, cooking skills, cooking knowledge, young adult couples, qualitative research, visual ethnography, photo-elicitation.

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who gave me perseverance and determination
to complete this study (James 1:2-4).*

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LIST OF ABBREVIATIONS

ADA	American Dietetic Association
CC/s	Cohabiting Couple / Cohabiting Couples
C.K.	Cooking knowledge
C.S.	Cooking skills
doc	Microsoft Word document
FD/s	Food Diary / Food Diaries
GDP	Gross Domestic Product
HSK 812	Consumer studies module
Lim. Res.	Limited resources
M.	Mechanical skills
NCDs	Noncommunicable diseases
NICUS	The Nutritional Information Centre of the University of Stellenbosch
NMN 814	Research Methodology module
NRF	National Research Foundation
NYP	National Youth Policy
P.	Perceptual knowledge
PDF	Portable Document Format
PGB 410	Research methodology module
PGB 420	Research project module
RTF	Rich Text Format
SAARF	South African Audience Research Foundation
TVET	Technical and Vocational Education and Training
UK	United Kingdom
UPF/s	Ultra-processed food / Ultra-processed foods
USA	United States of America
VBF 811	Consumer facilitation module
VDS 210	Food commodities and evaluation preparation and cultural eating patterns module (1 st semester)
VDS 221	Food commodities and evaluation preparation and cultural eating patterns module (2 nd semester)
VET	Vocational Education and Training
WHO	World Health Organization
YC/s	Young Couple / Young Couples
YF/s	Young Family / Young Families

Chapter 1: INTRODUCTION

The study in perspective

This chapter aims to provide a contextual overview of the research background to highlight and lead to the research problem and rationale for this study. The research design and methodology will be briefly discussed, followed by the significance and delimitations set out for the study. Definitions of terms and concepts and additional notes are provided. The chapter will conclude with a brief overview of the literature review, conceptual framework, methodology, results and discussion and conclusion chapters.

1.1 BACKGROUND

It has become evident that cooking competence impacts dietary health positively (Asher, Jakstas, Wolfson, Rose, Bucher, Lavelle, Dean, Duncanson, Innes, Burrows, Collins & Shrewsbury, 2020; Lavelle, Bucher, Dean, Brown, Rollo & Collins, 2020). Unfortunately, globally, there is evidence of an ever-increasing decline in cooking knowledge and skills prevalent in young adults (Lavelle, Benson, Hollywood, Surgenor, McCloat, Mooney, Caraher & Dean, 2019; Plessz & Étilé, 2019; Slater, 2013; Slater, Falkenberg, Rutherford & Colatruglio, 2018). Researchers have found the following as contributing factors.

Research has shown that people obtain crucial cooking competencies in school subjects, like home economics (Autio, Kortessalmi, Ranta, Sekki & Kylkilahti, 2021). However, regardless of the evidence that home economic education contributes to a person's cooking competence into adulthood and provides better diet quality, the devaluation of cooking competence subjects by modern society and the presumption that it is a female skill that negatively stereotypes women, contributed to the depreciation of cooking competence programs in schools across the globe (Lichtenstein & Ludwig, 2010; Ronto, Ball, Pendergast & Harris, 2017; Slater, 2013; Worsley, Wang, Yeatman, Byrne & Wijayaratne, 2016).

Secondly, the change in lifestyle and societal norms over the last few decades has seen people having longer working hours and busy schedules and women becoming more engaged in employment. This contributes to the decline in cooking competence. Additionally, it not only amplifies the perception of time scarcity but parents, in particular, have time constraints and are becoming too tired to involve their children in the food preparation process. Subsequently, children have become less involved in traditional kitchen tasks, which are no longer practised and taught, which used to be the natural way to obtain cooking competence. It also contributes

to the diminishment of traditional food preparation being taught (Lai-Yeung, 2015; Lavelle *et al.*, 2019; Sharif, Rahman, Zahari & Abdullah, 2018; Slater, 2013).

The perceived scarcity of time, especially regarding food preparation and poor cooking competence abilities, have given rise to the need for food products that save time and effort. It has created a market for the food industry, that reacted to the consumer demand for food products that are quick and easy to prepare and require minimal cooking competencies and alleviate cooking time pressures. Subsequently, this leads to an increase in Ultra-Processed Food (UPF) consumption, especially among young adults, who are high consumers of these products (Bielemann, Motta, Minten, Horta & Gigante, 2015; Contini, Boncinelli, Gerini, Scozzafava & Casini, 2018; Étilé & Plessz, 2018; McGowan, Caraher, Raats, Lavelle, Hollywood, McDowell, Spence, McCloat, Mooney & Dean, 2017; Van der Horst, Brunner & Siegrist, 2011; Wahlen, Van der Horst & Pothoff, 2016).

The UPF products are energy-dense with low dietary value. Accumulating evidence suggests that it can now be recognised that the consumption of UPFs is detrimental to one's health, and a significant contributor to the global obesity epidemic and diet-related NCDs (Aguayo-Patrón & Calderón de la Barca, 2017; Monteiro, Cannon, Moubarac, Levy, Louzada & Jaime, 2018; Rauber, Chang, Vamos, Louzada, Monteiro, Millett & Levy, 2021; Willett, Rockström, Loken, Springmann, Lang, Vermeulen, Garnett, Tilman, DeClerck, Wood, Jonell, Clark, Gordon, Fanzo, Hawkes, Zurayk, Rivera, de Vries, Majele Sibanda, Afshin, Chaudhary, Herrero, Agustina, Branca, Lartey, Fan, Crona, Fox, Bignet, Troell, Lindahl, Singh, Cornell, Srinath Reddy, Narain, Nishtar & Murray, 2019; World Health Organization, 2015). These factors are seen in developed and developing countries, such as South Africa.

The subjects, Family Ecology and Consumer Science, are high school electives and only 0.2% of millennials (aged 23-38)¹ attending university choose it as a field of study in South Africa (Statistics South Africa, 2018). Besides increasing students' cooking competence, it also offers additional benefits in developing entrepreneurial skills, which creates job opportunities in a country with a high unemployment rate. Unfortunately, it is further encumbered (especially in public schools) by insufficient infrastructures, such as the lack of water and electricity, food preparation equipment, a shortage of subject teachers and a lack of funding from the government, which is reluctant to provide support for practical subjects (Koekemoer & Booyse, 2013; Ngwenya & Shange, 2019).

Although the traditional view of household responsibilities is still socially perceived as the responsibility of women, lifestyle- and social norm changes are prevalent within the South

¹ Note that data was collected during 2015 and 2016, therefore millennials were referenced in the study as 22 to 38 years old.

African setting. This is also the case with two working parent households and the perceived time constraints towards food preparation. Furthermore, the abatement of traditional home food preparation, as well as the mentioned factors, all give rise to the ease and convenience of the UPF market (Erzse, Goldstein, Tugendhaft, Norris, Barker & Hofman, 2021; McKay & Subramoney, 2017; Smit, Kassier, Nel & Koen, 2017; Van Zyl, Steyn & Marais, 2010). The UPF industry in South Africa was an estimated ZAR 30 billion in 2018 and it is predicted to reach ZAR 54 billion by 2026, with young adults aged 20 to 35 responsible for the highest UPF market share (Abel & Roshan, 2019).

Obesity is a considerable health problem in South Africa and the country ranks as one of the top 10 countries with the highest obesity rates, costing the local economy approximately ZAR 701 billion annually (Discovery Vitality, 2017; Van Vollenstee & Van der Merwe, 2021). It has been found that urbanised South African diets have poor dietary value and an estimated 51% of the total deaths in South Africa are linked to NCDs, with diabetes ranking 5th as the leading cause of death in young white adults, aged 15 to 34 (Statistics South Africa, 2020; World Health Organization, 2020).

Increased cooking competence is linked with better dietary quality and lower consumption of UPFs. It is, therefore, vital to implement any method to reduce the ever-increasing global obesity epidemic and the promotion of home food preparation is one approach to combat this issue (Hollywood, Surgenor, Reicks, McGowan, Lavelle, Spence, Raats, McCloat, Mooney, Caraher & Dean, 2018; Lavelle, McGowan, Hollywood, Surgenor, McCloat, Mooney, Caraher, Raats & Dean, 2017; Taillie & Poti, 2017; Utter, Larson, Laska, Winkler & Neumark-Sztainer, 2018; Wolfson, Lahne, Raj, Insolera, Lavelle & Dean, 2020a; Wolfson, Leung & Richardson, 2020b). Therefore, cooking competence should not be disregarded as a feasible intervention to combat the obesogenic crisis of this age. However, the cooking competence of South Africans is still unclear.

Therefore, this study aims to explore and describe the cooking knowledge and skills of white young adult couples residing in Tshwane, South Africa, to gain insight and understanding into their cooking competence.

1.2 PROBLEM STATEMENT

Research agrees that young adults lack cooking knowledge and skills (Lavelle *et al.*, 2019; Plessz & Étilé, 2019; Slater, 2017; Slater *et al.*, 2018). Contributing factors include the decrease in learning cooking competence in educational institutions, the change in lifestyle and societal norms and the ever-increasing time deficit crisis, which all subsequently lead to

the increase of UPF consumption, impacting health negatively and contributing to the global obesity epidemic (Slater, 2013).

Internationally, much research has been conducted on the cooking knowledge or skills of various populations and age groups, such as children, adolescents and university students (Brennan, Lavelle, Moore, Dean, McKinley, McCole, Hunter, Dunne, O'Connell, Cardwell, Elliott, McCarthy & Woodside, 2021; Halkier, 2021; Hollywood *et al.*, 2018; Neumann, 2018; Wahlen *et al.*, 2016). However, limited research has been conducted specifically on cooking competence. This lack of research might be due to the much-debated definition of cooking competence and its key concepts, as there is a lack of a clear and coherent definition and its related dimensions and indications, which makes it challenging to conceptualise (Halkier, 2021; McGowan *et al.*, 2017).

In South Africa, studies have been done on the food practices of young adults (De Kock, 2019; Dlamini, 2015; Stowe & Venter, 2020). However, there is limited research on the cooking competence of South African young adults, specifically young couples.

The high consumption of UPFs among young adults is concerning, as not only does it seem to have progressively taken the place of family home food preparation and caused a depreciation of traditional eating habits and cultural food diversity over the last few decades, but young adults have grown up in a convenience food environment that creates a dependency on UPFs into adulthood. It contributes to a decline in cooking competence, which is associated with low dietary value and poor health (McKay & Subramoney, 2017; Wahlen *et al.*, 2016).

This research will aim to contribute new information to address the gap in South African literature and to understand young adult couples' cooking competence better. Therefore, this study aims to explore and describe the cooking competence, in terms of the cooking knowledge and skills, of young adult couples living in Tshwane, South Africa.

1.3 RATIONALE FOR THIS STUDY

From the background overview, it is seen that the food environment of today is complex. Rosas, Pimenta, Leal and Schwarzer (2019:2), state that: "... individuals' education and empowerment are needed to transform competencies and behaviours to navigate within these food systems towards healthier dietary choices ...". Globally, the importance of implementing education towards nutrition, diet, food knowledge and skills are emphasised (Hemmingsen, 2017; World Health Organization, 2021). Furthermore, in August 2021, the World Health

Organization (WHO) recommended actions for governments to prevent and manage obesity (World Health Organization, 2021).

In South Africa, the lack of knowledge and poor diets contribute to overweight and obesity (National Department of Health, South Africa, 2015). Mrs Angie Motshekga, Minister of Basic Education South Africa, states there is a commitment to behavioural change that addresses challenges like obesity, which is increasing amongst school children (National Department of Health, South Africa, 2015).

By exploring and understanding young adult populations' cooking competence, this study can contribute to the South African obesity intervention campaigns, by replicating this study and using the conceptual framework as an example to apply to other population groups within South Africa.

The study can provide the information needed to educate, empower, and transform individuals' competencies and food behaviours into healthier dietary choices, essential to navigating today's complex food environments, as Rosas *et al.* (2019), stated. A contribution to new information about South Africans' diets and foods can be made by giving new insight into the South African context. It can add to behavioural change and action programmes, by improving cooking skills recommended by the WHO for obesity prevention and management. Furthermore, a contribution can be made to education and training material, to combat the lack of nutritional knowledge and poor diets responsible for overweight and obesity in South Africa. In addition, it can contribute towards training material and recommendations in a school environment, to assist in the behavioural change relating to obesity of South African youth.

Furthermore, the study will contribute to the literature regarding South African adults' food preparation practices, of which very little information is available. It will provide information regarding the food consumption and preparation practices of young adults, thereby addressing aspects of healthy eating and food practices of young adults and reflecting on the nutritional status of young people.

This study is unique in selecting data-collecting methods to obtain an in-depth view of young adults' cooking competence. Various cooking competence (including cooking knowledge and skills) studies have been measured quantitatively and have collected data through surveys and questionnaires (Bertrand, Crerar & Randall Simpson, 2018; Lavelle *et al.*, 2020; Martins, Machado, Louzada, Levy & Monteiro, 2020). Pre- and post-intervention surveys and questionnaires, cooking intervention programmes, focus groups and interviews were used as mixed-method studies (Lavelle *et al.*, 2019; Luongo, Tucker, Hutchinson & Dhaliwal, 2018;

Van Kesteren & Evans, 2020). Pure qualitative studies made use of observations, focus groups, cooking interventions, participatory classroom exercises, in-depth semi-structured interviews, or a combination of these (Brennan *et al.*, 2021; Halkier, 2021; White, Colby, Franzen-Castle, Kattelman, Olfert, Gould, Hagedorn, Mathews, Moyer, Wilson & Yerxsa, 2018; White, Hagedorn, Waterland, Barr, Famodu, Root, White, Colby, Franzen-Castle, Kattelman & Olfert, 2019). However, few studies have used ethnographic data collecting methods (Janhonen, Torkkeli & Mäkelä, 2018; Johnson, 2020).

Not only globally, but also in South Africa, there is limited research available about young adults' cooking competence. The rationale for this study lies in the fact that this study will be adding to the theory and practical application of cooking competence in a South African context. What is happening within the South African context regarding white young adults' cooking competence is unknown. The study will contribute to the knowledge gap, as the first study to develop a conceptual framework for cooking competence in the South African context. Therefore, the conceptual framework can be used as a blueprint for conducting similar studies in the future, on different age and ethnic groups within South Africa.

This study is part of a comprehensive research project investigating adults' food environments, food practices and dietary intakes in Tshwane, South Africa (National Research Foundation grant no 93743).

This study aimed to explore and describe young adult couples', (aged 22 to 35) residing in Tshwane, South Africa, cooking competence in terms of cooking knowledge and skills. To the researcher's knowledge, this is the first study conducted on the cooking competence of white young adult couples in Tshwane, South Africa. Therefore, by exploring the cooking knowledge and skills of white young adult couples, to gain insight and understanding into their cooking competence, will contribute to the limited knowledge available on this topic in South Africa.

Based on this motivation, the research aims and objectives were formulated for this study.

1.4 RESEARCH AIMS AND OBJECTIVES

From the research problem and rationale stated earlier, the study aims to explore, understand, and describe the cooking competence of white young adult couples residing in Tshwane, South Africa, in terms of their cooking knowledge and skills.

Research objectives:

OBJECTIVE 1: To explore and describe the cooking competence of white young adult couples living in Tshwane, South Africa.

Sub-objective 1.1: To explore and describe the cooking knowledge of white young adult couples living in Tshwane, South Africa, according to the cooking competence dimensions of:

- Academic knowledge
- Perceptual knowledge
- Conceptual knowledge

Sub-objective 1.2: To explore and describe the cooking skills of white young adult couples living in Tshwane, South Africa, according to the cooking competence dimensions of:

- Mechanical skills
- Conceptual skills

1.5 RESEARCH DESIGN AND METHODOLOGY

In this explorative and descriptive study on the cooking competence of white young adult couples, a qualitative research approach was followed. An ethnographical strategy was selected as being the most appropriate for this study. Using an ethnographical strategy, the researcher could capture data in “real-life” situations (Berg, 2008:934). The findings were discussed and interpreted against the developed conceptual framework on which the research’s objectives are based.

For this qualitative study, the researcher was involved in the data collection procedure and, therefore, part of the data collecting techniques (Schurink, Schurink & Fouché, 2021).

Data were collected through visual ethnography, personal documentation of food diaries (FDs) and photo-elicitation. For the photo-elicitation, participants provided photographs of their FDs and the researcher used an independent recipe and image as a stimulus technique. Other data collection methods included semi-structured interviews and observations (Creswell & Creswell, 2018:188). Furthermore, the data collection process included three contact sessions and a pilot study. Each of these data collecting techniques and processes is discussed in detail in **Chapter 4**.

Considering the study's objectives, the sample was chosen according to the set-out criteria and comprised nine white young adult couples. Non-probability sampling techniques were used, because the members within the population were unknown to the researcher, as the participants selected do not represent the entire population (Strydom, 2021). A small group of participants who best represented the population criteria were purposefully selected (Strydom, 2021). The data analysed were captured and transcribed, before being coded and categorised. *Atlas.ti 8*, a computer-based software program for qualitative data analysis, assisted with transcribing the audio recordings and coding.

1.6 CONCEPTUAL FRAMEWORK

A conceptual framework was developed for cooking competence based on existing literature, as there is uncertainty about what the concept entails in academia. The conceptual framework will be discussed in **Chapter 3**.

1.7 SIGNIFICANCE OF THE RESEARCH

The significance of this research study lies in the fact that there is a lack of theory on cooking competence and relatively limited information on the cooking competence of young adults in general. Comparatively, no information is available on young adult couples of white ethnicity residing in Tshwane, South Africa.

In the South African context, limited research has been done on the general cooking competence of the population. Cooking deskilling is prevalent in South Africa and due to the dual-parent working households, cooking skills are not intergenerationally transferred (Erzse *et al.*, 2021; Smit *et al.*, 2017; Van Zyl *et al.*, 2010). The time constraints are coequal with dual-parent working households and the management of these is not being taught in a school setting anymore, as home economics is no longer a compulsory elective. Not being taught this by either the family or schools, due to family lifestyle changes and lack of school training, means that cooking deskilling takes place and people lack cooking skills. With increased reliance on UPFs, these changes also render cooking skills unnecessary. Consequently, the reliance on UPFs is associated with an increase in weight and contributes to the global obesity epidemic.

Therefore, this study explores the cooking competence of white young adult couples residing in Tshwane, South Africa-

1.8 DELIMITATIONS OF THE STUDY

The delimitations for this research study included that participants must reside in the Tshwane metropolitan district in the Gauteng province, South Africa. Potential participants had to meet the following criteria:

- South African nationality;
- aged between 22 and 35;
- Caucasian;
- in a relationship (married or cohabitating);
- living together in their own apartment or house (not residing with parents);
- progressed on from the '*student*' status;
- entered the workforce; and,
- responsible for their own food preparation and consuming the food they prepare.

1.9 DEFINITIONS OF TERMS AND CONCEPTS

A list of terminology and its definitions defined explicitly for this study can be seen in **Table 1.1**. The terminology is arranged in alphabetical order. Important concepts and terms are used throughout the study, defined in **Table 1.1** below, for clarity and understanding.

TABLE 1.1: LIST OF DEFINITIONS OF TERMS AND CONCEPTS

TERM OR CONCEPT	DEFINITION	SOURCES
Academic knowledge	Refers to knowledge obtained without direct experience, and it is the taught knowledge that enhances an individual's understanding of a task.	(Short, 2002:103)
Banting	Professor Tim Noakes, advocates a low-carbohydrate, high-fat diet, referred to as the 'Banting' diet.	(Noakes, Douglas & Allan, 2017:17)
Conceptual knowledge	Also known as sophisticated perceptual knowledge. It is a complex cognitive capability of visualising the whole cooking process before anything is physically executed.	(Short, 2002:23, 97)
Cooking competence	Cooking competence is characterised as a combination of cooking knowledge and cooking skills.	(Ternier, 2010)
Cooking deskilling	Braverman's theory of "deskilling" is applied to the home-cooking environment and is referred to as culinary or cooking deskilling.	(Braverman, 1998: xiii; Short, 2003)
Cooking knowledge	A set of academic, perceptual and conceptual knowledge. Knowledge is a cognitive ability that individuals obtain through their own experiences and reasoning abilities. It is also externally taught to develop an understanding and awareness of a specific topic or subject matter.	(Alcance, 2018; Merriam-Webster, n.d.; Short, 2002:23-24)

TERM OR CONCEPT	DEFINITION	SOURCES
Cooking skills	Apply an individual's cooking knowledge and involve a task-centred approach to practical skills (mechanical and planning skills) required in the food preparation process.	(Alcance, 2018; Short, 2003)
Diet enlightenment trend	The 'enlightened' food trend is where people are moving away from weight-loss focussed eating and moving towards food as nutrition and overall wellness, taking control of their own health and not being dependent on experts, which is enabled and enhanced by access to technology. People are focussing instead on natural produce and personal views, feelings and experiences concerning food.	(Cronin, 2016)
Enculturation	"... Enculturation refers to the entire incidental learning that occurs through imitation of elders and others ..." Segall,1979:187.	(Viljoen, 2009:15).
Fragmentation of the consumer's mind trend	A trend in personal views, feelings and experiences towards health and nutritional choices that have emerged due to two things. Firstly, the loss of trust in expert advice regarding health and nutrition, the ease of access and the vast amount of information obtained through technology.	(Cronin, 2016; Mellentin, 2015)
Free-from ingredients trend	The dietary movement towards using alternative foods like gluten-free, minimally processed foods, preservative and additive-free.	(Cronin, 2016; Mellentin, 2015)
Lacto-fermented sub-trend	Probiotics and 'cultured' products are supposed to rebalance one's gut health, although scientific research questions if these probiotics in the products make a difference.	(Cronin, 2016)
Mechanical skills	The actual physical food preparation activities.	(Short, 2003)
Noncommunicable diseases (NCDs)	"... Noncommunicable diseases (NCDs), such as cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases, are the leading global cause of death and are responsible for just over 70% of deaths worldwide. These NCDs share key modifiable behavioural risk factors like tobacco use, unhealthy diet, lack of physical activity and the harmful use of alcohol, which in turn lead to overweight and obesity, raised blood pressure and raised cholesterol and ultimately disease ...".	(World Health Organization, 2020:1)
NOVA food group classification	"... NOVA classifies all foods and food products into four groups according to the extend and purpose of the industrial processing they undergo. It considers all physical, biological and chemical methods used during the food manufacturing process, including the use of additives ..."	(Monteiro, Cannon, Levy, Moubarac, Louzada, Rauber, Khandpur, Cediel, Neri, Martinez-Steele, Baraldi & Jaime, 2019: 2)
Perceptual knowledge	A secondary, tacit knowledge determined through former practice and experiences. It asks, 'what is going on?' and creates the ability to execute the required task. It also involves the 'knowing how' relating to prior understanding of a task's complexity or difficulty level, perception and sensory experiences.	(Merriam-Webster, n.d.; Short, 2002:23-24, 96)
Planning skills	The coinciding food preparation cooking practices and tasks that need to be managed.	(Halkier, 2021)
Socialisation	It is the teaching of inculcation norms and customs by, for example, parents, by which culturally valued norms are passed on from one generation to the next.	(Viljoen, 2009:15)
Ultra-processed foods (UPFs)	According to the NOVA food group classification, Ultra-processed foods (UPFs) comprise convenient (ready-to-eat), pre-prepared and ready-to-heat foods. It also includes take-away fast food and other 'shelf-stable' foods.	(Monteiro <i>et al.</i> , 2019; Slater <i>et al.</i> , 2018)
Whole dairy trend	Dairy is considered a natural and whole food and particularly younger people are consuming full-fat dairy products, which are considered a healthier option than their lower-fat counterparts.	(Mellentin, 2015)
Young adult couples	Millennials aged 22 to 35 years are demarcated into the family life stages of young couples and families residing in Tshwane, South Africa.	(SAARF, 2013; Stedall & Venter, 2016:315)

1.10 PRESENTATION AND OUTLINE OF THE STUDY

This chapter describes how the research was developed and administered. A brief description of the successive chapters and structure is given to introduce this dissertation. These chapters were created to form a comprehensive arrangement of the study as follows:

Chapter 2 provides a comprehensive literature review on cooking competence and its key concepts, dimensions and indicators that contributes to the compilation of the conceptual framework of **Chapter 3**. It further conceptualises the white young adult couples residing in Tshwane, South Africa and identified the white young adults for this study.

Chapter 3 justifies the use of a conceptual framework for this qualitative study. A cooking competence dimensions table was created from the reviewed literature in **Chapter 2**. The conceptual framework was developed from this table, which guided the study and provided a visual representation. The conceptual framework formulated the research aims and objectives for this study.

Chapter 4 describes the ethnographical strategy of inquiry chosen as this dissertation's research design. The researcher's role as a research instrument, the research setting and selection criteria for participation, along with the qualitative data collection techniques are discussed. The data collection process is explained, and the data analysis and interpretation are validated. The chapter concludes with the ethical considerations for the research.

Chapter 5 presents the findings of the study and discuss and interprets these from the qualitative data analysis, according to the study's research aims and objectives. This chapter refers to **Addendum C**, which shows the personal documentation of FD recipes, with accompanied photographs taken by the participants. These are discussed together with the findings.

Chapter 6 is the final chapter of the study and derives conclusions from the key findings. It reflects, evaluates, and states the significance of the study. The findings are summarised, and an adapted cooking competence dimensions table is presented. A concluding summary of the cooking competence of white young adult couples residing in Tshwane, South Africa is given, and a conceptual framework based on the findings are proposed. Furthermore, the study's contribution to the research field is presented and the methodological reflections are made. The trustworthiness of the study is discussed and acknowledgements of the limitations of the study are made. The chapter concludes with recommendations for future investigation and a closing summary.

1.11 ADDITIONAL NOTES

- An adapted version of the Harvard referencing style was used, in line with the referencing guidelines of the Department of Consumer and Food Sciences, University of Pretoria.
- Inverted commas were used to separate or emphasise specific terms throughout the study.
- Direct quotations from transcriptions in **Chapter 5** are highlighted in a different shade and indicated in **bold** and *italics* to differentiate and not create confusion from the rest of the text.
- Referring to young adult couples only refers to the participants in this study. Due to the qualitative nature of this study, the study sample cannot be generalised to the larger population.
- Abbreviations were written in full at first mention. After that, only the abbreviations are used.
- A list of traditional foods (local and international) referred to was used throughout the study can be viewed in **Addendum H**. Reference to the traditional food terminology list is marked with a “†” symbol.
- A bibliography list of references referred to during the study can be viewed in **Addendum L**.
- The research outputs of this study can be viewed as **Addendum J**.
- The study has been language edited and proofread by an accredited company and technically edited by a proofread and technical expert. The language and technically edited declarations can be viewed as **Addendum K**.

1.12 CONCLUDING PARAGRAPH

The purpose of this chapter was to provide an introductory outline of the study to follow. A background overview was provided to introduce the problem of the study, followed by the problem statement and rationale for conducting the study. The aims and objectives were presented, followed by a brief overview of the research design and methodology allocated to the study. The steps taken in developing a conceptual framework were introduced, followed by the significance- and delimitations set out for the study. The chapter concludes with the outline of the study and additional notes. The following chapter comprehensively reviews the literature from which the conceptual framework was developed.

Chapter 2: LITERATURE REVIEW

Conceptualisation of the key concepts

This chapter will review the literature to conceptualise the concept of cooking competence and its key concepts, dimensions and indicators. It also aims to provide an overview of the literature, to introduce and justify the conceptual framework developed for this study, which is set out in **Chapter 3**.

This research study aims to gain insight and understanding into the cooking competence of white young adults residing in Tshwane, South Africa.

2.1 CONCEPTUALISING COOKING COMPETENCE

Competence has been described as a *fuzzy concept* in various research fields since confusion exists regarding its definition (Le Deist & Winterton, 2005; Moore, Cheng & Dainty, 2002). Therefore, it is no surprise that inconsistencies exist regarding the definition of cooking competence in consumer food-related research studies (Halkier, 2021; McGowan *et al.*, 2017). After reviewing consumer food-related literature, it was found that there is a vast amount of cooking competence (i.e., cooking skills and knowledge) research and authors who refer to cooking competence in their research without defining, describing or explaining these concepts (Contini *et al.*, 2018; Corcoran, 2018; Fisher, Nicholas & Marshall, 2011; Lai-Yeung, 2015; Luongo *et al.*, 2018; Lyon, Colquhoun & Alexander, 2003; Marklinder & Nydahl, 2021; Moreau, Plourde, Hendrickson-Nelson & Martin, 2015; Myeza, Selepe & Shongwe, 2015; White *et al.*, 2018; White *et al.*, 2019). Therefore, there is no clear consensus on the definition of cooking competence and its key concepts, dimensions, and indicators, making it difficult to conceptualise. Next follows a brief discussion on what competence as a concept means.

2.1.1 What is competence?

The denotative meaning of competence is “... The quality or state of having sufficient **knowledge**, judgment, **skill**, or strength (as for a particular duty or in a particular respect) ...” and “... having the **necessary ability** or **knowledge** to do something successfully ...” (Merriam-Webster, n.d.; Rhodes University, 2010:238). Le Deist and Winterton (2005:29) explore the varying usage of competence in their research article on exploring competence. They suggest that “... it is impossible to identify or impute a coherent theory or to arrive at a definition capable of accommodating and reconciling all the different ways that the term is used

...”. One of the causes of not being able to give one *coherent* definition of competence, is that it has been used in numerous vocational fields.

The concept of *competence* made its debut in the psychology field in the article: *Motivation reconsidered: the concept of competence* by White (1959). Competence was first used in the educational vocation to understand trainee teacher behaviour (Moore *et al.*, 2002). Since then, it has gained popularity in Vocational Education and Training (VET) programmes (Baartman & de Bruijn, 2011; Brockmann, Clarke & Winch, 2008; Hu, 2010; Mahfud, Nugraheni, Lastariwati & Pardjono, 2020; Moolman, 2017; Müller, VanLeeuwen, Mandabach & Harrington, 2009). However, defining competence varies globally, even in VET programmes, as shown in **Table 2.1**.

TABLE 2.1: EXAMPLES OF DIFFERENT COMPETENCE DESCRIPTIONS IN VET PROGRAMMES

Type of VET Competence	Country	Description ²
Behavioural	United States of America (USA)	It is a person-centred approach that focuses on an individual's skills, characteristics, behaviours, abilities and attributes .
Functional	United Kingdom (UK)	A task-oriented approach that focuses on skills but eliminates the behavioural characteristics of the behavioural approach with no distinction made between <i>skills</i> and <i>competence</i> , and the terms are used interchangeably.
Kompetenz	Germany	A combination of the technical knowledge and skills an individual must perform in the area of their profession. It includes the social behaviour within the work environment and an individual's cognitive and self-efficacy ability .
Outcomes	South Africa	Defined as “... the ability to apply knowledge, skills and values in a specific context according to a defined standard of performance ...”

Besides in the fields of psychology and education, the concept of competence has also been used extensively in occupational fields, such as management and human resources, research and the culinary arts (Birdir & Pearson, 2000; Hu, 2010; Hu, Horng & Teng, 2016; Ko, 2010; Le Deist & Winterton, 2005; Mahfud *et al.*, 2020; Moore *et al.*, 2002; Müller *et al.*, 2009). In **Table 2.2**, examples of competence definitions are listed from a culinary competence perspective, since culinary competence definitions are the closest in relation to individual cooking competence (Birdir & Pearson, 2000; Chaileuangleu, Chaiya, Batra & Barnes, 2021; Hu *et al.*, 2016; Ko, 2010).

² Brockmann *et al.*, 2008; Le Deist & Winterton, 2005; Moolman, 2017:34; Moore *et al.*, 2002

TABLE 2.2: COMPETENCE DEFINED BY COMPETENCE STUDIES

Definition	Source
"... Personal chef competency, considered as a combination of knowledge, skills, and attitudes ..." (Tuparova, Kaseva & Tuparov, 2014)	(Chaileuangleu <i>et al.</i> , 2021:9).
"... Competencies are a list of recommended skills, methods, techniques, and core knowledge for food and nutrition professionals ..."	(Buckley, 2016:22)
"... Skills, ability, knowledge and other attributes that make a successful chef ..."	(Hu, 2010:66)
"... The degree to which individuals can apply the skills and knowledge associated with a profession to the full range of situations that fall within the domain of that particular profession ..." (Kane, 1992)	(Ko, 2010:137)
"... Skills, ability, knowledge, and other attributes that make a successful research chef ..."	(Birdir & Pearson, 2000:2)

From the discussion above and the examples in **Table 2.1** and **Table 2.2**, it is evident that there is no coherent definition of competence and definitions are *domain-specific*, adapted to the field in which it is used (Barnett, Vazou, Abbott, Bowe, Robinson, Ridgers, Salmon, 2016; McGowan *et al.*, 2017; Wagner, Geleijnse & van Halteren, 2011). However, comparatively, it seems from all the aforementioned definitions that competence encompasses an individual's knowledge and skills and therefore a discussion follows of knowledge and skills as concepts.

2.1.1.1 Knowledge and skills as concepts

Knowledge and skills are two concepts that are interdependent and closely associated with each other and it becomes clear why these concepts are discussed as an entity in most consumer food-related studies (Alcance, 2018; Short, 2003; Ternier, 2010). Knowledge can be defined as having awareness regarding a matter acquired through experience or understanding of a subject (e.g., science or art) or techniques (Merriam-Webster, n.d.). It also includes the array of obtained information or understanding, cognitive reasoning ability, or a taught matter (Merriam-Webster, n.d.). In comparison, skill can be defined as "... the ability to use one's knowledge effectively and readily in execution or performance ..." or a taught matter which enables one to be capable of doing something (Merriam-Webster, n.d.). It is a "developed aptitude or ability" (Merriam-Webster, n.d.). In other words, one's skill is "an ability to translate knowledge into action", so one must first have the knowledge to apply the skill (Haverkort, 2019; Payne-Palacio & Theis, 2012:370). The following section discusses how the concepts of knowledge and skills apply to cooking competence.

2.1.2 Cooking competences' two-dimensional concepts of knowledge and skills

In their cooking competence study, Bech-Larsen and Tsalis (2018) describe competence as a two-dimensional concept of practical- and knowledge-based abilities. Whereas Van Kesteren and Evans (2020:6) define it as consisting of various understandings and practical knowledge and skills like "... the skill involved in kneading bread ...". Neumann, a leading member since 2010 in the CookUOS research project on cooking interventions, gave his interpretation on cooking competence via e-mail correspondence. He defines cooking competence as the knowledge and skills surrounding food origin, preparation, cooking techniques, home economics (i.e., domestic work in the narrower sense), needs-orientated planning, storing and preserving (Neumann, 2021).

It can thus be seen that cooking competence has been generally accepted as comprising of an individual's cooking *knowledge* and *skills* and numerous authors have used this definition in defining cooking competence (Bech-Larsen & Tsalis, 2018; Buckley, 2016; Chi, 2016; David, Widianingsih & Ardiansyah, 2017; Frans, 2017; Garcia, Reardon, McDonald & Vargas-Garcia, 2016; Grabmeier, Spiller & Risius, 2018; Marklinder & Nydahl, 2021; Ternier, 2010). This definition is further substantiated in that the descriptions of competence discussed previously are coherent, in that knowledge and skills form part of the components of competence. Applying competence to cooking, therefore, comprises of cooking knowledge and skill. For this study, cooking competence is conceptualised as an individual's cooking knowledge and skills.

After conceptualising cooking competence, it is noteworthy to mention that there are varying interpretations of the terms cooking competence, cooking skills and food skills in consumer food-related studies, as they are used as interchangeable concepts in the research. For this reason, the term will be discussed briefly to elucidate ambiguity around cooking competence.

2.1.3 Cooking competence: A transposable concept

Researchers have expressed concern about the *conceptual misunderstanding* arising from the inaccurately used concepts of cooking competence, cooking skills and food skills (a derivative of cooking skills). There is no clear distinction between these three concepts as they often overlap and are used as transposable concepts in the literature, creating further confusion regarding these concepts' understanding and meaning (Bech-Larsen & Tsalis, 2018; Begley & Gallegos, 2010a, 2010b; Desjardins & Azevedo, 2013; García-González, Achón, Alonso-Apperte & Varela-Moreiras, 2018; Johnson, 2020; Lavelle *et al.*, 2017; McGowan *et al.*, 2017; Méjean, Lampuré, Si Hassen, Gojard, Péneau, Herberg & Castetbon, 2018; Mills, White,

Brown, Wrieden, Kwasnicka, Halligan, Robalino & Adams, 2017; Region of Waterloo Public Health, 2015; Short, 2003; Truninger, 2011; Vanderkooy, 2010).

For example, Short's (2002, 2003) study defines cooking skills as a domestic cook's academic, perceptual, conceptual, mechanical, and planning skills. The studies by Lavelle *et al.* (2017) and McGowan *et al.* (2017) delineate the cooking skills definition by Short (2002, 2003), as mechanical, perceptual, and conceptual skills and food skills, as planning and organisational skills, defined as the "... wider set of skills involved in the entirety of the meal preparation process ..." (Lavelle *et al.*, 2017:2). Johnson's (2020:3) definition of food skills is based on Begley and Gallegos's (2010) cooking skill definition. It states that "... food skills ..." instead of cooking skills (as defined by Begley and Gallegos, 2010b), "... encompass the ability to plan, prepare and consume healthy food ...". Furthermore, Desjardins and Azevedo (2013) adapted their food skill definition from Short's (2002, 2003) cooking skill definition and Vanderkooy's (2010) food skill definition, the latter also derived from Short's (2002, 2003) definition. Therefore, it is clear that in research cooking and food skills are used as interchangeable concepts and it can be confirmed that various research studies adopt the definition in line with their research field (McGowan *et al.*, 2017).

Ternier's (2010) study posits that the cooking skill definition by Short (2002, 2003) should be described as cooking competence instead. Short's findings indicated that cooking skills are much more complex than only a task-centred approach of practical skills in food preparation, but rather a more person-centred approach of tacit abilities and knowledge. Furthermore, in 1999, Caraher, Dixon, Lang and Carr-Hill (1999:595) already found that cooking skills "... ought to be refined ..." and stated that "... cooking skills in themselves do not guarantee the preparation of meals from basic ingredients ... ideas, knowledge and menu-planning skills [are also] necessary to organise a meal ...".

This discussion shows that regardless of the specific definition, there is a general understanding that cooking and food skills form part of various derivatives of competence and knowledge in the consumer food-research field (Halkier, 2021).

The following discussion will describe the findings of the literature on cooking competence and its key concepts, dimensions, and indicators accordingly.

2.2 CONCEPTUALISING THE KEY CONCEPTS OF COOKING COMPETENCE³

The five dimensions set out by Short (2002, 2003) will guide the literature review in conceptualising cooking competence key concepts, dimensions and indicators. The cooking competence sub-concept of cooking knowledge and relating dimensions will be explored first, followed by the sub-concept of cooking skills and relating dimensions.

2.2.1 Cooking knowledge

Knowledge (as previously discussed) is a cognitive ability that individuals obtain through their own experiences and reasoning abilities, or it is externally taught to develop understanding and awareness of a specific topic or subject matter. Different types of knowledge exist in the cooking competence context and academic, perceptual and conceptual knowledge are explored.

Academic knowledge refers to knowledge obtained without direct experience, and it is the taught knowledge that enhances an individual's understanding of a task (Short, 2002:103). Academic knowledge is described as the "knowing that" dimension (Short, 2002:24, 103). Knowledge is taught or learned but does not relate to experiences (Short, 2002:24, 103, 2006:59). It enhances perceptual knowledge (the "knowledge of how"), which enables one to carry out a task and perform the related cooking skills (Short, 2002:24, 103, 2006:59). Whereas academic knowledge is not acquired from experience, perceptual knowledge can only be acquired from experience and an individual's reasoning capabilities.

Perceptual knowledge is difficult to identify (Short, 2002:23). The Merriam-Webster dictionary defines it as "... involving perception, especially in relation to immediate sensory experience ..." (Merriam-Webster, n.d.). Unlike academic knowledge, perceptual knowledge relates to secondary skills determined through former practice and experiences (Short, 2002:23, 96). It asks the question of "What is going on?" and involves the ability of an individual to judge or assess a situation, creating the ability to execute the required task (Short, 2002:23). Furthermore, perceptual knowledge is about the "knowledge of how" and relates to prior understanding of a task's complexity or difficulty level (Short, 2002:23-24, 96). As Short (2002:23) explained, perceptual knowledge leads to two different courses of action. For example, a person will look at a cake baking in the oven and, through perceptual knowledge, determines if the cake is cooked or needs further baking and reacts to that knowledge process.

³ Seminal references were used to conceptualise the key concepts of cooking competence dating back to 2002 to 2013. These references formed the basis on which the conceptual framework (**Chapter 3**) was formulated.

Conceptual knowledge has been described as sophisticated perceptual knowledge (Short, 2002:97). It is a complex cognitive capability of visualising the whole cooking process before anything is physically executed (Short, 2002:23). It is individuals' ability to take their sensory-perceptual knowledge (i.e., taste, colour, and texture) and conceptualise it to determine a dish's outcome (Short, 2003). Furthermore, it relates to abstract thinking, which forms part of understanding intricate concepts that are not necessarily connected to actual experiences, but form part of an individual's creative thinking abilities (Cherry, 2022; Short, 2003).

The reviewed cooking competence literature will be discussed according to the related academic, perceptual, and conceptual dimensions of cooking knowledge.

2.2.1.1 Academic knowledge

The following indicators were obtained from the literature relating to an individual's academic knowledge.

The domestic cooking competence study by Short (2002) identified various academic knowledge competencies. A domestic cook was identified as having food preparation knowledge, which consists of cooking knowledge and food preparation methods, food knowledge and the knowledge of different cuisines, ingredients, and food chemistry (Short, 2003).

Cooking knowledge and food preparation methods relate to an individual knowing how to weigh and measure ingredients and what are essential items of equipment needed in a kitchen (Short, 2003). Knowledge of food and different cuisines may be, for instance, knowing that mozzarella and tomato pizza toppings are named a [†]*Margherita* pizza, which indicates knowledge of Italian cuisine. This could also relate to understanding the difference between basil varieties for Thai and Indian cooking, which makes an individual knowledgeable of different ingredients used in different cuisines (Short, 2006:58). An example of an individual's ingredient knowledge may involve knowing that cooking red-kidney beans in fast-boiling water is essential for health reasons and it includes the taste, textures and flavours combinations of ingredients that an individual was taught to complement each other, such as tomato and basil, couscous and chickpeas or roast beef and horseradish. Furthermore, basic food chemistry knowledge may, for instance, be knowledge of what chemical reactions occur when baking a cake, why it is necessary to beat egg whites and fold them into a batter mixture or the reason for using sour cream in a batter (Short, 2003). It may also involve knowledge about the effect of different altitudes on baking. This knowledge can lead to an individual making adjustments to the cooking time or temperature accordingly (Short, 2006:59). Additional academic

knowledge was identified as an individual's knowledge of nutrition, food hygiene and safety, where food comes from (in terms of its origins, history, and geography), food choice and preparation methods in vogue (Short, 2003).

Begley and Gallegos' (2010a; 2010b) research aimed to determine the cooking competencies necessary for dietetics. In the first article, they aimed to define cooking competence. They state that cooking does not only comprise physical cooking activities but includes both the art and science of cooking and, in a more comprehensive way, determines one's food habits; therefore, there are various reasons for people's cooking practices. Moreover, Begley and Gallegos (2010b) adapted the definition of Short (2003) to emphasise the complexity of cooking. They define academic knowledge as an individual's food safety, nutrition, food trends and fashion knowledge (Begley & Gallegos, 2010b). The second article questioned whether cooking competence is a necessity for dietetics. This article referred to selected food and culinary competencies the American Dietetic Association (ADA) set. The researchers identified numerous academic knowledge competencies from the three selected categories, most relating to food preparation knowledge (Begley & Gallegos, 2010a). For instance, a dietitian requires knowledge of culinary terminology, home cooking equipment (including kitchen equipment such as knives) and knowing how to safely operate and care for the cooking equipment. Knowledge of food preparation techniques and methods (including the ability to weigh and measure ingredients) was identified, which provides dietitians with the knowledge of nutrient retention in foods during the cooking process. This includes the knowledge of how to reduce ingredients that cause health concerns (e.g., saturated and trans-fats, cholesterol, sodium and sugar). In addition, dietitians must also know how to prepare tasty food and make food preparation an enjoyable activity, as taste and nutrition are closely associated. Therefore, having food preparation knowledge enables a dietitian to develop appropriate portion sizes for the consumption of popular foods and, most importantly, communicate this food preparation knowledge with *non-cooks*, other health professionals and consumers (Begley & Gallegos, 2010a).

Michaud (2007:16) adapted the definition by Short (2003) in defining cooking competence in a study on developing and evaluating instruments to measure the effectiveness of a culinary and nutrition education programme. Cooking competence is defined "...as a collection of mental, physical, and hands-on skills ..." Michaud (2007:16). Furthermore, Michaud (2007:16) describes academic knowledge as knowing about food safety, nutrition, and combining food flavours and textures. The Public Health Nutritionist for the Region of Waterloo Public Health in Canada, Vanderkooy (2010), also developed a definition based on the five cooking competence dimensions of Short's (2002) study. Vanderkooy (2010) describes knowledge as

an individual's food, nutrition, and food preparation knowledge, which is essential in a household context.

In addition, a guidance document for healthy eating, physical activity and healthy weight were developed by Bursey, Howard, Bennett, Fitzpatrick, Maki, Stinson, Wai, Sivanand and Perazzo (2010) for the Ontario Ministry of Health in Canada (Region of Waterloo Public Health, 2015). In this document, a cooking competence definition was developed based on Short's (2003) and Vanderkooy's (2010) findings and also from Beyers, Garcia, Kennedy, Mangles, Rodrigues and Truscott's (2009) unpublished manuscript (Bursey *et al.*, 2010). These researchers defined cooking competence as an individual's ability to regularly provide one's household with nutritious meals (Bursey *et al.*, 2010; Chenhall, 2010; Region of Waterloo Public Health, 2015). The researcher identified academic knowledge in the study of Bursey *et al.* (2010), as individual knowledge of healthy food preparation, following recipes, nutrition, label reading, food varieties and ingredients and food safety knowledge, which includes safe storage techniques of foods.

A variation of Bursey's *et al.* (2010) definition, as determined by Desjardins and Azevedo's (2013) study among youth, young pregnant women and young parents who are at risk for poor health, states that cooking competence consists of a combination of techniques, knowledge and planning ability. Desjardins and Azevedo (2013) explain that knowledge that would contribute to providing a household with regular and healthy meals includes an individual's knowledge of nutrition for good health, reading food labels, how to follow recipes and its methods, the origins of food and its characteristics (which creates knowledge regarding ingredients), as well as food safety knowledge.

Another popular definition is that of Fordyce-Voorham (2011). In this study, Fordyce-Voorham identified essential cooking competencies for a skill-based, healthful eating programme in secondary schools. These competencies were classified into four areas of expertise required for adolescents to be self-sufficient: knowledge, information, skills, and resources. The researcher identified numerous components from these categories relating to academic knowledge.

Fordyce-Voorham (2011) considers food preparation knowledge necessary for adolescents, such as the knowledge of different food preparation methods and basic items of cooking equipment needed in a kitchen. To assess, read and follow recipe instructions before and during the cooking process was also deemed necessary, as it gives adolescents the knowledge to avoid potential problems arising during the food preparation process. Furthermore, adolescents should have basic knowledge of the kitchen, personal and food

hygiene, as well as health and safety practices. For instance, to prevent injuries, adolescents must know about knife safety, such as the appropriate use, storing and care of knives, and other kitchen equipment and appliances, and personal hygiene and safety knowledge, such as washing hands. The knowledge of safe food storage techniques was also identified. It may include the safe transportation of purchased food from the shop to the home and the knowledge of how to store fresh foods, especially fresh meat and poultry, to extend the quality and freshness of produce. The knowledge of how to safely defrost frozen foods, while preserving the quality of the food, is equally important. In addition, adolescents require nutritional knowledge for good health and the ability to prepare nutritious meals, including what a nutritious family-type meal comprises and how to make a well-balanced and appetising meal. The young, independent food experts of the study stated that nutritional knowledge could be used, for example, as an effective *consumer tool* in having the knowledge of what quality fresh foods in season entail. This would also include knowledge of food additives, appropriate portion sizes and specific dietary requirements (e.g., vegetarianism) when purchasing food. Emphasis was placed on the importance of adolescents' knowledge about ethical farming, manufacturing practices, environmental practices regarding food and the cost of food production practices, to be able to make better food choices. The importance of adolescents obtaining information from sources that will inform their knowledge was also identified. Therefore, they must know where to find food information and determine what their resources are and where they can obtain the information they require. Various food knowledge information from numerous sources was identified, such as recipes, cookbooks, the internet (e.g., credible websites and podcasts), direct food sources (e.g., supermarkets or farmers' markets), food experts, family, and friends. Adolescents also need to be food literate, so that they are not only able to read food labels but have the knowledge to interpret and act upon the food label information. For instance, from a nutritional perspective, having the nutritional background knowledge that if a product claims it is fat-free, it will most likely be higher in sodium or sugar.

Finally, Wagner and colleagues researched how to create technology to improve people's cooking competence and proposed a pervasive kitchen infrastructure that can automatically measure cooking competence (Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz, van Halteren, Moynihan, Hoonhout, Pham, Jackson, Ladha, Ladha & Olivier, 2011). In defining cooking competence, they state that the "... defining qualities of cooking competence are coloured by the context in which a meal is prepared ..." (Wagner, Ploetz *et al.*, 2011:110). In other words, the taste and presentation of a meal will differ dramatically among a chef, working mother and consumer science educator (Wagner, Ploetz *et al.*, 2011). The study focused more on the activities of food preparation than the sensory qualities of the completed meal and, in line with this focus, defined the following seven characteristics of cooking competence: utilising utensils

and appliances; multi-tasking; monitoring and adaptation; planning; reproduction of recipes; cognitive skill and nutritional knowledge. Wagner and colleagues described knowledge in terms of the nutritional knowledge of an individual, which requires an understanding of what a healthy diet entails. The following section will discuss the perceptual dimension and relating indicators of cooking knowledge.

2.2.1.2 Perceptual knowledge

The researcher identified the following perceptual knowledge dimension indicators from the literature.

In Short's (2002, 2003, 2006) study, perceptual knowledge was identified as the practical knowledge (experience) obtained from repeating food preparation actions and the cognitive ability of individuals to use their senses during the food preparation process. Perceptual knowledge relies on individuals' ability to recall memories and past experiences when similar conditions and ingredients were used and are best obtained from making mistakes (Short, 2006:55). It is the understanding of the properties of food and making judgements or assessments accordingly. One of the study's participants explained it as follows: "... From being able to compare the dryish, more solid scones made when you just knew you hadn't added quite enough milk and the mixture is too stiff but carried on regardless, with those that were light and moist and began with a softer, more pliable dough ..." (Short, 2006:55). In other words, an individual must be able to link the consistency of the mixture with that of the end product.

Furthermore, an individual's sensory perception can be described as the knowledge to understand when to intervene in the food preparation process, using one's senses of taste, colour, and texture. For example, when assessing the stages of food preparation, one might know that the smell coming from the oven is an indication that the food is "coming along" or the ability to judge the texture of a scone mixture to "just the right consistency" so that it would result in a light (rather than dense) scone (Short, 2006:55).

Finally, perceptual knowledge relates to an individual's understanding of food properties by knowing how ingredients react when combined or heated. It is having the insight and understanding of when the exact moment is to remove broad beans during the blanching process (from the boiling water into the ice water) for easy removal of the bean skin. It can also be to have the ability to judge oil's turning point to *almost smoking* when heating a wok or when oil is ready for deep-frying (Short, 2003, 2006:56).

Begley and Gallegos (2010b) adapted Short's perceptual knowledge definition and identified it as an individual's ability to judge the taste, colour and texture of various ingredients and combinations thereof. An ADA dietetic competency that the researcher identified as perceptual knowledge is a dietitian's ability to know how to cook food to the correct point or temperature to ensure optimum food safety and quality and the knowledge to understand how food substitutions will affect ingredient quality (Begley & Gallegos, 2010a).

Perceptual knowledge is identified by Michaud (2007:16) as assessing at what stage vegetables are correctly cooked during the food preparation process. Vanderkooy (2010) describes that it includes an individual's perception of food characteristics, such as taste, texture and when food is cooked. Bursey *et al.* (2010) similarly note it as individuals' ability to use their senses (e.g., texture and taste) to perceive when the food being prepared is cooked.

The food experts of Fordyce-Voorham's (2011) study discusses the importance of experiencing *troubleshooting* during cooking. Adolescents should be reassured that they can anticipate mistakes as cooking knowledge is obtained from practising through trial and error, which gives them experience in, for example, their food timing and sequencing abilities. Furthermore, it is deemed necessary that adolescents obtain exposure to cultural and traditional food tastes other than their own. Experiencing various cultural foods provides exposure to adolescents and through these experiences, they create the knowledge of how different foods are connected to different cultures, traditions, and people.

Perceptual knowledge is described in terms of nutrition by Wagner, Geleijnse *et al.* (2011) and Wagner, Ploetz *et al.* (2011). This requires an understanding of the nutritional properties of food and the impact that the food preparation processes, that individuals apply, will have on the food or ingredients' properties. Furthermore, for individuals to have good perceptual knowledge, they must have the reasoning capabilities of food preparation processes, such as perceiving and foreseeing the effect of applying heat or combining various ingredients.

A discussion follows on conceptual knowledge and its indicators, the last dimension of cooking knowledge.

2.2.1.3 Conceptual knowledge

The conceptual knowledge dimension is identified in the literature as: the ability to conceptualise the outcome of a dish, intended or desired outcome of a dish as well as an ability to evaluate and select from resources available or accessible; creative, and experimenting

abilities; improvisation on, the adaptation of and substituting knowledge; monitoring and adapting knowledge; and the cognitive ability to reproduce recipes without instructions.

Conceptual knowledge is described by Short (2002:97, 2003, 2006:58) as an individual's creativity and designing abilities to enable a person to conceptualise the outcome of a dish. It also entails the cognitive ability to reproduce recipes without instructions and evaluate and select from available resources to improvise, substitute and adapt recipes during the food preparation process.

To conceptualise or envision the intended or desired outcome of a dish, Short (2006:58) gives an example of one of the study's participants who had cheesecake at a friend's house. The participant asked the friend a few questions: "... *what did you put in that? or did you do that first?...*" which enabled the participant to produce a similar cheesecake at home. Although the participant did not have the recipe, she could reproduce it due to her conceptual ability to envision the intended outcome. Conceptual knowledge also includes an individual's cognitive ability to recreate meals, recipes, or cooking methods from resources or ingredients they have not used before. For example, another participant recreated ready-made meals seen in a supermarket. The participant will identify the ingredients used in the ready-made meal and recreate the dish using those ingredients on the packaging at home.

Another conceptual knowledge competency is an individual's ability to evaluate and select from resources available or accessible for food preparation and select the appropriate food preparation techniques accordingly (Short, 2003). Therefore, evaluating what ingredients are available to select from within the budget (either already available in the house or ingredients available and accessible at the grocery store), evaluating the time available for food preparation, the difficulty level of the meal to be prepared and the cook's food preparation abilities, will all determine what type of dish will be prepared. Furthermore, aspects such as the occasion (e.g., having friends over for dinner versus an average weekday meal), family preferences and dietary requirements also need to be considered (Short, 2003).

The accessibility of resources generally leads to the individual's creative and experimenting abilities. An individual's creative efficiency involves preparing a meal and then having the ability to adapt and substitute ingredients, serving various other altered dishes from the original meal. It includes an individual's ability to design meals around available ingredients and improvise by, for example, preparing a sandwich and deciding what ingredients to use from what is available or using leftovers and disguising it in a manner which appears to be a completely different dish (Short, 2003).

Begley and Gallegos (2010b) summarise Short's definition of conceptual knowledge as an individual's ability to envisage a dish's outcome, be creative and make adaptations to ingredients during the food preparation process. The researcher identifies five dietitian competencies that dietitians should have as set by the ADA that related to conceptual knowledge (Begley & Gallegos, 2010a). Dietitians must have the ability to incorporate healthier ingredients (e.g., healthier fats and oils, fruits and vegetables, complex carbohydrates) into people's diets and utilise ingredients such as herbs, spices and other aromatics creatively to add and develop flavour in these dishes. Dietitians must also have the ability to alter recipes to healthier variations. By altering recipes, dietitians must be able to make ingredient substitutions, while knowing how the substitution will affect the foods' quality (the latter, a perceptual competency). Lastly, dietitians must be able to create, modify and write recipes (Begley & Gallegos, 2010a).

The ability to conceptualise how to adjust recipes according to one's family preferences, as described by Michaud (2007:16), relates to the conceptual knowledge of an individual. Vanderkooy (2010), on the other hand, describes it as an individual's ability to determine or visualise the outcome of a meal being prepared and having the ability to modify recipes and make use of leftover food when preparing a nutritious meal. Bursey *et al.* (2010), cover these conceptual knowledge explanations of Michaud and Vanderkooy by describing it as an individual's ability to conceptualise food and think creatively about food preparation, such as utilising leftovers, making recipe adjustments or food substitutions.

Various conceptual knowledge indicators were identified by Fordyce-Voorham's (2011) study. The study's food experts stated that young people should be aware of their *non-human* resources. These resources include: time available for food preparation, kitchen equipment and appliances they would be able to use and how to obtain (in terms of transportation) food, if it needs to be purchased. Furthermore, young people should be knowledgeable about the accessibility and limitations of purchasing fresh, quality and affordable foods. Knowledge of their available resources will assist them with planning, shopping, ingredients available at home that they can utilise, and the actual food preparation. Other conceptual knowledge identified was having improvisation, adaptation and substituting knowledge. Knowing that one can use a fork instead of a whisk to scramble eggs or make cooking methods and ingredient substitutions and being knowledgeable about the *versatility* of ingredients. The knowledge of food preparation lends itself to young people being enabled to prepare affordable meal variations and tailor them to their specific requirements. Conceptual knowledge enables young people to take a recipe and have the ability to substitute ingredients for a more affordable meat cut, stay within their budget, or change the cooking method for a more nutritious or specific dietary requirement meal.

Monitoring and adaptation knowledge was identified as part of conceptual knowledge in the study by Wagner, Geleijnse *et al.* (2011), and Wagner, Ploetz *et al.* (2011). This knowledge is essential when modifying an existing *cooking plan* due to a change in current unexpected or unplanned circumstances. Therefore, an individual must be able to monitor the situation and make suitable adaptations by, for example, altering or substituting recipe ingredients or methods. Another cooking competency that can be classified as conceptual knowledge is the reproduction of a recipe. Wagner, Geleijnse, *et al.* (2011), and Wagner, Ploetz *et al.* (2011) note that an individual who can replicate a recipe with similar results each time without following the recipe instructions has a high level of cooking competence. It must also be taken into consideration that when an individual is familiar with a recipe, they would often make their own adaptations and substitutions, not only to their preferred ingredients but also to making changes to the methods and order of tasks that need to be executed, therefore adapting the recipe according to their liking.

The cooking knowledge dimensions of academic, perceptual and conceptual knowledge have now been discussed as found in the literature. The following section will discuss the cooking skills dimensions of mechanical and planning skills.

2.2.2 Cooking skills

Cooking skills are more straightforward to identify than cooking knowledge. Cooking skills apply an individual's cooking knowledge and involve a task-centred approach to practical skills required in the food preparation process (Alcance, 2018; Short, 2003). It also coincides with food-related activities like shopping, eating, parenting and daily planning tasks (Halkier, 2021). The cooking skill dimensions of mechanical and planning skills have been explored for this study.

Mechanical skills are easier to identify than cooking knowledge dimensions. Mechanical skills involve the ability to execute the actual physical food preparation activities. It comprises using ingredients that can be raw, semi- or fully-prepared foods and applies cooking techniques and methods in constructing, assembling and plating a meal (Halkier, 2021).

Planning or organisational skills are components of the comprehensive classification of cooking skills (Halkier, 2021). Cooking must be seen as a process that coincides with various other cooking processes and managing multiple smaller facets of these processes creates (to some degree) the skill of planning and organising meals and their related components (Halkier, 2021). Therefore, it is crucial to understand that food preparation has various coinciding cooking tasks and managing it requires planning and organisation skills (Halkier, 2021).

The following section will explore the reviewed cooking competence literature on cooking skills dimensions and related indicators of mechanical and planning skills.

2.2.2.1 Mechanical skills

The following mechanical skills were identified in the literature.

Short (2002:106, 2003) describes mechanical skills as utilising various food preparation skills, such as mixing, kneading, rolling and shaping when preparing bread or scrambling eggs, frying chicken or boiling pasta. It is the practical and technical skills of the actual manipulation of food through, for example, cutting or slicing ingredients and applying cooking techniques like boiling or frying. It also involves practical skills that do not require specific techniques, like washing, scrubbing, or opening a tin.

Begley and Gallegos (2010b) describe mechanical skills as handling food physically and applying cooking techniques such as cutting and blanching. The researcher recognises mechanical competencies for dieticians set by the ADA. It requires dieticians to have the skills in food preparation techniques of both dry-heat (e.g., sautéing and grilling) and moist-heat (e.g., steaming and poaching) cooking methods. They must also have the skill to prepare basic sauces (savory and sweet) and perform basic baking techniques (Begley & Gallegos, 2010a). Furthermore, as previously discussed in academic knowledge, a dietician needs food preparation knowledge, but they must have the skill to apply it. For instance, knowing about home cooking kitchen appliances and equipment, but also having the skill to use it, selecting the correct item for its intended purpose, applying appropriate techniques to the right ingredients, and working with knives (Begley & Gallegos, 2010).

Michaud (2007:16) notes mechanical cooking skills as “the action verbs associated with cooking”, for example, cooking activities such as poaching, slicing, frying and microwaving. According to Vanderkooy (2010), food preparation techniques are the mechanical techniques required for food preparation. Research by Desjardins and Azevedo (2013) posits that food preparation techniques are an individual’s ability to use kitchen equipment to cook with and the skill to handle ingredients. Furthermore, the researcher identifies mechanical skills, as denoted by Bursey *et al.* (2010), as an individual’s ability for nutritional food preparation, which involves the food preparation skills to apply mechanical techniques to food, such as chopping, mixing, and puréeing.

The experts consulted in the research conducted by Fordyce-Voorham (2011) posit that young people should have food preparation skills to have the ability to use flavourings and ingredients that are fresh and seasonal, which will enable them to prepare their own meals. The

mechanical skills identified in the study by Fordyce-Voorham include the meal skills of safely and correctly applying food preparation methods, such as dicing, chopping and browning during cooking. These also include the skills of matching the appropriate food preparation technique with the appropriate style and purpose of the meal being prepared and selecting and using kitchen equipment for its intended function during food preparation. As discussed previously, the knowledge of how kitchen equipment should be used is learned through academic knowledge.

Mechanical skills are identified by Wagner, Geleijnse *et al.* (2011), and Wagner, Ploetz *et al.* (2011) as an individual's ability to utilise utensils and appliances. Moreover, Wagner, Geleijnse *et al.* (2011) describe that cooking competence can be determined by an individual's ability to evaluate the suitability of selecting a utensil or appliance and the individual's skill to operate the utensil or appliance. It also involves the skill of how an individual physically and mechanically operates utensils and appliances during the food preparation process.

Furthermore, Wagner, Geleijnse *et al.* (2011) and Wagner, Ploetz *et al.* (2011) divide the food preparation process into active and passive activities. The reason is to bridge complex and intricate cooking skill processes and the researchers believe it provides a more straightforward structuring of food preparation categories. Active activities involve the food preparation processes where the cook is actively engaged, like cutting or frying ingredients. Therefore, it is a food preparation activity performed in the kitchen that Wagner, Geleijnse *et al.* (2011) and Wagner, Ploetz *et al.* (2011) measured in their study. On the other hand, passive activities do not require the cook to be actively involved in the food preparation process, such as boiling, baking, and other activities unrelated to the food being prepared. Still, they occur during the food preparation process.

Planning skill is the last dimension of cooking competence explored in the next section.

2.2.2.2 Planning skills

Cooking skills' second dimension includes planning skills. Associated indicators from the literature were identified.

Short (2006:56) defines planning skills as an individual's timing and organisational abilities, which are required before and during food preparation. Timing is a crucial part of the food preparation process. Before food preparation, time management and organisational skills include menu-planning skills, essential for food preparation. An individual should have the ability to organise meals in advance and compile menus. Furthermore, an individual needs to

make a shopping list from the ingredients needed from the compiled menu and this skill allows individuals to use their time effectively during shopping.

An individual's organisational skills can take on many forms. For instance, an individual must have the planning skill to produce meals according to the situation at different times. For example, planning for food preparation to be completed at a specific time because friends are expected for dinner, or the individual or family wants to watch a television programme at a set time (Short, 2006:57). Furthermore, different planning approaches require different types of planning skills. For instance, an individual can plan the week's menus in advance, plan what will be prepared for dinner in the morning or, come home from work and then plan what will be prepared for dinner. Each of these planning approaches will determine the type of meals to be cooked. For example, if planning was done for the week ahead and the individual knows that in the week there will not be much time for food preparation, they can decide to prepare a stew that requires little attention or plan for a more formal meal with guests that needs to be ready at a set time. If the individual comes home from work and then plans what to have for dinner, it might lead to quick last-minute cooking. Lastly, a good set of planning skills is essential if different family members require their meals to be ready at different times. As such, a family with a toddler would usually require an additional meal to be prepared that suits the toddler's dietary requirements and bedtime schedule, which generally needs to be ready at a different time than the rest of the family (Short, 2003).

Time management requires an individual's skill to plan and schedule the food preparation process to see what food preparation activities need to be done, which tasks are completed, and which tasks still need to be done during the food preparation process. Organising the tasks allows the individual to prepare food less stressfully and allows for extra time for anything that might have been unanticipated during the food preparation process. For instance, when planning to prepare a casserole with rice, one starts with cooking the rice and while the rice is cooking, one starts preparing the casserole. In doing so, time is efficiently and effectively managed (Short, 2006:56). Furthermore, Short (2003) maintains that informants showed various forms of organisational skills in their ability to perform multiple meal preparation activities simultaneously and complete all the meal components to be ready at the same time. Furthermore, planning skills include scheduling other activities around the food preparation process, such as looking after children while preparing a meal or having the skill to fit in food preparation around other daily activities and tasks that need to be completed.

Begley and Gallegos's (2010b) adapted version of Short's (2002) planning skills includes menu planning, the timing and chronological flow of cooking tasks during food preparation and fitting in other non-cooking tasks into the food preparation process. However, planning skills were not deemed a necessary competency for dietetics, as described by the ADA (Begley &

Gallegos, 2010a). Michaud (2007:16) also adapted Short's (2002) definition of planning skills, describing these as an individual's timing and organising skills that involve ensuring all food preparation tasks are finished simultaneously and performing and completing other tasks in between, such as cleaning up. Planning skills for Vanderkooy (2010) related to planning healthy meals and including children in the process to develop their cooking competence. For Desjardins and Azevedo (2013), it involved all aspects of the meal organisation process, such as shopping, budgeting, and storing food.

From a more straightforward definition of cooking competence, the researcher identified that menu planning, food shopping and food storage skills form part of the planning dimension in the study by Bursey *et al.* (2010). In a more descriptive definition, planning skills were described as organising meals, planning for food preparation, budgeting skills and the planning involved in teaching food skills to children.

The food experts consulted in the study by Fordyce-Voorham (2011) identify various competencies related to the ability to plan. Skills identified as planning skills mainly include preliminary food planning. Pre-planning involves the ability to prepare the meal process by carefully organising the meal process, starting by reading recipes. Looking up recipes through various sources such as cookbooks, the internet and family members (which form part of academic knowledge) allows the preparation of seasonal, interesting, and flavoursome food. It should also be taken into consideration to plan meals according to the family's dietary requirements and an available budget for food preparation. According to Fordyce-Voorham's study, health experts state that they believe young people should be able to plan healthy meals within a budget that includes all the food groups. In addition, use complementary protein sources to reduce costs or for special dietary requirements (e.g., vegetarians), and make various food combinations using fresh ingredients. The next step is identifying food items already available in the house and then drawing up a shopping list of food items needed for purchasing. The actual shopping takes place where an individual requires the skill to source food items with the ability to *shop around* to make effective food purchasing decisions.

Furthermore, the ability to shop includes purchasing ingredients needed for immediate food preparation and the skills to plan to ensure that stock levels of food items in the home are maintained. Young people should have pre-planning skills to plan and coordinate the actual food preparation process. For instance, the ability to divide the recipes decided on into smaller workable tasks and timing and sequencing beforehand which food preparation tasks can be prepared consecutively and simultaneously, ensuring all the meal components are ready and completed simultaneously. It also includes organising cleaning tasks throughout the food preparation process (Fordyce-Voorham, 2011).

Lastly, Wagner, Geleijnse *et al.* (2011) describe planning as the skill of scheduling activities before and during the cooking process. Before the cooking process, planning involves the acquisition of ingredients, for example, sourcing ingredients from a grocery store (Wagner, Geleijnse, *et al.*, 2011; Wagner, Ploetz *et al.*, 2011). Planning required during the cooking process involves the ability to multi-task. Multi-tasking involves the skill of performing numerous food preparation actions simultaneously, which is often necessary when preparing more complex meals and where different components of the meal need to be prepared, mainly at the same time, to produce the finished meal (Wagner, Geleijnse, *et al.*, 2011; Wagner, Ploetz *et al.*, 2011).

After reviewing the literature regarding cooking competence, its key concepts, dimensions, and indicators, it is necessary to identify and define the young white adults residing in Tshwane, South Africa, for this study.

2.3 YOUNG ADULTS

The population of South Africa is currently estimated at just over 60 million people, of which about 80% are black Africans, 9% coloureds, 8% white and 3% South Asians in ethnicity (Sidanius, Brubacher & Silinda, 2019; Statistics South Africa, 2021b). Therefore, South Africans can be seen as a multicultural and ethnically complex society (Sidanius *et al.*, 2019).

This study focused on white young adult couples, one of the minority racial groups in South Africa (Sidanius *et al.*, 2019; Statistics South Africa, 2021b). Many demographic variables need to be considered when defining young adults, as no clear consensus has been reached (Tillman, Brewster & Holway, 2019). Limited information is available on young adult couples; therefore, the demographic variables of the young adult couples' age, life stage in a family life cycle, education, income, occupation, and lifestyle characteristics were explored. The section concludes with a description of the white young adult couples.

2.3.1 Age

Various facets are considered when categorising a particular generation, making it difficult to define. Therefore, no unanimity has been reached on where the age group for young adults starts or ends (Tillman *et al.*, 2019). It is generally accepted as a period of a person's late teens until early thirties, classifying them as millennials for this study (Tillman *et al.*, 2019). Millennials or Generation Y are individuals who entered adulthood in the 21st century and although the age range is not officially defined, it is generally accepted as individuals born between 1980 and 2000 (Dass, Subramaniam, Muslia & Hasan, 2021; Dimock, 2019; Hamilton, 2018:9; Heiberg, 2021; Howe & Strauss, 2009:414; Louie, Moulder, Wright &

Siedhoff, 2019; Shrivastava, 2020; Weber, 2017). According to Shrivastava (2020), millennials are divided into two categories, Generation Y1 (born before 1986) and Generation Y2 (born after 1986), which subdivides the group into 25 to 29 years old and 29 to 39 years old.

In South Africa, the National Youth Policy (NYP) defines youth between 14 and 35 years (Statistics South Africa, 2020). Statistics South Africa (2018) classifies millennials as individuals born between 1980 and 1999, therefore, aged 22 to 41. In line with South African guidelines, the young adults for this study are limited to millennials aged 22 to 35 years.

According to mid-year population estimates, the general South African population is relatively young, with 34.3% of the population falling into the young adult category aged between 20 and 39 (Statistics South Africa, 2021b). The South African Audience Research Foundation (SAARF)⁴ classifies eight life stages in a life cycle (discussed below) to define the age group of the young adult couples for this study (SAARF, 2013; Stedall & Venter, 2016:314).

2.3.2 Life stage in a family life cycle

The concept of the family life cycle is defined as the "... series of stages through which most families progressed ..." (Schiffman & Wisenblit, 2019:280).

A typical family life cycle usually consists of leaving home, completing tertiary education, employment, getting married, parenthood, becoming empty nesters and finally, old age (SAARF, 2013; Schiffman & Wisenblit, 2019:280; Tillman et al., 2019). However, society fluctuates and moves away from the traditional lifestyle towards a more liberal, "... self-fulfilling and independent ..." way of life (O'Brien, 2008; SAARF, 2013:1; Schiffman & Wisenblit, 2019:283).

The rise of women in the workforce and the decline of men as the primary source of household income are reasons for the deviation from traditional family life stages (SAARF, 2013; Schiffman & Wisenblit, 2019:283). Other reasons include the rise in the standard of living that enabled young adults to live independently from their parents, which sequentially leads to the abating of marriage's religious beliefs (SAARF, 2013). Cohabitation became the norm, with marriage and having children (if at all) being postponed to later in life, leading to smaller families (SAARF, 2013; Schiffman & Wisenblit, 2019:283). In addition, divorce rates have escalated, increasing single-parent households (Hamilton, 2018:8; SAARF, 2013; Schiffman & Wisenblit, 2019:283). Furthermore, a rise in polyamorous, polygamous, gay, lesbian, and transgender families is also seen (O'Brien, 2008; Schiffman & Wisenblit, 2019:283). All these changes in

⁴ The last report from SAARF were published in 2013 and 2014 and was applicable to the conceptualisation of the age group during the time of data collection (2015-2016).

the structure of families have led to an increase in non-traditional life stages (Hamilton, 2018:8; Koekemoer, 2006:14-16; O'Brien, 2008; SAARF, 2013; Schiffman & Wisenblit, 2019:283).

The SAARF classification system identifies eight life stages for the South African context (**Table 2.3**) and is used by marketers for segmentation purposes (Koekemoer, 2006:9; Stedall & Venter, 2016:314). This report was compiled between July 2012 and June 2013, representing 37.2 million South African adults (SAARF, 2013).

TABLE 2.3: ADAPTATION OF THE SAARF EIGHT LIFE STAGES IN A FAMILY LIFE CYCLE (SAARF, 2013; Stedall & Venter, 2016:314-315)

Life stages	% South Africans	Age	Sex		Living with parents	Married or living together with a significant other	Dependent children in the household
At-home singles	23.2%	<34	Male:	61.2%	Yes	Not married Not living together	No children
	(72.9%)	(15-24)	Female:	38.8%			
	(27.1%)	(25-34)					
Young independent singles	10.3%	<34	Male:	69.3%	No	Not married Not living together	No children
	(45.2%)	(15-24)	Female:	30.7%			
	(54.8%)	(25-34)					
Mature singles	13.7%	35+	Male:	47.5%	-	Not married Not living together	No children
	(45.1%)	(35-49)	Female:	52.9%			
	(54.9%)	(50+)					
Young couples	5.9%	<49	Male:	57.4%	-	Married or Living together	No children
	(6.2%)	(15-24)	Female:	42.6%			
	(31.9%)	(25-34)					
	(61.9%)	(35-49)					
Young families	16.1%		Male:	48.3%	-	Married or Living together	At least one dependent child <13 years
	(3.9%)	15-24	Female:	51.7%			
	(31.9%)	25-34					
	(47.5%)	35-49					
	(16.7%)	50+					
Single parent family	17.3%		Male:	10.9%	-	Not married Not living together	Dependent children
	-18%	15-24	Female:	89.6%			
	(33.6%)	25-34					
	(27.2%)	35-49					
	(21.2%)	50+					
Mature couples	8.9%	50+	Male:	55.2%	-	Married or Living together	No dependent children
			Female:	42.6%			
Mature families	4.4%		Male:	52.5%	-	Married or Living together	No dependent children <13 years;
	(1.1%)	25-34	Female:	47.5%			At least one dependent child >13 years
	(50.4%)	35-49					
	(48.4%)	50+					

The eight life stages identified are at-home singles, young independent singles, mature singles, young couples, young families, single parent families, mature couples and mature families. For this study, only the two life stages that fall within the focus of this study will be discussed, namely those of **young couples** and **young families**, as highlighted in **Table 2.3**.

2.3.2.1 Young couples

According to the SAARF (2013) report, South African young couples comprise 5.9% of the sample and are categorised into the following three groups: 15 to 24 (6.2%), 25 to 34 (31.9%), 35 to 49 (61.9%) years old. The young couples are either cohabiting or married and have no children or dependents (SAARF, 2013; Stedall & Venter, 2016:315). This stage can also be classified as the *Honeymooners* stage, identified as a couple not living with their parents, having a double income household, without children (Koekemoer, 2006:72; Schiffman & Wisenblit, 2019:281). Young couples are also classified as *Dinkies/Dinky*, meaning “double income, no kids yet”, with both partners employed (Henricks, 2023; Koekemoer, 2006:27).

A non-traditional life stage has been identified as the *Mingles* stage. The *Mingles* stage is where young couples cohabit, are not married, and have no children (Koekemoer, 2006:41; Lazzara, 2020:486-487). Millennials are recognised as cohabiting couples and have a propensity towards serial cohabitation. It means that the relationship is more likely to dissolve than lead to marriage, which results in a person cohabiting more than once in their lifetime (Eickmeyer & Manning, 2018; O’Brien, 2008; Silva, Reis & Brandão, 2019). The current study also dealt with the life stage of young families.

2.3.2.2 Young families

The SAARF (2013) report classifies young families as 16.1% of the research sample and is categorised into four groups: 15 to 24 (3.9%), 25 to 34 (31.9%), 35 to 49 (47.5%) and over 50 (16.7%) years old (SAARF, 2013). Young families differ from young couples in that they have at least one dependent child younger than 13 years (SAARF, 2013; Stedall & Venter, 2016:315). The traditional life stage can also be classified as the *Parenthood* stage. The *Parenthood* stage starts with the couple’s first child and continues until all the children have left their parental home (Schiffman & Wisenblit, 2019:281). Because of the long duration of this stage, it is subdivided into the preschool, elementary school, high school and college phases. Therefore, young families are married couples with children younger than 13 or in the preschool and elementary school stage and do not reside with their parents (Koekemoer, 2006:28; Schiffman & Wisenblit, 2019:283; Stedall & Venter, 2016:315).

A non-traditional classification of young families is that of *Parental Mingles*. These individuals cohabitate like young couples but have dependent children (Koekemoer, 2006:41; Schiffman & Wisenblit, 2019:283).

The following section will investigate young adults' education, occupation, and income.

2.3.3 Education, occupation, and income

A person's education, occupation and income are usually linked, as it is generally perceived that an individual's education will determine their occupation, which will determine their income (Schiffman & Wisenblit, 2019:59).

2.3.3.1 Education

Only 6% of the total South African population have university degrees, an additional 6% have diplomas, and 3,4% have Technical and Vocational Education and Training (TVET) certificates (Khuluvhe, Netshifhefhe, Ganyaupfu & Negogogo, 2021). In Gauteng province, just over half (53,5%) of the young adult population have attended tertiary education, nearly 20% TVET and an estimated 16% College (Statistics South Africa, 2018). Of the white young adults residing in Gauteng, 60% attended tertiary education, almost 9% TVET and about 15% colleges (Statistics South Africa, 2018).

Of the young adult population (older than 15 years) residing in Tshwane, nearly 30% have completed high school, 33% have completed a university degree and approximately 35% have a postgraduate degree (City of Tshwane, 2021b). Of the white young adults (aged 20 to 39) residing in Tshwane, 42.1% completed high school and 41.3% obtained a tertiary Education (Statistics South Africa, 2018). Furthermore, young couples and families are among the highest to obtain tertiary education in South Africa (SAARF, 2013). Therefore, it is evident that the white young adult couples residing in Tshwane are highly educated.

2.3.3.2 Occupation

Young adult couples are some of the most employed groups in South Africa (SAARF, 2013). The national total workforce participation rate in 2019 amongst young adults aged 20 to 39 accounts for over half (53%) of the nation's workforce (City of Tshwane, 2021b). Just over a quarter (26%) of the workforce participation resides in Gauteng province, of which over half (54%) accounts for young adults, 20 to 39 years old (City of Tshwane, 2021b). The City of Tshwane is responsible for 28% of Gauteng's Gross Domestic Product (GDP), of which 66% are young adults aged 20 to 39 years (City of Tshwane, 2021b).

The SAARF report (2013) states that over 60% of young couples and over 50% of young families are employed. More than half of the young couples work full-time, an estimated 11% work part-time, whereas more than 40% of the young families work full-time and about 9% work part-time (SAARF, 2013). Although young couples and families have a high employment rate, one should note that around a quarter of young couples (22%) and young families (24%) are unemployed (SAARF, 2013).

The employed young couples and families are most active in Clerical, Sales, Service, Production, Mining, Professional, Technical, Agriculture, Artisan and related occupations (SAARF, 2013). Because of the young couples and families' good education and high employment, they will also be among the most financially affluent groups (SAARF, 2013).

2.3.3.3 Income

Young couples and families are some of the highest compensated groups in South Africa, with approximately 35% of the average household income between R11 000 and R20 000+ per month (SAARF, 2013). Most young couples (66.5%) and families (71.3%) reside in a house, cluster or townhouse and up to 75% of young couples and families own their own house (SAARF, 2013). Income also affects how young adult couples will spend their money. Therefore, their lifestyle characteristics are explored in the next section.

2.4 LIFESTYLE, FOOD PURCHASING AND CONSUMPTION CHARACTERISTICS OF YOUNG COUPLES IN SOUTH AFRICA

An individual's lifestyle can be defined as how "... a person or a group of people lives and works ..." (Hornby, Wehmeier, McIntosh, Turnbull & Ashby, 2005:853). Lifestyles show the interconnection between an individual's demographic information, how they spend their income and how they live (SAARF, 2014). A *family lifestyle* refers to how a specific family lives and what is important to them (Schiffman & Wisenblit, 2019:276). The family lifestyle will be determined by various influencing factors, such as the partners' upbringing, experiences, and goals (Schiffman & Wisenblit, 2019:276). Moreover, the family lifestyle can include the importance placed on the couple's professions and education, the type of skills to be learned and the recreational or entertainment activities they partake in, like dining out (Schiffman & Wisenblit, 2019:276).

SAARF's lifestyles classify diverse groups of people together that share similar behaviours towards, for instance, sports and other activities that assist in characterising certain groups of people (SAARF, 2014). Eleven groups have been identified according to the SAARF lifestyle classification: Sports; Cell Sophisticates; Gamers; Outdoors; Cell Fundamentals; Avid Readers; Gardeners; Homebodies; Showgoers; Traditionals and *Bars & Betters* (SAARF, 2014). Young couples and families associate the most with the *Bars & Betters* classification.

2.4.1 Bars & Betters

The *Bars & Betters* have the highest occurrence of married or cohabitating individuals from all 11 lifestyle groups identified, with an above-average percentage of coloured and white ethnicities (SAARF, 2014). These young couples and families are well-educated, have a high household income, have the highest percentage of full-time employment of all the SAARF lifestyle groups and reside mainly in the Gauteng province (SAARF, 2014).

Most *Bars & Betters* are cell phone owners and use computers at work and at home (SAARF, 2014). The *Bars & Betters* are hard workers and will catch up on work after hours. Still, they are also very sociable, with a high prevalence of hosting *braais*, attending dinner parties and visiting pubs, bars, and nightclubs (SAARF, 2014). They are heavy consumers of take-away food and enjoy dining out at restaurants or steakhouses (SAARF, 2014).

2.4.2 Characteristics of young couples in South Africa

Young couples' food and drink purchases include commodities such as white sugar, chicken (fresh or frozen), mealie meal, rice, tinned fish, spreads, soup, breakfast cereals, brick margarine or butter, long-life milk, sauces, sweets and chocolate-coated bars or candy and they are high consumers of creamers, pasta, frozen potatoes and cheese (SAARF, 2011). Young couples like non-alcoholic beverages like fizzy drinks, energy or stimulant drinks, instant coffee, and alcoholic beverages such as beer, whiskey and white spirits (SAARF, 2013).

Furthermore, they tend to have kitchen appliances like electric stoves and hotplates, microwave ovens and refrigerators or combined refrigerator-freezer units (SAARF, 2013). They also spend their income on insurance policies (e.g., life cover policy, funeral insurance, medical and short term insurance), clothing and shoes (women and men) and gambling (SAARF, 2013). Their internet usage is above average, they are keen magazine and newspaper readers and over 90% listen to the radio and watch television (SAARF, 2013). They also enjoy doing crosswords, puzzles, playing billiards, pool or snooker (SAARF, 2014). Moreover, they enjoy shopping and getting their hair done at salons (SAARF, 2014).

2.4.3 Characteristics of young families in South Africa

Young families spend their income similarly to young couples, except for clothing and accessories, on which less is spent, while more income is spent on child-related products and services (Koekemoer, 2006:74-78; Stedall & Venter, 2016:315).

Young families purchase high amounts of baby food, infant cereal or baby porridge and infant formula. They are high consumers of fresh or frozen chicken, rice, mealie meal, white sugar, spreads, tinned fish, breakfast cereal, long-life milk, sauces, sweets and chocolate-coated bars or candy (SAARF, 2013). They are also above-average consumers of creamers, instant meals, soup, pasta, frozen vegetables and potatoes, ice cream tubs, savoury and sweet biscuits, cooked porridge, brick-and-tub margarine or butter, cheese, flavoured milk and assorted chocolates (SAARF, 2013). Young families purchase non-alcoholic drinks such as fizzy drinks, fruit and vegetable juice, fruit juice concentrates, sports drinks and instant coffee (SAARF, 2013). They have lower consumption of alcoholic beverages than young couples, but beers, flavoured alcoholic drinks and whisky are favoured (SAARF, 2013).

Young families have kitchen durables like electric stoves, microwave ovens, refrigerators, freezers, or combinations (SAARF, 2013). Income is spent on insurance like life cover policies (including savings or education plans or policies), retirement, funeral, medical and short term insurance, as well as clothing and shoes (especially for children), and gambling (SAARF, 2013). As with young couples, young families' internet usage is above average. They are avid magazine and newspaper readers and have an over 90% rate of listening to the radio or watching television (SAARF, 2013).

2.5 CONCEPTUALISING THE WHITE YOUNG ADULT COUPLE

As discussed in section 2.3.1, the young adult couples for this study are demarcated as millennials aged 22 to 35 years. They are further demarcated into the family life stages of young couples and young families. Young couples are married or cohabitating and do not have any children, whereas the young families have children under 13 years of age, categorising the children in the preschool or elementary school phase. Most of these couples are part of the workforce, have a double household income, are house owners and do not reside with their parents.

2.6 CONCLUDING REMARKS

This research study aimed to gain insight and understanding into the cooking competence of white young adults residing in Tshwane, South Africa.

The literature review provided a comprehensive overview of the literature to conceptualise cooking competence, its key concepts, dimensions, and indicators. The origin of competence was first extrapolated to understand cooking competence. Furthermore, the review provided an overview of the key concepts relating to cooking competence. The in-depth literature review provided the research with enough background information to develop a conceptual framework, as discussed in **Chapter 3**.

Furthermore, to identify and conceptualise the young adult couples for this study, the literature review provided an in-depth discussion of the age, life stage in a family life cycle, education, occupation, income, and lifestyle characteristics of young adult couples residing in Tshwane, South Africa.

In the next chapter (**Chapter 3**), the conceptual framework developed for this study is discussed.

Chapter 3: CONCEPTUAL FRAMEWORK

Compiling the conceptual framework

In **Chapter 2**, the literature was reviewed, and cooking competence and its key concepts were conceptualised. A cooking competence dimensions table (**Table 3.1**) was developed, and the process is explicated and presented later in this chapter. The conceptual framework developed from this table guided the study and is visually represented in **Figure 3.1**. The framework enabled the researcher to conduct an exploratory study on the cooking competence of white young adult couples residing in Tshwane, South Africa.

The outline of the chapter begins with a background discussion and justification for using a conceptual framework for this study. The compilation of the cooking competence key concepts, its dimensions and related indicators follow. The conceptual framework development according to cooking competence is discussed and the chapter concludes with a visual representation of the framework.

3.1 BACKGROUND AND JUSTIFICATION FOR A CONCEPTUAL FRAMEWORK

Generally, a research study starts with a research problem. The literature is reviewed to substantiate the research problem and discover the existing literature on the topic. The literature is then rationally formulated (Collins & Stockton, 2018; Miles, Huberman & Saldaña, 2020). The main concepts to be investigated in the research study and possible interrelationships are then graphically and visually represented by the conceptual framework. It also becomes a guide for data collection and analytic processes (Collins & Stockton, 2018; Miles *et al.*, 2020).

Furthermore, the conceptual framework is developed by reflecting on established theory, as well as empirical knowledge and processes. This assists with the process of answering the research questions and objectives, as well as guides the researcher through the entire research process from start to finish (Maxwell, 2022; Miles *et al.*, 2020; Ravitch & Riggan, 2017; Ravitch & Carl, 2021).

The conceptual framework includes "... the theories, beliefs, assumptions, and concepts that inform the study ..." (Maxwell, 2022:10). It is said to be the "... dynamic meeting place of theory and method ..." (Ravitch & Riggan, 2017). It is developed by the researcher and is not an existing framework, it contains fragments from other sources, but the researcher develops

the overall framework for his/her specific qualitative study (Ravitch & Riggan, 2017; Ravitch & Carl, 2021).

Another vital factor to consider is that the conceptual framework is dynamic in that it changes as the research develops. Miles *et al.* (2020) state that it is a “... current and evolving version of the researcher’s *map* of the qualitative territory being investigated ...”. As the research progresses and the researcher becomes more knowledgeable about the research environment, congruently, the conceptual *map* becomes more distinguished and complex. The multidimensional and multifaceted effects of the research become apparent (Miles *et al.*, 2020; Ravitch & Riggan, 2017).

As seen in the literature review, there is much ambiguity in the literature relating to cooking competence. Furthermore, qualitative studies in this research field have criticised a categorical lack of theory in developing measuring constructs in these studies (McGowan *et al.*, 2017). Due to these reasons and the fact that the current study occurred in South Africa, pertaining to young adult couples, which is a different environment and study group as found in the reviewed literature, it was apparent and justified that a conceptual framework with a sound theoretical background was to be developed for this study.

Therefore, the conceptual framework is based on the central component of cooking competence (the theoretical background) and will guide and act as a blueprint for the study (Collins & Stockton, 2018; Miles *et al.*, 2020).

The following section describes the compilation of the conceptual framework according to cooking competence.

3.2 THE COMPILATION OF A CONCEPTUAL FRAMEWORK PERTAINING TO COOKING COMPETENCE

A cooking competence dimensions table has been compiled from the literature review of **Chapter 2** on cooking competence, as shown in **Table 3.1**. Cooking competence key concepts, dimensions and indicators from the relevant literature were identified.

It must be noted that components and indicators identified as part of the dimensions table were used that related to the aim and objective of this study. Therefore, only relevant cooking competence and key concepts of cooking knowledge and skills were used, so if the information did not relate to the young adults as conceptualised for this study, the information was also

omitted from the table. A discussion follows the compilation of literature that developed the cooking competence dimensions table.

TABLE 3.1: COOKING COMPETENCE DIMENSIONS TABLE⁵

Cooking Competence		
Key concepts	DIMENSIONS	INDICATORS
Cooking knowledge	Academic	Knowledge of: • Food (e.g., different cuisines, food varieties, ingredient characteristics, combinations, and complementation) • Food preparation (e.g., knowledge of recipes, measuring and weighing recipe ingredients, basic food chemistry, preparing tasty, nutritious meals) • Nutrition for good health (e.g., special dietary requirements, food preservatives and additives, and appropriate portion sizes) • Food trends and fashions (e.g., foods, food choices, preparation methods in vogue) • Where food comes from (e.g., food origins, history, location, and seasonality) • Food hygiene and safety practices (e.g., food, kitchen, and personal hygiene and safe food practices) • Information sources (e.g., where to find information like food labels, electronic data, people, and cookbooks)
	Perceptual	• The practical knowledge obtained through memories and past experience • Troubleshooting • Understanding how to handle ingredients ◦ Sensory perception ▪ Understand the properties of food in terms of senses ▪ Assess the stages of food preparation in terms of senses ◦ Knowledge and reasoning capabilities of food preparation processes ▪ The effect of combining different ingredients ▪ The effect of temperature on the ingredients
	Conceptual	• Ability to conceptualise the outcome of a dish • Good monitoring, observing and adaptation of knowledge ◦ Evaluation and selection of available and accessible resources ◦ Creative and experimenting abilities ◦ Improvisation, adapting and substituting abilities • Cognitive ability to reproduce a recipe (e.g., reproducing recipes without following instructions)

⁵ Compiled from literature review seminal sources on cooking competence (Begley & Gallegos, 2010a, 2010b; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Michaud, 2007; Short 2002, 2003, 2006; Vanderkooy, 2010; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011).

TABLE 3.1: COOKING COMPETENCE DIMENSIONS TABLE⁵ (CONTINUE)

Cooking Competence		
Key concepts	DIMENSIONS	INDICATORS
Cooking skills	Mechanical	- Skills in basic food preparation - Food preparation techniques and methods - Active food preparation activities (e.g., cutting and frying) - Passive food preparation activities (e.g., boiling and baking) - Skills to operate kitchen equipment and appliances - Skills to use the appropriate kitchen utensils, equipment or appliances according to the food preparation activity
	Planning	- Organisational and timing skills - Planning and scheduling skills before the food preparation - Menu planning skills - Skills to shop and purchase for food - Planning and scheduling skills during the food preparation - Time management skills during the food preparation - Multi-tasking skills → The skills to perform multiple meal preparation activities simultaneously → The skills for all dishes to be ready to serve at the same time → The skills to schedule activities before and during the meal preparation process - Food storage planning

3.2.1 Food preparation knowledge

Chapter 2 identified food preparation knowledge as a cooking competence sub-concept. The dimensions of cooking knowledge include academic, perceptual, and conceptual knowledge. A discussion of each dimension's compilation follows.

3.2.1.1 Academic knowledge

Seven academic knowledge dimension indicators were identified from the reviewed literature. These indicators are the knowledge of food, food preparation, nutrition for good health, food trends and fashion, where food comes from, food hygiene and safety practices and knowledge of one's information sources.

Knowledge of foods was related to an individual's knowledge of *different cuisines* and *varieties*, such as the difference between Italian and Thai cuisine and the ingredients

associated with each (Short, 2002:103, 2003, 2006:58). It included knowledge of *ingredients* and *food characteristics*, such as how to use specific ingredients and *food combinations* that *complement* each other (Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Michaud, 2007:16; Short, 2003; Vanderkooy, 2010).

Knowledge of food preparation is an individual's *knowledge of recipes*, how to read and follow recipes (including food preparation terminology), different food preparation techniques and methods, and knowledge of kitchen food preparation equipment and how to operate them. It is the knowledge of how to *measure and weigh recipe ingredients* and knowledge of *basic food chemistry*, like how ingredients react with one another (Begley & Gallegos, 2010a; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Short, 2002:103, 2003, 2006:52; Vanderkooy, 2010). It is also the knowledge of preparing *tasty, nutritious meals*, including how to retain nutrients during the food preparation process and reduce ingredients (e.g., sodium and sugar) that caused health concerns (Begley & Gallegos, 2010a; Bursey *et al.*, 2010; Fordyce-Voorham, 2011; Wagner, Ploetz *et al.*, 2011).

Knowledge of nutrition for good health comprises an individual's knowledge of *special dietary requirements*, *food preservatives*, *additives*, and *appropriate portion sizes* (Begley & Gallegos, 2010b; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2002:104, 2003, 2006:58; Vanderkooy, 2010; Wagner, Ploetz *et al.*, 2011).

The **knowledge of food trends and fashions** relates to an individual's knowledge of *foods*, *food choices* and *preparation methods in vogue* (Begley & Gallegos, 2010b; Short, 2003).

Knowing where food comes from pertains to *food origins*, *history*, *location* and *seasonality* (Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Short, 2003).

Knowledge of food hygiene and safety practices includes an individual's *knowledge of food, kitchen and personal hygiene* and *safe food practices*. It involves knowing how to handle and safely prepare food to prevent illness, how to safely operate kitchen utensils, equipment and appliances to prevent injuries, as well as personal hygiene like washing hands when working with food (Begley & Gallegos, 2010b; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2002:103, 2003, 2006:58).

Lastly, **knowledge of information sources** is related to an individual's knowledge of how to obtain required information, such as *food labels*, *electronic data* (e.g., internet sources), *people*

and *cookbooks* (Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011). The second cooking knowledge dimension is perceptual knowledge.

3.2.1.2 Perceptual knowledge

The following indicator was identified from reviewing the literature: **an individual's practical knowledge obtained through memories and past experiences**. It relates to recalling *memories, past mistakes and experiences* that resemble a current situation and then deciding what to do next (Fordyce-Voorham, 2011; Short, 2003).

Perceptual knowledge is related to **troubleshooting**, as cooking knowledge is obtained from practising through trial and error, which gives experience (Fordyce-Voorham, 2011). It is associated with an individual's **understanding of how to work with ingredients** from experience (Fordyce-Voorham, 2011; Short, 2003). The knowledge of how to work with ingredients involves two aspects. First, individuals' *sensory perception* is the cognitive ability to use their senses (e.g., taste, colour, and texture) and make decisions based on these senses during food preparation. Furthermore, it allows for understanding the properties of food and assessing the stages of food preparation in terms of their senses. For instance, it makes it possible to link the current state of the food preparation (by judging through senses such as smell or texture) to the desired end product (Begley & Gallegos, 2010a; Bursey *et al.*, 2010; Short, 2003; Vanderkooy, 2010; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011). Secondly, it involves the *knowledge and reasoning capabilities of food preparation processes*, such as knowing the effect of combining different ingredients or the effect of temperature on ingredients. Therefore, knowing and foreseeing how ingredients will react when combined or heated (Begley & Gallegos, 2010a; Bursey *et al.*, 2010; Michaud, 2007:16; Short, 2003; Vanderkooy, 2010; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011). The last cooking knowledge sub-concept to discuss is the conceptual knowledge dimension.

3.2.1.3 Conceptual knowledge

From the literature reviewed, the conceptual knowledge dimension was compiled into three leading indicators: an individual's ability to conceptualise the outcome of a dish, good monitoring, observation and adaptation knowledge and the cognitive ability to reproduce a recipe.

The **ability to conceptualise the outcome of a dish** pertains to the ability to envisage the outcome of the meal being prepared (Begley & Gallegos, 2010b; Short, 2003; Vanderkooy, 2010).

Good monitoring, observation and adaptation knowledge are related to *evaluating and selecting from an individual's available and accessible resources*. For instance, an individual will determine the time, ingredients, and budget available for food preparation. The identification of these resources available leads to an individual's *creative and experimenting abilities*, which require *improvisation, adapting and substitution abilities*. For example, it is the ability to improvise, to alter a food preparation method to save time on food preparation, adapt a recipe to create a healthier variation of a dish, or substitute an ingredient for a more affordable alternative to save costs (Begley & Gallegos, 2010a, 2010b; Bursey *et al.*, 2010; Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2003; Vanderkooy, 2010; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011).

Lastly was the individuals' **cognitive ability to reproduce a recipe**. It involves creative and designing abilities in being able to *reproduce a recipe without following instructions* and reproduce recipes not prepared before (Short, 2003; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011). The following section discusses the second dimension of cooking competence: cooking skills.

3.2.2 Cooking skills

In **Chapter 2**, cooking skills were identified as sub-concepts of cooking competence. Cooking skills comprise two dimensions, namely mechanical and planning skills. A discussion of each dimension's compilation follows.

3.2.2.1 Mechanical skills

The mechanical skills dimension involves the actual physical food preparation activities and through the literature, one primary indicator was identified and related to an individual's **skills in basic food preparation** (Bursey *et al.*, 2010; Fordyce-Voorham, 2011; Short, 2003). It included *food preparation techniques and methods*, such as baking techniques and other skills, such as chopping, mixing or microwaving, or the skills to perform dry food and moist food preparation methods (Begley & Gallegos, 2010a, 2010b; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2003; Vanderkooy 2010). The food preparation techniques and methods were divided into active (e.g., cutting and frying) and passive (e.g., baking and microwaving) food preparation activities (Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011).

Secondly, it includes the skills individuals need to *operate kitchen equipment and appliances*. Thirdly, it relates to the skills required to use *the appropriate kitchen utensils, equipment and*

appliances according to the appropriate food preparation activity (Begley & Gallegos, 2010a; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011). The second cooking skill that will be discussed is the planning skills dimension.

3.2.2.2 Planning skills

As the reviewed literature shows, planning skills have two leading indicators of organisational and timing skills and food storage planning. Each will be briefly discussed.

Organisational and timing skills in meal preparation have been compiled into two indicators, the *planning and scheduling skills before the food preparation* and the *planning and scheduling skills during the food preparation* (Bursey *et al.*, 2010; Michaud, 2007:16; Short, 2006:56).

The *planning and scheduling skills before the food preparation* pertain to preliminary planning and organising of the meal process through menu-planning skills and the skills to purchase and shop for food (Begley & Gallegos, 2010b; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Short, 2006:56; Vanderkooy, 2010; Wagner, Geleijnse *et al.*, 2011).

Menu planning skills include compiling menus considering family dietary requirements, having budgeting skills, and checking household stock for required and available food products (Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Short, 2006:60). Menu planning also involves the skills to plan to shop for food and make shopping lists on what needs to be purchased, from the food items that are out of stock at home (Desjardins & Azevedo, 2013; Fordyce-Voorham 2011; Short, 2006:60).

The second pre-planning skill involves the skill of purchasing and shopping for food. It is the actual shopping where individuals need the skill to source and acquire food items from a grocery store, have the skills to *shop around* and make effective food purchasing decisions. Furthermore, it involves skills that allow individuals to use their time effectively during shopping and demonstrate their skills to not only purchase food for immediate food preparation. Moreover, because of their pre-planning skills, they can purchase items that were identified as unavailable at home and, in doing so, maintain the household food levels (Bursey *et al.*, 2010; Fordyce-Voorham, 2011; Short, 2006:60; Wagner, Geleijnse, *et al.*, 2011; Wagner, Ploetz *et al.*, 2011).

The indicator of *planning and scheduling skills during food preparation* involves the timing and organisational skills to plan and schedule the execution process of these activities (Bursey *et*

al., 2010; Short, 2006:57; Wagner, Geleijnse *et al.*, 2011). Preparing food requires time management skills during food preparation to plan the chronological flow, coordination and timing of food preparation activities to be completed (Begley & Gallegos, 2010b; Fordyce-Voorham, 2011; Short, 2006:56).

Multi-tasking skills are a time management sub-skill and essential during food preparation. Three types of multi-tasking skills were identified. Firstly, the skills to perform multiple meal preparation activities simultaneously, which is required for complex meal preparation and where different components of the meal need to be prepared at the same time to produce the finished meal (Fordyce-Voorham, 2011; Short, 2003; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz, *et al.*, 2011). Secondly, ensuring food prepared is ready to serve at the same time, therefore the organisational skills to complete all the meal components and related tasks so that the meal is completed and ready to serve at the same time (Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2003). Lastly, there are the skills to schedule activities before and during the meal preparation process. These involve fitting in other non-food preparation tasks in between, such as cleaning, looking after children while preparing food, or other non-food preparation tasks that need to be completed (Begley & Gallegos, 2010b; Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2003).

The second leading indicator of planning skills is **food storage planning**, which is the individual's planning skills involving storing ingredients, food produce and cooked foods (Bursey *et al.*, 2010; Desjardins & Azevedo, 2013).

The cooking competence dimensions table served as the basis for this study. The conceptual framework was based on the cooking competence dimensions in **Table 3.1** and was represented graphically in **Figure 3.1** on how the research will be executed.

3.3 CONCEPTUAL FRAMEWORK

As illustrated in **Figure 3.1**, the conceptual framework was developed for the study and visually presented the study's research process.

The study investigated the cooking competence of young adult couples residing in Tshwane, South Africa. As previously explained, the sub-concepts of cooking competence comprise cooking knowledge and cooking skills. Cooking knowledge includes the dimensions of academic, perceptual and conceptual knowledge and their relating indicators, and cooking skills include the dimensions of mechanical and planning skills and their relating indicators. This study aimed to explore and describe the cooking knowledge and skills of young adult

couples in Tshwane, South Africa, to gain insight and understanding into their cooking competence. The conceptual framework includes the objective and sub-objectives of this study, as indicated in **Figure 3.1**.

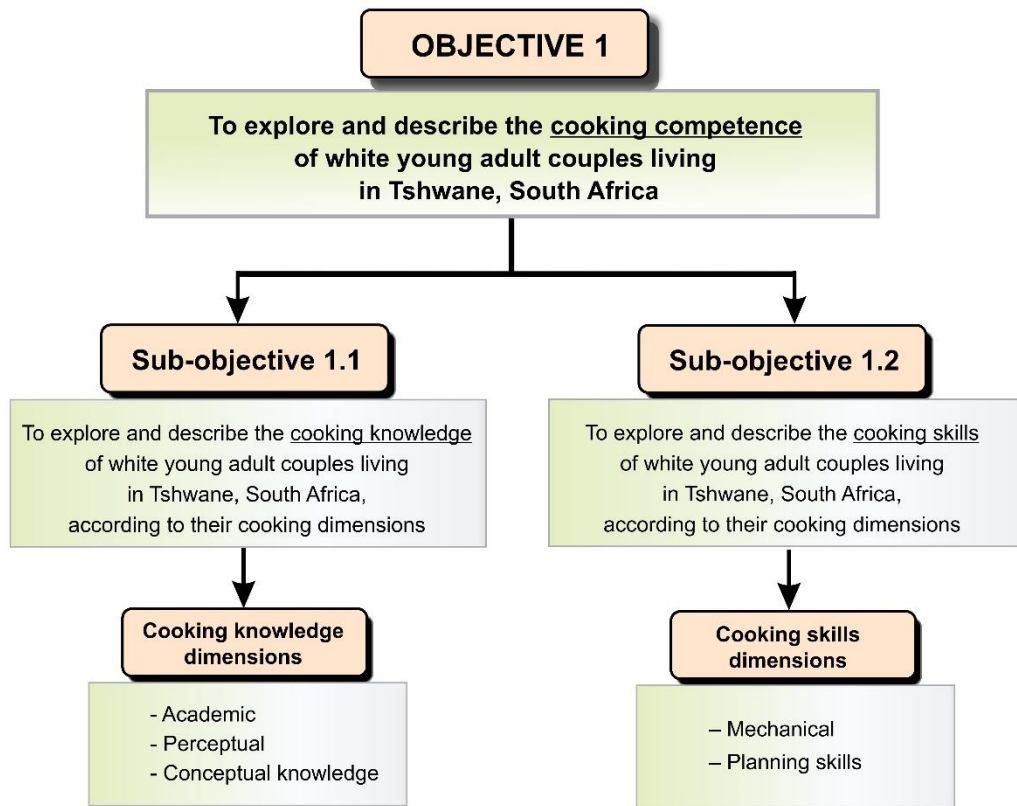


FIGURE 3.1: CONCEPTUAL FRAMEWORK

3.4 CONCLUDING REMARKS

In this chapter, the use of a conceptual framework was justified. As described in the literature review, the components related to cooking competence were used to compile a cooking competence dimensions table. The table describes the cooking competence sub-concepts, their dimensions and relating indicators from which the conceptual framework was conceptualised. It included the research objective and sub-objectives and was used as the visual representation of the research process and the dimensions table as the basis for the study's data analysis.

The next chapter (**Chapter 4**) discusses this study's research design, methodology and data collecting process. It describes the research design, sampling, criteria of inclusion and data collection methods chosen for the study. It is followed by the data collecting procedures and analysis processes.

Chapter 4: RESEARCH DESIGN AND METHODOLOGY

Conducting the research

In **Chapter 3**, cooking competence and its related concepts have been conceptualised and the conceptual framework was developed for this study.

This chapter discusses how the researcher used the research design and methodology to explore and describe the current cooking competence of white young adults. The research design and justification for the researcher's role as a research instrument are provided, followed by the research setting and participant selection criteria. The data collection techniques, data collection and data analysis and interpretation follow. Lastly, the ethical considerations of the research are presented.

4.1 RESEARCH DESIGN

As discussed in the previous chapters, cooking competence is a multifaceted and complex concept and therefore it necessitates considering all aspects of this concept. It requires an in-depth exploration into the cooking skills and knowledge of the participants to understand their cooking competence better. Therefore, a qualitative approach was considered well-suited to explore and describe young adults' cooking competence in Tshwane, South Africa.

Qualitative research was a valuable research paradigm for this study, as it helped to obtain a deeper understanding of the participants' cooking competence. This type of paradigm focuses on exploring and understanding the participants' behaviours, perceptions, and connotations (Ares & Varela, 2018:9; Creswell & Creswell, 2018:41). Qualitative researchers review their research inductively, emphasising the meanings that the participants assigned to the research subject and reporting on the complexity of the research area as deemed necessary (Ares & Varela, 2018:9; Creswell & Creswell, 2018:41).

The qualitative approach aims to understand the research problem by means of what it signifies to the participants and is used when the researcher wants to understand a complex situation (Fouché, 2021; Valentin & Gomez-Corona, 2018:103). It strives to find "... knowledge as expressed in normal language; it does not aim at quantification ..." (Kvale & Brinkmann, 2015:33). Therefore, the researcher gains insight into the participant's real-life through words and not numbers as with quantitative data collection (Kvale & Brinkmann, 2015:33). Furthermore, the qualitative approach is not a fixed procedure that can be replicated, as in quantitative research. Instead, it is a more flexible approach that evolves and is receptive to

possible changes in the research environment throughout the research process (Fouché, 2021; Kumar, 2019; Merriam & Tisdell, 2015:8).

To accomplish the overall aim of the study, to explore and describe the cooking competence of white young adults residing in Tshwane, South Africa, requires that the various dimensions of cooking competence (as illustrated in the conceptual framework in **Chapter 3**) be taken into consideration in the study's research design. Therefore, an ethnographic inquiry strategy was deemed the most appropriate design for this study to explore and understand the participants' cooking competence in terms of cooking knowledge, skills and related indicators.

4.1.1 Ethnographic strategy of enquiry

Ethnography is becoming increasingly popular in consumer research, as it adopts an internal perspective which allows for understanding and insight into the subculture's attributes, behaviours, motives, practices, social trends, and cultural meanings that they ascribe to the research focus (Merriam & Grenier, 2019:135; Valentin & Gomez-Corona, 2018:104).

An ethnographic research design is the most appropriate for this study as it "... provides a cultural understanding of consumers through sharing activities like cooking, shopping, and eating ..." (Valentin & Gomez-Corona, 2018:104). By using an emic perspective, ethnography allows the researcher to gain insight and understanding of how the subculture (i.e., the white young adults) perceive the research focus (i.e., cooking competence). This is done by providing their own experiences, stories, and viewpoints from within their own environments and in their own words (Merriam & Grenier, 2019:135). Ethnography "... reveals what consumers actually do, rather than what they say they do ..." (Valentin & Gomez-Corona, 2018:103).

Furthermore, ethnography provides richness, quality, and depth of data (Nieuwenhuis, 2007:76-77; Valentin & Gomez-Corona, 2018:105). Therefore, to fully explore the complexity and multifaceted nature of the cooking competence of young adults in Tshwane, South Africa, a "thick description" of data was necessary, which is at the core of an ethnographic approach (Merriam & Grenier, 2019:136).

Before proceeding to a detailed description of the methodology, the researcher's role as a research instrument in a qualitative study will be explained. The researcher acts as a bridge between the research design and the empirical evidence, through the role of a research instrument (Denzin & Lincoln, 2018).

4.2 RESEARCHER AS RESEARCH INSTRUMENT

The researcher (i.e., the ethnographer) is a critical instrument in qualitative research and acts as an investigator in the research process (Creswell & Creswell, 2018:257; Lichtman, 2014:18). The role of the researcher is pivotal, as it is the researcher that gathers the necessary information, examines and processes the data and provides meaning and understanding to the research (Creswell & Creswell, 2018:257; Lichtman, 2014:2). The researcher does not rely on questionnaires or formerly developed instruments, like in quantitative research (Creswell & Creswell, 2018:257). Instead, a qualitative researcher uses his or her skills, obtained in their field of expertise, to execute a diverse set of data collecting methods to observe and document the participants' behaviours, traditions and lifestyles concerning the research topic (Denzin & Lincoln, 2018; Schurink *et al.*, 2021). The researcher can do this to understand research as an interactive process, influenced from the perspective shaped by background, beliefs and ideologies "... All information is filtered through the researcher's eyes and ears and is influenced by his or her experience, knowledge, skill, and background ..." (Lichtman, 2014:18).

However, as the qualitative researcher is intensely involved with their participants, it creates various "strategic, ethical and personal issues" in the research process (Creswell & Creswell, 2018:260). Therefore, the researcher needs to explain their role in the research regarding how past experiences like qualifications, training, work experiences and demographics, like culture, ethnicity, and race, connect to the study (Creswell & Creswell, 2018:260). Furthermore, it is essential to identify how these experiences may influence the researcher's interpretations of the findings to limit biases and enhance the study's trustworthiness (Creswell & Creswell, 2018:260). Therefore, it is important to discuss the researcher's competencies and past experiences to establish the bridge between the data collection and empirical evidence from the point of the researcher as a research instrument for the execution of the study's research purpose.

4.2.1 Qualifications and training

The researcher acquired the competencies to conduct this study through prior academic training and work experiences. The researcher has a Bachelor's degree in Consumer Science, majoring in Hospitality Management. As part of the degree requirements, the researcher enrolled for the Research methodology (PGB 410) module and conducted a fourth-year Research project (PGB 420). Therefore, the researcher was already introduced to and familiarised with gathering and analysing data and ethical issues that needed to be considered during the research process.

In preparation for this current study, the researcher completed three modules, namely: Theoretical frameworks in consumer studies (HSK 812), Research methodology (NMN 814) and Consumer facilitation (VBF 811). A systematic study of the available academic literature on cooking competence was undertaken, including a thorough search of the literature available on cooking competence (including cooking knowledge and skills) and young adults, locally and internationally. Furthermore, the researcher attended and completed a short course on using and applying the computer software programme *Atlas.ti 8* to analyse the data, which further contributed to the knowledge and skills she required to undertake this study (Archer, 2013:1).

4.2.2 Work experiences

In her professional capacity, the researcher acquired specific competencies throughout her career leading up to this study: as a Catering Coordinator at the National Research Foundation (NRF), where staff were managed; as the owner of a cooking training programme for children, Cheflet's Cook™; as a part-time lecturer in Food commodities and preparation (VDS 210) and Cultural eating patterns (VDS 221); and, provided training to first-, second- and third-year university students. For a decade, the researcher managed and trained employees, students and children from various age and cultural groups in basic cooking knowledge and skills. Therefore, the researcher was exposed to different age and cultural groups and obtained a good general understanding of these individuals' way of thinking about food preparation, their values, beliefs, and practices. It made the researcher knowledgeable about the topic being investigated.

4.2.3 Demographics

The researcher grew up and still resides in the Tshwane Metropolitan area and has first-hand knowledge of the environment in which the participants live and work. She is also a white Afrikaans-speaking female from the same cultural background and age group as the participants. She understood the participants' culture, background, and perspective, which contributed to her understanding of the information obtained. The researcher could relate to the *lived* world of the participants. Furthermore, the researcher became part of the participants' social world and because of the socially created research setting, it is acknowledged that the researcher could not take a neutral stand, and it was impossible to conduct a value-free inquiry (Denzin & Lincoln, 2018). The value commitments of the researcher, therefore, have to be transparent. This requires that the researcher becomes sensitive to the social relationships formed and the personal feelings that develop during fieldwork (Denzin & Lincoln, 2018; Schurink *et al.*, 2021).

4.3 RESEARCH SETTING AND SELECTION CRITERIA FOR PARTICIPATION

This study deals with white young adult couples residing in Tshwane and was therefore conducted in the City of Tshwane, South Africa (Valentin & Gomez-Corona, 2018:107). The fieldwork location is one of the most significant components in ethnography, as the selected societal area should be best suited for the data collection techniques (Valentin & Gomez-Corona, 2018:107).

The Gauteng province is one of nine provinces in South Africa and is inhabited by just over 26% of the South African population, making it the most populated province in South Africa (Municipalities of South Africa, 2023; Government Communications & Mokoena, 2019:3). Nearly 30% of the country's young adult population resides in the Gauteng province (Statistics South Africa, 2018). Gauteng is divided into three metropolitan municipalities: the City of Ekurhuleni, the City of Johannesburg, and the City of Tshwane (Municipalities of South Africa, 2023).

The City of Tshwane (**Figure 4.1**) is South Africa's capital, the fourth most widespread municipality in South Africa and the second biggest in Gauteng, with seven regions and 105 wards (Statistics South Africa, 2021a). Tshwane covers 121 km from east to west and 108 km north to south and occupies 30% of Gauteng's surface, making it the third-largest city in the world (City of Tshwane, 2023). The City of Tshwane's total population for 2019 indicated a national total of over 3.5 million, which accounts for 24,2% of the Gauteng province and 6.0% of South Africa's total population (City of Tshwane, 2021b). The total young adult population (20-39 years) of Tshwane is 36.3%, of which 24.25% are of the white ethnic group and makes up about a quarter of the population in Tshwane (City of Tshwane, 2021b). According to the SAARF life stage report (2013a), the South African young couple and young family communities primarily reside in metropolitan areas and represent above average in the Gauteng province.

The report's discussion shows that Tshwane has a high young adult population and an above-average representation of the study group (i.e., white, young couples and families). Therefore, it can be justified that Tshwane is an ideal location to conduct fieldwork for this study.

The participants were recruited from various areas within Tshwane to collect the research data. Tshwane is divided into seven regions as depicted in **Figure 4.2** (City of Tshwane, 2021a).



FIGURE 4.1: GEOGRAPHICAL AREA OF THE CITY OF TSHWANE IN THE GAUTENG PROVINCE, SOUTH AFRICA. (Source of original data: City of Tshwane, 2019a, 2019b - maps adapted by technical editor)

The data collection, as illustrated in **Figure 4.2**, took place within the following regions, where the predominantly white population resides in Tshwane.

- **Region 2:** Sinoville.
- **Region 3:** Brooklyn, Hatfield, Menlo Park; Monument Park, Queenswood, Waterkloof Park.
- **Region 4:** Irene, Centurion, Highveld and Wierda Park.
- **Region 6:** Erasmuskloof, Faerie Glen, Newlands, Rietvalleirand, Wingate Park and Zwavelpoort.

For a comprehensive table of the specific areas and places visited during data collection refer to **Addendum A**.

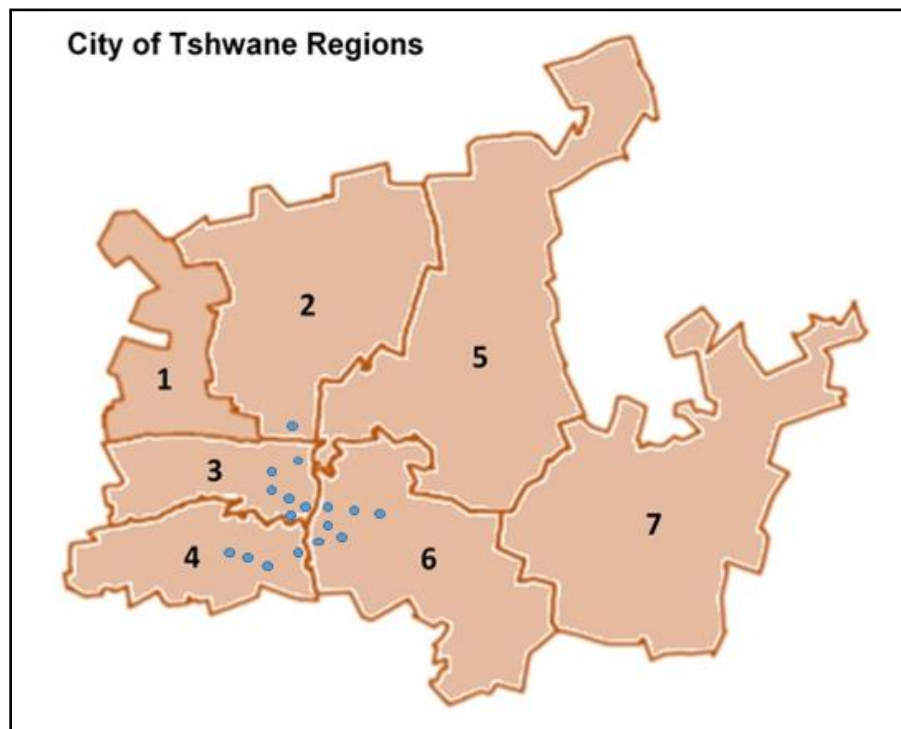


FIGURE 4.2: TSHWANE REGIONS AND PLACES VISITED, MARKED AS BLUE DOTS, DURING DATA COLLECTION

Initially, it was proposed that the fieldwork be conducted at the Hatfield Campus of the University of Pretoria, as this is a neutral location. The researcher was concerned that the participants might feel uncomfortable in their home environment. However, the researcher did not anticipate the time barriers the participants would have, so it was decided to allow them to choose the locations they felt most comfortable with. A total of 17 locations were visited during data collection. A discussion of the data collection techniques follows.

4.4 DATA COLLECTION TECHNIQUES

Personal documents and audio-visual materials were used as visual ethnographic data collecting techniques. Two of these were achieved through the participants' FDs and photo-elicitation. Participants provided FDs and photographs of their FDs and the researcher used an image of a pre-selected recipe image for the photo-elicitation. These items were used as stimulus techniques for discussions during two semi-structured interviews and the data were captured through audio recordings. Other data collection techniques involved observations captured through field notes (Creswell & Creswell, 2018:264-265; Merriam & Grenier,

2019:136). A discussion of visual ethnography, participants' personal documentation, semi-structured interviews and observations follow.

4.4.1 Visual ethnography

Visual ethnography is a data collection technique that differs from the generally known standard techniques used in qualitative research, such as observations and interviews; it includes personal documents, audio-visual and digital materials collected in the process (Creswell & Creswell, 2018:263). This technique is ideal for "... capturing and expressing perceptions and social realities of people ..." (Given, 2008:935).

4.4.2 Participants' personal documentation

The study used personal documents, such as FDs, as one of the data collection techniques (Creswell & Creswell, 2018:264; Strydom, 2021). The use of personal documents was a valuable data collection technique, as it assisted the researcher in gaining a holistic view of the participants' perspectives and enabled the researcher to explore and better understand the participants' cooking competence (Strydom, 2021). Furthermore, the researcher was able to gain an understanding of the participants' cooking competence without direct observation and provided the researcher with the opportunity to gain information into the participants' daily lives in an unobtrusive manner (Bennett, 2014:7; Creswell & Creswell, 2018:264). Participants' FDs will be discussed next, followed by photo elicitations.

4.4.2.1 Food diaries (FDs)

Participants were requested to keep a five-day FD of dinner meals they had prepared. They were emailed a FD template they could use if they wished to. The participants were required to log how they prepared the meals at home.

Themes included:

- The name of the recipe or dish prepared.
- Listing ingredients used.
- Providing the estimated amount and quantities of ingredients used.
- Detailed procedures followed (exactly how the dish was prepared).
- Listing kitchen equipment and utensils used.
- Photograph of each of the dishes prepared.

An example of a FD template can be seen in **Addendum B**.

Reference examples for participants' FD entries are illustrated in **Table 4.1**. A reference to the participant's photographs can be identified by the abbreviation FD, followed by the relevant participating couple and a FD entry number.

TABLE 4.1: EXAMPLES OF REFERENCE TO FOOD DIARY ENTRIES

Food diary (FD) entry	Participation couple	FD entry no.	Examples of reference to FDs of participants
Includes both participants' FD recipes and photographs	YF	2	FD: YF1 no.2
	YC	3	FD: YC4 no.3
	CC	5	FD: CC8 no.5

Photo-elicitation will be discussed next.

4.4.2.2 Photo-elicitation

Photo-elicitation is an unobtrusive method of obtaining data and allows participants to convey their experiences first-hand (Bennett, 2014:8-9; Creswell & Creswell, 2018:264). Photo-elicitation is an excellent data collection tool used as a stimulus technique in soliciting conversation (Clark, Foster, Bryman & Sloan, 2021). It creates a basis for engaging with participants by eliciting them to converse their thoughts on the subject illustrated in the photograph (Clark *et al.*, 2021). Photo-elicitation as a data-gathering technique was utilised in two ways. Firstly, participants were asked to photograph each of the five dinner meals they had prepared and log it in their FD. Secondly, the researcher used an independent image and photograph as a stimulus technique.

4.4.2.2.1 Photo-elicitation: Participants' photographs

The participants' FDs and photographs acted as stimuli that provided information on the *what* and *how* questions. In addition, using photo-elicitation served as a memory aid for the FDs to participants during the two semi-structured interviews, which enhanced the discussions (Bennett, 2014:8). The photographs were used for illustrative purposes, which provoked interest in the data, which can be uninteresting in normal circumstances. The photographs elicited interest, which assisted the researcher in obtaining data that otherwise would not have been possible with standard data collecting techniques (Clark *et al.*, 2021). As the photographs were research-generated, these acted as an additional data source that contributed to the study. Participants' personal documentation can be viewed in **Addendum C**.

4.4.2.2.2 Photo-elicitation: Independent recipe and photograph

The researcher pre-selected a recipe to use as a stimulus during the first semi-structured interview. The researcher provided the pre-selected recipe to stimulate conversation as an

additional source of data collection to explore, understand and gain insight into the participants' cooking competence.

The recipe chosen was a *phyllo and feta fig tart with nuts, cinnamon and honey* (Fresh Living, 2015). Pick 'n Pay's Fresh Living magazine is a multi-award-winning magazine (Dentsu, 2020). The magazine has over two million monthly readers and has grown to over 470 000 copies per month (Van Schalkwyk-Haley, 2020). Furthermore, it is the first South African food magazine to be launched in Braille to its customers (Dentsu, 2020; The Citizen, 2019). The magazine is issued monthly, and recipes are family orientated. It is seasonal and readily obtainable, and the magazine has some of the highest circulation and readership figures in South Africa within its category (The Citizen, 2019; Van Schalkwyk-Haley, 2020). Compared to other South African food magazines, Fresh Living magazine's recipes are explained thoroughly, it is easy to follow, and cooking skills are clearly identified. The recipe chosen reflected all the dimensions of the conceptual framework with its indicators and was ideal to use as a stimulus. The stimulus recipe is attached as **Addendum D**. Ethnographic semi-structured interviews as data collection techniques are discussed next.

4.4.3 Semi-structured interviews

Semi-structured interviews were chosen as the interview structure for this study. A semi-structured interview includes some structured questions, which act as a list that guides the researcher through an interview to explore the research problem and when specific information is required from the participants. It is much more flexible than a highly structured interview and there is no "predetermined wording or order" (Merriam & Tisdell, 2015:110).

Semi-structured interviews were best suited for this study, as the researcher aimed to explore and understand the cooking competence of young adults. Therefore, to understand the participants' cooking competence, they must be free to express their reality and ideas. Furthermore, for the researcher to understand the participants cooking competence, she had to obtain information regarding the academic, perceptual, and conceptual knowledge and the mechanical and planning skills of the participants, which collectively form part of their cooking competence (see **Chapter 3**). An interview protocol was set up to guide the research and a decision was made regarding the interview approach and how the interviews would be recorded.

4.4.3.1 Interview protocol

An interview protocol is the researcher's plan developed for interviews comprising no more than two pages, with five to ten questions prepared and enough space provided for field notes or if the audio-recorder does not work (Creswell & Creswell, 2018:266). The interview protocol starts with an introduction, where the researcher briefly explains what the participants should expect from the interview and answers questions that might arise from participants (Creswell & Creswell, 2018:267).

The questions for the semi-structured interviews were set up according to opening and content questions. The opening question is an ice breaker, and a question should be framed to get participants to talk about themselves, eliciting the participants' views and opinions (Creswell & Creswell, 2018:263, 267). Using this technique, the researcher believed it put participants at ease; therefore, more authentic, and rich data were obtained.

Content questions are the sub-questions during an interview that analyse the central research theme of the research. The aim is that the collective sub-questions provide the researcher with an understanding of the central theme. Probes were used in the content questions to assist the researcher in obtaining more information, explanations, and ideas from participants (Creswell & Creswell, 2018:267). For this study, the researcher used the cooking competence dimensions table to develop content questions that would provide insight into the participants' academic, perceptual, and conceptual knowledge and mechanical and planning skills (Begley & Gallegos, 2010a, 2010b; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Michaud, 2007; Short 2002, 2003, 2006; Vanderkooy, 2010; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011). The researcher prepared the questions according to personal documentation. An example of the researcher's semi-structured interview questions can be seen in **Addendum E**.

Lastly, interviews ended with closing instructions, where the researcher thanked the participants for taking the time to participate in the interview, scheduling a follow-up interview and ensuring the participants' confidentiality (Creswell & Creswell, 2018:267).

4.4.3.2 Interview approach

Since young adults' cooking competence is unknown in Tshwane, the researcher adopted a combination of a qualitative and deliberate naiveté interview approach (Kvale & Brinkmann, 2015:33). The qualitative semi-structured interviews must be as detailed and unpretentious as possible to be rewarded with the actuality of the research question posed (Kvale & Brinkmann, 2015:33).

The qualitative approach "... seeks qualitative knowledge as expressed in normal language; it does not aim at quantification ..." (Kvale & Brinkmann, 2015:33). Therefore, the researcher gains insight into the participant's real life through words, not numbers, as with quantitative data collection (Kvale & Brinkmann, 2015:33).

Deliberate naiveté is used when the researcher has to be open to new aspects to be uncovered during the interview process and not just the predetermined themes and concepts set out (Kvale & Brinkmann, 2015:33). It is therefore well suited for semi-structured interviews. Furthermore, it was sometimes necessary to be inquisitive and subtle about what the participants were saying and what they were not saying (e.g., making observations) to obtain authentic, truthful, data-rich information (Kvale & Brinkmann, 2015:34).

After determining the interview approach, the researcher decided how the interviews would be recorded and audio-recording was deemed the most appropriate method of capturing the interviews.

4.4.3.3 Audio recordings

Audio recordings provided much more detail in capturing the data than only relying on the field notes. Furthermore, it allowed the researcher to give her full attention to the interview proceedings (Geyer, 2021). Geyer (2021) advises digital recording devices to be used when conducting interviews to ensure the data is captured, which can be transcribed later for data analysis.

The researcher wanted to be fully attentive to the interview proceedings, made minimal field notes and recorded observations during the interviews. Moreover, the researcher tested the recorder before each interview and checked that it was still recording throughout each interview. Furthermore, the researcher had a backup recorder should problems arise with the recorder in use. The last data collection technique used was observations.

4.4.4 Observations

Creswell and Creswell (2018:266) recommend that an observation protocol be developed before the data collection process begins. An observation protocol is a plan to capture the researcher's observations during the interviews (Creswell & Creswell, 2018:266). It can be recorded on paper as descriptive or reflexive notes. Descriptive notes can be sketches of participants, discussions and notes on the research setting and occurrences (Creswell &

Creswell, 2018:266). Reflexive notes include the researcher's personal feelings and thoughts, inclinations, impressions, preconceptions and even prejudices observed during the interviews (Creswell & Creswell, 2018:266).

It is essential to make complete and accurate notes of what is observed during an interview and Geyer (2021) warns that researchers should not trust their memory. The researcher made brief field notes of the observations during the interview process. She was fully attentive to what the participants were saying and observed to that which was not always said in words (Geyer, 2021; Kvale & Brinkmann, 2015:34). Therefore, the researcher could fully immerse and engage herself in the discussions during the interviews, allowing her to thoroughly observe and become sensitive to the intangible data. As Flick (2018:1) states, "... to collect observational data is to generate first-hand reports: to see, hear, feel and 'be there' personally ..." and have the ability to notice the "... minor 'grunts and groans' subtle gestures and bodily responses ...". The brief field notes were later elaborated on during the transcribing process.

4.5 DATA COLLECTION

The discussion of the ethnographic data collected during 2015 to 2016 follows. The pilot testing of the data collection and the selection and criteria of inclusion are discussed after this, followed by the data collecting process executed through three contact sessions. A discussion of the first contact session, participants' records, submission of personal data and the development of the interview protocol for the second contact session follows. Next, the second contact session is discussed at the exact location of the first. Discussions on the review and analysis of transcriptions concluded the third follow-up interview contact session.

4.5.1 Reviewing the pilot testing of the data collection

Pilot testing was applied before data collection to test and evaluate the data-collecting process and the effectiveness of the techniques. After reviewing the data collection process of the pilot testing, minor adaptations were made, and minimal changes were needed.

The researcher noticed that the FDs provided were limited in information even though the researcher explained what was needed. Therefore, the researcher deemed it appropriate to develop a FD template and provided it to the participants to acquire more details about the cooking process.

The second observation was that the pilot participants did not follow the time frame for submitting their documentation due to annual holidays and busy schedules. Therefore, the researcher became more lenient towards participants and adapted the time frames for the submission of documentation before the scheduled second contact session. Furthermore, the interviews were scheduled according to the availability of the participants.

Thirdly, it was initially proposed to conduct fieldwork at the University of Pretoria's Hatfield Campus. The justification for conducting the interviews at the university was that it was a neutral location where participants would feel comfortable. However, it was already seen with the pilot testing that it would not be feasible. The pilot testing participants had a toddler and due to busy work schedules, the participants felt it more convenient to talk to the researcher at a restaurant near their residence for the first and last contact session. Furthermore, the pilot testing participants felt more comfortable conducting the second contact session at their residence to accommodate their toddler's requirements. For this reason, the researcher decided that during the information and consent session, participants would be asked where it would be most convenient and comfortable for them to conduct the interviews. The consent form was adapted accordingly.

The data collection techniques used were evaluated and as they worked effectively, no changes were necessary. However, the audio recordings of the interviews were sometimes unclear, as there was a lot of background noise on her mobile cellular phone. Therefore, the researcher decided to purchase a professional audio recorder and only use the cellular phone as a backup should something go wrong.

After these changes had been implemented, consent was obtained from the researcher's supervisors to continue with the official data collection process of the study. In addition, since only minor adjustments were needed after the pilot study, which did not influence the data collection, the researcher's supervisors gave permission to add the data collected from the pilot study to the rest of the research data. The pilot study participants' data were further analysed, coded, and became part of the study's data.

After the completion of the pilot study the necessary changes were implemented, and the study's data collection commenced.

4.5.2 Sampling selection and criteria for inclusion

The aim of purposively selecting participants to partake in a qualitative study is to obtain the best participants to help understand the research problem and question in order to obtain

sources of rich information that answer the research question (Creswell & Creswell, 2018:262; Saunders & Townsend, 2018:8). Furthermore, purposive sampling is used when there is little pragmatic information regarding the research topic, in this case, the cooking competence of white young adults residing in Tshwane, South Africa (Kumar, 2019). To purposefully select participants, the researcher aimed to obtain a comprehensive understanding of the research topic, namely the cooking competence of white young adults in Tshwane, South Africa (Kumar, 2019; Strydom, 2021). The discussion of the criteria of inclusion and non-probability sampling techniques now follows.

4.5.2.1 Criteria of inclusion

Various aspects need to be considered when selecting a sample for a qualitative study, such as the accessibility to the potential participants, the researcher's experience and judgement to recruit participants suitable for the research focus, or the typicality of the participants within the cultural subgroup (Kumar, 2019). Therefore, Creswell and Creswell (2018:262) state that part of collecting data is setting the inclusion criteria when selecting and employing the sample. To assist with creating the criteria of inclusion, Creswell and Creswell (2018:262) suggest that attention must be given to the following four aspects:

- The setting (i.e., where will the research occur)
- The actors (i.e., participants)
- The events (i.e., what will be the research focus)
- The process (i.e., what will the process entail)

Taking these aspects into consideration, the criteria for inclusion were identified as follows:

The study was conducted by purposefully selecting white young adult couples residing in Tshwane, South Africa, to explore and understand their cooking competence. Therefore, the prerequisites included that the participants' cultural group should be white South African residing in Tshwane, South Africa. Participants should be young adults aged 22 to 35 who had progressed from the student life stage and entered the workforce (conceptualised in **Chapter 2: Section 2.5**).

Furthermore, participating couples were not required to be married; they could be cohabitating, with or without children, but they were required to reside together. In addition, it was considered necessary that participants do not reside with their parents or live in a communal setting but live in their own apartment or house and be responsible for their own cooking and consuming the food they prepare. By adhering to these criteria, the researcher would be able

to explore and understand the cooking competence of the selected participants. The strategies involved in the recruitment process are briefly discussed next.

Finding participants who qualified according to the criteria mentioned above was not difficult, as the researcher herself was in the same age group as the participants. Fortunately, the researcher, surrounded by colleagues, family, and friends, assisted in identifying potential participants. Recruiting partakers to participate in the study was more complicated, with time constraints being the most apparent barrier. Various potential participants declined and said that although they did not mind participating in the research, they did not have the time to do so. Potential participants were contacted via the *WhatsApp Messenger* application to inquire if they would participate in the study. The researcher identified herself and stated that she obtained their contact details from a friend, family member, or colleague and inquired about their willingness to partake in the research. The requirements were briefly explained, not in detail, as this was already done in the first contact session.

Many times, another barrier was the participants' age. When a potential participant was identified, the age of the participant's partner or spouse was not always known and, in many instances, one of the participants would be outside of the age range of the set criterion. However, nine participating couples were recruited who agreed to partake in the study. For a detailed description of the participants' data collection, see **Addendum A**.

4.5.2.2 Non-probability sampling technique

With a non-probability sampling technique, the researcher can obtain valuable information and insight into the research topic by selecting participants who are most likely to have specific qualities and are a *typical representation* of the subject matter of study in order to provide information-rich data (Kumar, 2019; Saunders & Townsend, 2018:9; Strydom, 2021). Purposive sampling is suitable in qualitative research, as participants who meet the required criteria objectives and are willing to participate in the study are chosen (Kumar, 2019). Saunders and Townsend (2018:8) justify that "... purposive techniques, where participants are selected on the basis of the researcher's judgement regarding relevance to answering the research question, are the most widely used in qualitative research...".

Therefore, a non-probability sampling design was chosen, with the criteria set for participants carefully selected to correspond with the aim of the study. The qualitative researcher *purposefully selected* a small group of participants that assisted in uncovering and understanding the research problem and question (Saunders & Townsend, 2018:8).

In qualitative research, the sample size is not predetermined but will depend on when data saturation occurs (Kumar, 2019). Once data saturation is reached, the qualitative researcher will end the data collection process, determining the expanse of the study's sample size (Kumar, 2019). Creswell and Creswell (2018:262) state that qualitative research sample size can be roughly estimated depending on the research design. Ethnography is known to have smaller samples of participants, as it strives for *depth rather than for breadth* (Valentin & Gomez-Corona, 2018:105). Moser and Korstjens (2018) estimate an ethnographic study to be between 25 to 50 interviews but warn that a researcher should be cautious in using these predictions as the best guideline to follow in qualitative sampling is “to sample only until data saturation has been achieved”.

In this qualitative study, the sample size was not predetermined, and data were collected until data saturation was achieved (Kumar, 2019). It was estimated that the study would reach data saturation after interviewing eight to ten participating couples. Initially, the researcher purposefully selected eight participating couples. One of the recruited couples withdrew from the research during the data collection process. As data saturation had not been reached at that point in the data collection process, it was decided to recruit two additional participating couples. After three contact sessions with nine participating couples, a total of 27 contact sessions were held and data saturation was reached. This was in line with the estimated requirements for an ethnographic study, as Moser and Korstjens (2018) predicted. A detailed discussion of the participants' data collection follows.

4.5.3 First contact session

The first contact session was an information session, where an outline of the procedures and expectations from the participants to partake in the study was explained in order for them to decide if they were willing to participate and give informed consent. The contact session was important, because it built trust between the researcher and the participants.

The first contact sessions took place at the participants' location of choice where the best quality information could be gathered (Strydom, 2011:332). Most of the participants selected public places to meet for the first contact session, with only one participating couple selecting their place of residence. A comprehensive table of the *when*, *where*, and *why* participant contact sessions took place can be seen in **Addendum A**. It should be noted that the participants received no incentives to participate in the study.

The consent form was explained to the participants and the expectations of the interviews were provided. This included information such as the duration, the number of interviews, how the

data would be captured and the personal documentation (i.e., FDs and photographs) the participants needed to provide the researcher beforehand. Furthermore, an estimate of the required time frame was provided for submitting the documentation to the researcher. The researcher asked for any uncertainty or questions that the participants might have regarding the participation in the study. When all the questions were answered and participants had agreed to participate in the study, the session concluded with participants signing the consent form. A copy of the consent form and information pamphlet can be viewed in **Addendum F**.

4.5.4 Participants record and submit personal documentation

After the information and consent session, the researcher collected the personal documentation (i.e., the FDs and accompanying photographs) from the participants.

The collection of the participants' personal documentation took longer than anticipated. This was mainly due to the participants' busy schedules, but also annual holidays and one participating couple was planning their wedding, which limited their time for completing and submitting their personal documentation. Nevertheless, the researcher and the participants were in contact about when the personal documentation would be submitted, and the second contact sessions dates were amended to accommodate the participants. Further detail of the submission dates of the personal documentation can be seen in **Addendum A**.

All participants submitted their FDs via email and two participating couples sent their photographs via the *WhatsApp Messenger* application to the researcher. Four participating couples completed the FDs in the provided templates, two participating couples completed it in a Microsoft Word document and three provided all the information directly in an email format. Examples can be viewed in **Addendum G**.

4.5.5 Development of interview protocol

After the participants had submitted their personal documentation, the researcher reviewed it. The findings guided the researcher in developing an interview protocol for the second interview, as discussed in section **4.4.3.1** of this chapter. An interview protocol for the second interview was developed and pre-liminary data analysis started taking place. The researcher then confirmed the participants' second contact session's date, time, and location.

4.5.6 First interview

The first ethnographic interview was conducted during the second contact session with the participants. Semi-structured interviews were done, and the researcher used photo-elicitation (i.e., the FDs and photographs of the participants and a recipe provided by the researcher) as

stimulus techniques in obtaining the information necessary to explore and understand the cooking competence of the participants interviewed. The information was captured through audio recordings for later transcribing. During the interviews, other data collecting techniques were observations, captured through field notes and memos.

The following section explains visual ethnography as a data collecting technique. It is followed by the development of the interview protocol for the semi-structured interviews and observations.

Furthermore, in qualitative research, data collection, data analysis and the writing up of the findings often transpire simultaneously (Creswell & Creswell, 2018:267). Therefore, while the first interviews are being conducted, the researcher may also be analysing another completed interview and creating memos or themes included in the results. After the data analysis of the first contact session, follow-up questions were prepared for clarification and validation purposes.

4.5.7 Transcriptions, review, and analysis

The first step in the data analysis process was transcribing, as explained by Creswell and Creswell (2018:268). The researcher transcribed every ethnographic and follow-up semi-structured interview verbatim into written documents, as captured through audio recordings, which was a time-consuming process (Creswell & Creswell, 2018:190; Kvale & Brinkmann, 2015:206-207).

There were several advantages for the researcher in transcribing her own interviews. During the transcription of the first ethnographic interviews, the researcher determined if she overlooked specific questions, if there were apparent missing information or if clarity was needed on a particular aspect discussed during the interviews. It allowed the researcher to prepare questions to fill the *gaps* in the information for the follow-up interviews. Furthermore, transcribing the first ethnographic interview before conducting the follow-up interview was advantageous to the researcher. She could start identifying and developing possible codes and themes, which was beneficial for the follow-up interview and the remaining interviews to be conducted and transcribed. After the follow-up interviews, the recordings were transcribed as with the first interview and the researcher was able to start analysis and establish codes and themes for the study.

Where deemed appropriate, voice tones, pauses and happenings were recorded, as they formed part of the observations and the situation in the room. The researcher made detailed

verbatim transcriptions which, to the best of the researchers' ability, included word repetitions, noting of *uhms*, sighs and laughs (Kvale & Brinkmann, 2015:207).

Furthermore, during the transcriptions, the brief notes made of the observations were written into comments and memos in more detail, which gave the researcher a deeper insight into the information gained from the interviews (Kumar, 2019). When a researcher performs their own transcription, the researcher experiences a reawakening of the social and emotional aspects that occurred during an interview. It can be said that it transports the researcher back to the interview, evokes what transpired during the interviews and starts "... analysing the meaning of what was said..." (Kvale & Brinkmann, 2015:207). It coincides with the researcher's transcribing experience. Adding the observations to the transcripts gave an idea of the interview atmosphere, the intangible conversation that otherwise would have gone unnoticed. Observations like the tone in which participants spoke (e.g., sarcasm and uncertainty), tension in the room, the strain between participants, irritation, or nervousness. The transcribing method was of great value in the data analysis process, as it contributed to the accuracy of the data interpretation.

The interviews took place in the participants' first language, Afrikaans, and the interviews were transcribed in Afrikaans, but for the writing-up of this study, translated English excerpts were used. The translations were reviewed by an independent party to ensure the interviewees' meaning was not lost. To keep the results (**Chapter 5**) and excerpts concise, the observations as described were only added if they emphasised or contributed to the understanding and validation of the data analysed. An explanation of the verbatim extracts identified follows.

4.5.7.1 Verbatim extracts identification

The verbatim extracts were identified from the transcriptions, as illustrated by the examples provided in **Table 4.2**.

TABLE 4.2: EXAMPLES OF VERBATIM EXTRACTS

Participant category	Abbr.	No.	Examples of extracts	
Young Family	YF	1	Both participants:	YF1: <i>extract</i>
			Referring to spouse:	YF1-wife: <i>extract</i> / YF1-husband: <i>extract</i>
Young Couple	YC	4	Both participants:	YC4: <i>extract</i>
			Referring to spouse:	YC4-wife: <i>extract</i> / YC4-husband: <i>extract</i>
Cohabiting Couple	CC	8	Both participants:	CC8: <i>extract</i>
			Referring to partner:	CC8-female: <i>extract</i> / CC8-male: <i>extract</i>

The extracts were shaded, typed in *italics* and using **bold** font. The participants were divided into three categories: young families (YF), young couples (YC) and cohabitating couples (CC). The participants' category abbreviations and numbers were used. The participants' spouses (wife/husband) or partners (female/male) were identified when it was necessary to distinguish between them, especially during conversations. An ellipse was used in a verbatim extract when a part of the quote was omitted. Comments for clarification of a quote were inserted in brackets and not italicised.

4.5.8 Second interview

Credibility was ensured through the follow-up interview, the third contact session. It allowed the researcher to clarify and confirm the initial interpretation of the data collected from participants. Furthermore, this step contributed to the credibility, as the participants had the opportunity to verify and confirm that the data collected and the conclusions the researcher made from the data were correct and would assure the participants that the research was transparent (Creswell & Creswell, 2018:274). During this session, the researcher continued to use observations captured through field notes and memos, as with the second contact session interview. Any additional information participants provided from the questions asked for clarification and validation of the second contact session was recorded and new data emerged, which provided additional insight and understanding into the participants' cooking competence. After the additional data were recorded, all the gathered data were analysed.

4.6 DATA ANALYSIS AND INTERPRETATION

Data analysis is necessary to cohere and interpret the data collected (Creswell & Creswell, 2018:268). Data analysis coincides with the data collection and writing up of the findings in qualitative research. The operationalisation **Table 4.3** and a discussion on how to filter the information obtained follow. The computer software used is explained, followed by the steps taken for data analysis of the findings.

4.6.1 Operationalisation

In **Chapter 3**, the concepts for this study were conceptualised, as well as the aims and objectives developed for this study. In this chapter, these aims and objectives will be operationalised. The operationalisation was developed in order to measure concepts and how to get hold of empirical data (Babbie, 2021:138). In the context of this study operationalisation explains the data collection techniques, procedures and analysis used to understand the cooking competence of white young adults residing in Tshwane, South Africa.

TABLE 4.3: OPERATIONALISATION TABLE

Objective 1: To explore and describe the cooking competence of white young adult couples residing in Tshwane, South Africa				
Sub-objective:	Dimensions	Indicator example	Measurements example	Measuring instrument
1.1.a To explore and describe the <u>cooking knowledge</u> of white young adult couples residing in Tshwane, South Africa, according to the cooking competence dimension of:	Academic knowledge	Food preparation knowledge Terminology knowledge	<u>Question:</u> How long would you cook the vegetables? <u>Answer:</u> It must still have some crunch, "Al dente"	Semi-structured interviews
1.1.b To explore and describe the <u>cooking knowledge</u> of white young adult couples residing in Tshwane, South Africa, according to the cooking competence dimension of:	Perceptual knowledge	<u>Sensory perception:</u> Understanding the properties of food in terms of senses	<u>Question:</u> Why is it necessary to toast nuts? <u>Answer:</u> To add flavour, texture and taste to the tart	Semi-structured interviews Photo-elicitation – stimulus recipe
1.1.c To explore and describe the <u>cooking knowledge</u> of white young adult couples residing in Tshwane, South Africa, according to the cooking competence dimension of:	Conceptual knowledge	<u>Creative and experimenting abilities:</u> Improvisation, adapting and substituting abilities	Utilised leftover ingredients from 1 st recipe in the second recipe	Semi-structured interviews Photo-elicitation - participants' photographs
1.2.a To explore and describe the <u>cooking skills</u> of white young adult couples residing in Tshwane, South Africa, according to the cooking competence dimension of:	Mechanical skills	<u>Food preparation methods and techniques:</u> passive food preparation activities	Prepared oven-bake crumbed fish and chips Equipment used: oven	Semi-structured interviews Food diaries
1.2.b To explore and describe the <u>cooking skills</u> of white young adult couples residing in Tshwane, South Africa, according to the cooking competence dimension of:	Planning skills	<u>Multi-tasking skills:</u> Ability to perform multiple meal preparation activities simultaneously	Prepare the white sauce while the pasta cooks.	Semi-structured interviews Food diaries

4.6.2 Filtering the data

Qualitative data should be "dense and rich" (Creswell & Creswell, 2018:268), and all of the data collected cannot be used for the study. The researcher must filter the information gathered, focusing on specific themes, and disregarding the rest of the information (Creswell & Creswell, 2018:268). The data were reduced and organised according to the cooking competence dimensions table developed (see **Chapter 3**), aligning with the objectives for this study. The data then had to be fragmented, before it could be consolidated as a whole (Creswell & Creswell, 2018:267). For this, the data were filtered by using a qualitative computer software programme, *Atlas.ti 8*, to assist the researcher in accumulating the data into smaller fragments (Creswell & Creswell, 2018:268).

4.6.3 Qualitative computer software programme: *Atlas.ti 8*

A qualitative computer software programme, *Atlas.ti 8*, was used to assist the researcher in analysing the data. Qualitative data analysis programmes such as *Atlas.ti 8* has many advantages for the qualitative researcher, as they are specifically designed to aid the researcher with analysing the significant volume of unstructured transcriptions, which allows for easier data management (Archer, 2013:1).

Coding can become a laborious and time-consuming process without a qualitative data analysis programme. It eliminates the labour-intensive processes of physical analyses such as manual cutting, pasting, photocopying excerpts, colour coding and cataloguing. *Atlas.ti 8* assisted the researcher in the data analysis by conveniently retrieving the files. The researcher could effectively identify patterns through programme features, allowing the researcher to search for specific codes, keywords, or labels without going through the data (Archer, 2013:1).

4.6.4 The data analysis steps

Creswell and Creswell (2018:268) state that qualitative data analysis requires five consecutive steps: the organisation and preparation of the data to be analysed; the reviewing of all the data; the coding process; the development of descriptions and themes; and the representation of the descriptions and themes. A discussion of each of these five steps follows.

4.6.4.1 Step 1: *Organise and prepare the data for analysis*

To organise and prepare the data for analysis, the researcher started reviewing the information obtained from the participants, after which she transcribed the audio recordings and started

typing up the observations made. This was followed by sorting the data according to categories into an accessible work format for the researcher (Creswell & Creswell, 2018:268).

4.6.4.1.1 Sorting of the data

The audio recordings, the transcribed files with field notes and observations and the FDs with their corresponding photographs were filed on the researcher's computer and in the *Atlast.ti* computer software programme. The information was grouped and stored in three different folders: audio recordings, transcriptions and visual ethnography.

The audio recordings had sub-folders for the first ethnographic and second follow-up interviews, from contact sessions two and three. The transcriptions folder contained sub-folders of the interviews from contact sessions two and three and each transcription was saved in a Microsoft Word (doc), Rich Text Format (RTF) and Portable Document Format (PDF). The reason for saving the transcriptions in different file formats was that the transcribing was done in Microsoft Word and uploaded as an RTF file into *Atlas.ti 8* (Archer, 2013:4). The files were then saved in PDF format to secure the transcriptions. Lastly, the visual ethnography was saved in sub-folders that contained the participants' FDs and photographs.

Archer (2013:4) states that it is of utmost importance to file documents in the correct format, not only for the ease of access to the data being analysed, but also to be able to transfer the documents between computer programmes and display the researcher's audit trail. Furthermore, it is essential to include important signifiers to file names when grouping documents (Archer, 2013:5). Therefore, as the data analysis progressed, the researcher changed the name of the main folders to 'Young Couples', 'Young Families' and 'Cohabitators', each with their own audio recording, transcriptions, and visual ethnography sub-folders. The RTF transcript files were uploaded and saved as a hermeneutic unit, (an executable file that contains all the project information), in *Atlast.ti*, from which the researcher coded the data. The next step in data analysis was to review all the data collected, after the data collection process had been completed, to get a holistic view of the data collected.

4.6.4.2 Step 2: Reviewing the data

Creswell and Creswell (2018:269) recommend that the researcher adds additional notes to transcripts, observations, and field notes. The researcher found that adding additional comments and memos was a continual process throughout the data analysis process and was documented in the features provided in the *Atlas.ti 8* computer software programme and during the validation process where hard copies were used. Before the official data coding occurred, the validation process took place through peer debriefing.

4.6.4.3 Peer debriefing

To ensure the accuracy of the findings, which adds to the study's credibility, the researcher, her co-supervisor, and a fellow master's student assisted with the peer debriefing process. Peer debriefing was done as part of the data analysis validation process (Creswell & Creswell, 2018:275). The researcher's co-supervisor peer debriefed two of the participating couples' findings and the fellow master student the remaining seven. Each one would review and code the transcriptions independently according to the established codes and then a meeting was scheduled where the results were compared and discussed to ensure that the same results and interpretations were achieved. After gaining a comprehensive view of the data, the official data coding occurred.

4.6.4.4 Step 3: Coding the data

Coding is a data analysis method where the transcribed raw data are converted into a homogenous form (Babbie, 2021:332). Meaning is given to the text data by adding a specific word or category to a word or paragraph to gain the data's significance. A word or category (i.e., the code) represents what the researcher wants to know (Creswell & Creswell, 2018:269). Several codes can be created when analysing data. The following section will explain the coding process and different codes used in the study.

4.6.4.4.1 Coding method

Babbie (2021:332) states that transcripts are coded or classified according to a conceptual framework. Therefore, the cooking competence dimensions' table indicators were used as a predetermined coding list, to guide the researcher to obtain information about cooking competence (Archer, 2013:21-22; Creswell & Creswell, 2018:271). However, qualitative research explores and understands a problem and involves emerging questions and procedures (Creswell & Creswell, 2018:41). Because there was no existing information on the cooking competence of the young adults residing in Tshwane, South Africa, emerging information was crucial and therefore the researcher used open coding, generally known as inductive coding, during the data analysis (Archer, 2013:21-22).

For this reason, the researcher used a combination method of predetermined codes and emerging codes during data analysis, in order for the researcher to explore and understand the cooking competence of young adults residing in Tshwane, South Africa (Creswell & Creswell, 2018:271).

As stated, the indicators of the cooking competence dimensions acted as codes that the researcher assigned to a relating word or piece of text. As the data analysis progressed, the

researcher added open codes to the data, a new code created for a specific word or text (Archer, 2013:21). Codes can be classified into 'expected', 'surprise' and 'unusual' codes (Creswell & Creswell, 2018:270). An explanation follows of how the researcher used these three types of codes.

4.6.4.4.2 Description of codes

Creswell and Creswell (2018:269) state that analysing data by generating descriptions and themes are helpful for ethnographic studies. Descriptions include detailed data from people or events in a location, such as understanding the young adults residing in Tshwane, South Africa's cooking competence and coding to generate themes.

It is essential to develop very descriptive codes and keep them concise as it makes the collaboration process of codes easier and more efficient later on in the data analysis process (Archer, 2013:18). Although not all of the codes developed for the study were used, they assisted the researcher in determining categories and themes for the study. Furthermore, during the coding process in the *Atlas.ti 8* computer software programme, the researcher ensured that she did not code words out of context, but selected enough text to ensure the meaning of the text did not get lost (Archer, 2013:18).

Atlas.ti 8 computer software allowed the researcher to code and develop themes from the data. Themes emerge when similar codes are grouped and relating themes collectively are known as families and families are grouped together as superfamilies (Archer, 2013:35).

Because the researcher started coding from a list, main families and themes already existed. The main themes included the academic, perceptual, and conceptual knowledge themes grouped as a family, known as the cooking knowledge dimension and the mechanical and planning skills themes were grouped as a family, known as the cooking skills dimension. However, from the additional codes, additional new themes emerged. Creswell and Creswell (2018:269) advise that a qualitative study's significant findings should be between five to seven themes, usually the headings of the findings chapter of the dissertation. Step 4 explains how the researcher generated codes and themes from the data.

4.6.4.5 Step 4: Generating codes and themes

Codes can be classified into three categories: predetermined codes, namely expected codes and open or inductive codes, as surprise and unusual codes. As set out in **Table 4.4**.

TABLE 4.4: DEVELOPMENT OF CODES AND THEMES

Example no.	Type of codes	Indicator	Theme	Family	Superfamily
1. Predetermined codes					
1.1	Expected codes:	Cut -	Active -	M.	C.S.
	<i>Full code description:</i>	<i>Cutting with a knife or scissors</i>	<i>Actual food preparation technique – Active</i>	<i>Mechanical skills</i>	<i>Cooking skills</i>
1.2	Expected codes:	Accessibility -	Lim. Res.	P.	C.K.
	<i>Full code description:</i>	<i>Accessibility of resources</i>	<i>Evaluate resources accessible within limited resources</i>	<i>Perceptual knowledge</i>	<i>Cooking knowledge</i>
2. Open / Inductive codes					
2.1	Surprise codes:	Timesaving	Convenience	Other	-
	<i>Full code description:</i>	<i>Time-saving utilising convenience foods</i>	<i>Use of convenience foods</i>	<i>Not part of predetermined codes</i>	-
2.2	Unusual/ Conceptual Interest Code:	Convenience foods	Preferences	Other	-
	<i>Full code description:</i>	<i>Type of food participants preferred</i>	<i>Participants preferences</i>	<i>Not part of predetermined codes</i>	-

4.6.4.5.1 Predetermined codes

Expected codes are part of the predetermined codes from the cooking competence dimensions table that the researcher expected to find (Creswell & Creswell, 2018:270). Examples 1.1 and 1.2 of **Table 4.4** are examples of expected codes. In the first example, to cut was an indicator that participants cut food commodities during food preparation, whereas active was the type of food preparation technique. There were various active indicators, and these were therefore grouped to form a theme. The active theme formed part of several other themes related to the mechanical skills (abbr. M.) dimension and clustered together to form a family. The second example of **Table 4.4** was developed on the same principle. Accessibility was the indicator of the participants' accessibility to resources. All the relating indicators were clustered together in the theme, to evaluate resource accessibility within limited resources (abbr. Lim. Res.). This theme formed part of the perceptual knowledge (abbr. P.) dimensions, which formed part of the dimensions' family. Lastly, example 1.1, the mechanical skills dimension and example 1.2,

the perceptual knowledge dimension, are components of cooking skills (abbr. C.S.) and cooking knowledge (abbr. C.K.), which separately and collectively form a super family.

4.6.4.5.2 *Open or inductive codes*

The researcher also used open or inductive codes, which are not part of the predetermined or expected codes. The two kinds of open codes were 'surprise' and 'unusual' or 'conceptual interest' codes.

Example number 2.1 of **Table 4.4** is an example of a surprise code. A surprise code is an additional code that emerged from the findings that the researcher did not anticipate, for instance, the role convenience played in the participants' lives (Creswell & Creswell, 2018:270). This code's indicator was *time-saving*, which indicated that participants use convenience foods to save time during food preparation. It formed part of the *convenience* theme of why participants use convenience foods. This theme again grouped with other surprising codes to form a family named other, as it was not part of the predetermined listed codes.

The third type of code that emerged is one that Creswell and Creswell (2018:270) describe as unusual or of conceptual interest. For instance, the researcher took the stance that if participants learned the *know-how* of cooking, they would prepare more home-cooked meals and the opposite was found to be true. Example number 2.2 of **Table 4.4** illustrates an unusual or conceptual interest code. The indicator was convenience foods, which refers to the type of food the participants prefer and, therefore, part of the participants' preferences theme. As with example 2.1, it was also grouped with similar unusual codes in the family named other. Neither of the open or inductive codes formed part of a super family. The fifth step in data analysis to discuss is the representation of data.

4.6.4.6 **Step 5: Representing the description and themes**

The last step that Creswell and Creswell (2018:270) recommend during the data analysis process is to represent the descriptions and themes. Therefore, the researcher must consider how the final data analysis will be represented to convey the findings. The researcher used the conceptual framework to discuss the findings chronologically. A detailed discussion will be presented in **Chapter 5** of the themes, subthemes (existing and emerged), and the interconnectedness found (Creswell & Creswell, 2018:270). Furthermore, these findings will be supported by participant excerpts and other visual materials, such as participants' photographs to augment the findings (Creswell & Creswell, 2018:270).

4.6.4.6.1 Comments and memos

The researcher continually made additional notes during reviewing, coding, and validation during the data analysis process. The researcher added these notes to the *comments* and *memos* functions in *Atlas.ti 8* and the printed hard copies during the validation process. The researcher added her thoughts, possible comparisons, associations and conclusions to the *comments* and *memos* functions which assisted when themes started to form from the codes.

4.7 ETHICS

Ethics is described by Kumar (2019) as "the moral values of professional conduct that are considered desirable for good professional practice". Several ethical concerns need to be addressed in a study. The University of Pretoria's Research Ethics Committee (Faculty of Natural and Agricultural Sciences) evaluated the research proposal to ensure that it conforms to the ethical requirements. The Department of Consumer and Food Sciences review committee addressed any ethical concerns on examining the proposal before the research could commence. The study was approved by the Ethics Committee of the Faculty of Natural and Agricultural Sciences at the University of Pretoria. The research only commenced after ethical clearance had been provided (Ethical Clearance Number: 150518-010).

The data collection process adhered to the ethical requirements as stipulated by Strydom and Roestenburg, (2021) and Walliman (2022:59-61). Participation in the study was voluntary and those who participated gave verbal informed consent before the first semi-structured interview. Participants had to sign a written consent form to confirm this. Participants were fully debriefed and informed on the first contact session before the research commenced. Permission was asked for the use of a voice recorder during the interviews. All participants willingly participated in the research and were allowed to withdraw at any time. Moreover, participants were not misled intentionally throughout the data collection process and the researcher kept any personal information confidential, where participants stayed anonymous.

In line with this study's aim and objectives, the motivation for using an ethnographic strategy of inquiry and methodology was justified. Suitable research methods and techniques were discussed, which were best suited to achieve the research aim and objectives. In the following chapter, **Chapter 5**, the research findings on the cooking competence of the young adults residing in Tshwane, South Africa, are described. **Chapter 6** discusses the findings of this study.

4.8 CONCLUSION

This chapter discussed how the research design and methodology were used to explore and describe the current cooking competence of white young adults. An ethnographic inquiry strategy was chosen for the research design and the role of the researcher as an instrument was discussed. The Tshwane metropolitan area was chosen as the research setting and the selection of criteria for participants was explained. It was followed by a detailed discussion of the visual ethnography, participants' personal documentation, semi-structured interviews and observations as data collecting techniques for this study.

A description of the pilot study and the data collection followed. It included the sampling and selection of participants, the first contact session (e.g., an informed consent session describing the procedures to follow in data recording), and participants' submission of personal documentation. An interview protocol was developed in preparation of the first interview of the second contact session and the data collection techniques were applied during the interviews and recorded through audio recordings. Transcriptions were made, reviewed and preliminary data analysis took place. The third contact session was a follow-up session with the participants for further clarification and confirmation. The chapter concluded with a discussion of the data analysis and interpretation. The findings of the study are presented in **Chapter 5**.

Findings, discussion, and interpretation

Given the lack of research regarding young adults' cooking competencies, this study aimed to explore, describe and understand the cooking competence of white young adult couples living in Tshwane, South Africa. A cooking competence dimensions table was compiled from the reviewed literature, based on which the conceptual framework was developed. It acted as a guide, which enabled the researcher to explore the young adult couples' cooking competence dimensions of cooking knowledge and skills and the related indicators.

This chapter outlines the participants' background information, followed by the presented findings discussed against the objective and sub-objectives utilised for this study. Therefore, the participants' cooking competence findings are presented, discussed, and interpreted according to the cooking knowledge and cooking skill dimensions and the related indicators. Additional findings are discussed, and the chapter ends with concluding remarks on the cooking competence of white young adult couples residing in Tshwane, South Africa.

5.1 BACKGROUND INFORMATION

The background information of the participating couples is set out in **Table 5.1** according to their main characteristics. The participating couples' allocated number, life stage in the family life cycle (see **2.3.2**), age, occupation and main characteristics are presented in **Table 5.1** and a discussion follows accordingly.

Nine white young adult couples residing in Tshwane, South Africa, participated in the study. From the nine participating couples participating in the study, couple number one to three were classified according to the life stages in the family life cycle (see **2.3.2**) as Young Families (YFs), couples four to six as Young Couples (YCs) and number eight and nine as Cohabiting Couples (CCs). Each of these couples is described according to their life stage in the family life cycle.

5.1.1 Young families (YFs)

The three YF participating couples were married, each with a toddler. The wives' ages ranged between 28 and 31 and the husbands were 34 to 35 years. All the YF couples were working full-time.

TABLE 5.1: PARTICIPATING COUPLES' PROFILES AND MAIN CHARACTERISTICS

Participant couples no.	Life stage in the family cycle			Age		Occupations		Main characteristics
	(YF)	(YC)	(CC)	Women	Men	Women	Men	
1	✓			28	34	Client relations & marketing manager	Business development consultant	High UPF consumers
2	✓			28	34	Physiotherapist	Clothing store manager	Poor planners
3	✓			31	35	Hairstylist	Software Developer	Time crunchers
4		✓		27	26	School counsellor	Accountant	Honeymooners
5		✓		27	28	Part-time lecturer & owner of a small business	Quantity surveyor	Experience seekers
6		✓		29	31	Self-employed (freelance designer; crochet classes; cooking classes for kids)	Creative designer	Penny pinchers
7		✓		31	34	Travel agent & owner of a shuttle service business	Primary school teacher	On-the-go
8			✓	26	25	Sales engineer	Chemical engineer	Health fanatics
9			✓	23	26	Teaching assistant in financial sciences	IT auditor	Cooking novices

Couple number one (i.e., *high UPF consumers*) would choose mostly premade UPF items that could be quickly assembled, with minimal food preparation involved. Couple number two (i.e., *poor planners*), the wife believed that she was incapable of planning, which was a significant constraint to their food preparation. Due to couple number three's (i.e., *time crunchers*) long working hours and the bedtime schedule of their toddler, the couple had a small window to prepare and eat dinner together as a family, which was important to them.

5.1.2 Young couples (YCs)

The four YCs were married and did not have any children. The wives' ages ranged between 27 and 31 and the husbands were 26 to 34 years. The couples worked full-time, and three wives had part-time jobs and their own businesses.

Couple number four (i.e., *honeymooners*) was the most recently married and enjoyed preparing food, doing grocery shopping and spending time together. Couple number five (i.e., *experience seekers*) was the only couple from all the participants that rated the experience during purchasing groceries and food preparation as necessary. Couple six (i.e., *penny pinchers*) had limited financial resources and saved money by preparing as many meals as possible and food components with ingredients from scratch. Participating couple number seven's (i.e., *on-the-go*) schedule was very demanding and they were the only YC that spent limited time with each other, due to the demands of their respective occupations.

5.1.3 Cohabiting couples (CCs)

The last two couples were CCs, and they were not married, had no children and lived together. Both couples were engaged.

Couple number eight's (i.e., *health fanatics*) health requirements determined their food preparation. Finally, couple number nine (i.e., *cooking novices*) was the most recently graduated from university and it was their first year of working, residing and preparing food together.

The following section presents the study's findings. It should be noted that when referring to the young white couples in this study, findings only pertain to the study's participants, as it is a qualitative study and cannot be generalised to the broader white young adult population residing in Tshwane, South Africa. The discussions were substantiated by means of verbatim extracts, translated from Afrikaans to English, shaded and indicated in bold and italics to differentiate between the discussion and extracts (see **4.5.7.1**). During the discussion of the findings, reference is made to participants' personal documentation as explained (see **4.4.2**) and which can be found in **Addendum C**. The presentation of the findings, discussion, and interpretation of the cooking competence of the white young adult couples follows.

5.2 COOKING COMPETENCE OF YOUNG ADULT COUPLES (*OBJECTIVE 1*)

The main objective of this study was to explore, describe and understand the cooking competence of white young adult couples living in Tshwane, South Africa. This objective was addressed by:

Sub-objective 1.1: To explore, describe and understand the **cooking knowledge** of white young adult couples living in Tshwane, South Africa, according to the cooking competence dimensions of academic, perceptual and conceptual knowledge.

Sub-objective 1.2: To explore, describe and understand the **cooking skills** of white young adult couples living in Tshwane, South Africa, according to the cooking competence dimensions of mechanical and planning skills.

The findings were presented and discussed, together with an interpretation of the white young adult couples' cooking knowledge.

5.2.1 Cooking knowledge (Sub-objective 1.1)

The findings of Sub-objective 1.1, namely, to explore, describe and understand the cooking knowledge of white young adult couples living in Tshwane, South Africa, according to the cooking competence dimensions of academic, perceptual, and conceptual knowledge as set out in **Figure 5.1** follows.

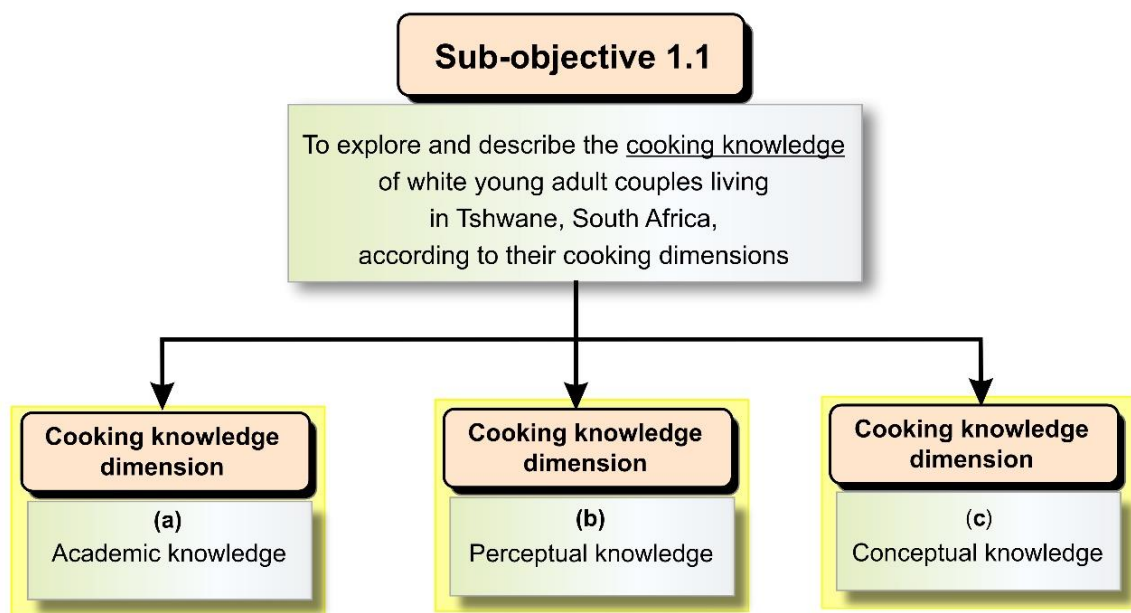


FIGURE 5.1: COOKING KNOWLEDGE DIMENSIONS (SUB-OBJECTIVE 1.1)

5.2.1.1 Academic knowledge [Sub-objective 1.1(a)]

The first cooking knowledge dimension explored was that of academic knowledge. Academic knowledge is taught knowledge that enhances the participant's understanding of a task, the *knowing that* knowledge enhances their perceptual knowledge of *knowing how*, as described in **Chapter 2**.

The findings are presented (as illustrated in **Figure 5.2**) according to the seven identified indicators: participants' knowledge of food, food preparation, nutrition for good health, food trends and fashions, where food comes from, food hygiene and safety practices and information sources (Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Wagner, Ploetz *et al.*, 2011; Begley & Gallegos, 2010a, 2010b; Bursey *et al.*, 2010; Vanderkooy, 2010; Michaud, 2007:16; Short, 2002:103-104, 2003, 2006:52,58).

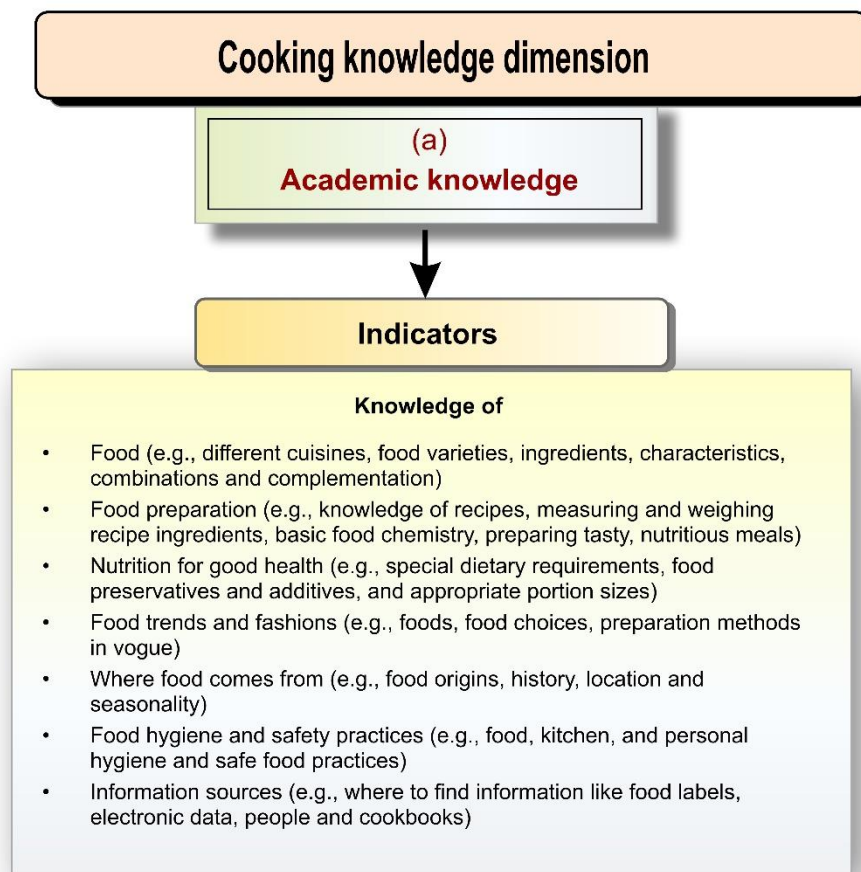


FIGURE 5.2: ACADEMIC KNOWLEDGE DIMENSION INDICATORS

The findings on the participants' knowledge of food are the first academic knowledge indicator to be explored.

5.2.1.1.1 *Knowledge of food*

From the literature, the **knowledge of food** indicators is related to the participant's knowledge of different cuisines; food varieties; ingredients; food characteristics, combinations and complementation (Begley & Gallegos, 2010a; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Michaud, 2007:19; Short, 2006:59; Vanderkooy, 2010).

A participating couple presented knowledge of *different cuisines* by knowing how to prepare Portuguese cuisine [FD: YC6 no.4]. Moreover, three YCs showed knowledge of *food variety* by knowing the *ingredients* for preparing a white sauce, a [†]*Bolognese* sauce and what ingredients were required for making an [†]*Alfredo* pasta, respectively [FD: YC4 no.2; FD: YC5 no.1, 5; FD: YC6 no.5].

Knowledge of *food characteristics* was shown in handling specific ingredients, such as wiping mushrooms clean instead of rinsing them. **CC8: I wipe them clean with a cloth ... my brother told me ... if you rinse them in water, it absorbs too much water, and that's why there is so much water in the pan.** Two participating couples indicated knowledge of *ingredient combination and complementation* by using rosemary and thyme to complement lamb and adding cream to spinach [FD: YC5 no.2; FD: CC8 no.1].

However, the opposite was also found when participants did not show knowledge of food. For instance, when preparing a stir-fry, a participant could not identify the cuisine and the specific ingredients that related to and complemented it [FD: CC9 no.3]. **CC9: I wanted to make stir-fry, but I never know what to pour over it ... then my dad said I must use soya sauce, so now I will try that out.**

Additional knowledge of food was identified. It was revealed that some participants indicated a lack of knowledge of food composition, in believing that Himalayan Rock salt is a healthier alternative to regular table salt or that saturated fats, such as coconut oil, are healthier alternatives to unsaturated vegetable oils, as presented in the knowledge of nutrition for good health indicator (see **5.2.1.1.3**).

Furthermore, it was found that additional knowledge of food related to participants' exposure and experiences, would therefore be presented in the perceptual knowledge dimension (see **5.2.1.2**). The findings showed that the participants' knowledge of food was related to their background and depended on where they had obtained their information, as described in the knowledge of information sources indicator (see **5.2.1.1.7**). The following indicator findings presented are participants' knowledge of food preparation.

5.2.1.1.2 Knowledge of food preparation

The indicator of **food preparation** was associated with the *know-that* knowledge of participants and was found in the literature to comprise participants' knowledge of *recipes* (e.g., food preparation terminology, techniques, methods and operating kitchen equipment), *measuring* and *weighing recipe ingredients* and *basic food chemistry* as found in the literature (see **2.2.1.1.2**). In addition, it included participants' knowledge of *preparing tasty and nutritious*

meals by retaining nutrients during food preparation and reducing ingredients that can cause health concerns.

a) Knowledge of recipes

The participants' knowledge of recipes was explored using the stimulus recipe of a *phyllo and feta fig tart with nuts, cinnamon and honey* (see **Addendum D**). The findings were presented according to participants' knowledge of food preparation terminology, techniques, methods and operating kitchen equipment.

- Knowledge of food preparation terminology

Some participants showed knowledge of food preparation terminology when asked what the term *caramelising of the figs* meant. **YF1-wife: Usually, you do it with onions in a pan and then pour sugar over it; YF1-husband: Yes, I would say until they become sticky.** From this example, participants used their past experiences to identify the terminology which related to participants' perceptual knowledge. In addition, some participants indicated food preparation terminology by making use of words such as *al dente* when referring to the doneness of vegetables or pasta, *mise-en-place* for pre-preparing ingredients or using the term *shallow-frying* [FD: YC6 no.5]. **YF2: just a splash, never like shallow-frying ... I remember from standard six and seven [home economics].**

Furthermore, participants explained that they *de-hair green beans* before cooking them, which is a term taught to them by their parents by removing the string from whole green beans. **YC6: Because that is how my mother taught me! They call it 'hair the beans'; that is how I was taught.**

- Knowledge of food preparation techniques

Participants *know-that* knowledge of food preparation techniques was an indication of their knowledge of recipes. For instance, some participating couples indicated knowledge of food preparation techniques by describing ruffle-up pastry concertina style as folding up the pastry or making folds that resemble a fan, a zig-zag, or up-and-down motion resembling a book, or as described in the example, dress pleats. **YC6: I would have made it like pleats because that's how you make dress pleats. We also make clothes, so we have that reference.** However, although this participating couple had academic knowledge, they also showed experience from past references relating to their perceptual knowledge.

- Knowledge of food preparation methods and operating kitchen equipment

Knowledge of food preparation methods and operating kitchen equipment was explored by asking participants how they would toast the nuts of the stimulus recipe. Some participants revealed they would use a pan on the stove and then dry toast the nuts or on a baking sheet

in the oven using cooking spray or parchment paper on the baking sheet. **YC5-husband: It needs to be roasted, but you place that white paper under it, right? YC5-wife: In the oven! Yes, wax paper. I would place it in a pan and the oven at 180.** However, there were indications that some participants did not understand the recipe instructions for the food preparation method, stating they would toast the nuts with oil in a pan on the stove or use a blow torch. Hence, the *know-that* knowledge was also related to the mechanical dimension. From the examples, it is clear that participants' knowledge of recipes was obtained through other academic knowledge indicators, such as the knowledge of information sources indicator. It is also related to the participants' perceptual knowledge (exposure and experiences) and mechanical skills.

b) Knowledge of measuring and weighing recipe ingredients

It was revealed that participants' knowledge of measuring and weighing recipe ingredients were mere estimations in using standard household utensils. Specific amounts were only measured with measuring equipment if participants baked or followed packaging food preparation instructions. For instance, a couple prepared an apple pie as part of their FD and used measuring equipment to measure the ingredients for the recipe [FD: YC6 no.4]. Another couple used a measuring jug to measure the amount of water needed per packaging instructions to prepare a Knorr's™ Macaroni and Cheese meal kit [FD: YF1 no.1]. **YF1: this now says [refers to the package] 125, then I will pour it into a measuring jug.**

c) Knowledge of basic food chemistry

Some participants revealed their knowledge of basic food chemistry by showing knowledge of toasting nuts, stating that it is to enhance the flavour and taste of the nuts and that it was necessary to release the nut oils and create texture and colour to the nuts. **YC6: To bring out the flavour and release the oils ... and it is a bit crunchier, I think, tastier [toasting nuts].** Most participants also understood that greasing a quiche dish was necessary so that the pastry did not stick to the dish or burn. **YF3: So it does not stick [greasing a quiche dish].** Therefore, participants' basic food chemistry knowledge was related to sensory knowledge of perceptual knowledge.

d) Preparing tasty and nutritious meals

Participants used different food preparation methods and appliances in preparing tasty and nutritious meals by retaining nutrients and having the knowledge to reduce the ingredients that can cause health concerns. For instance, participants used stackable steamers to steam their vegetables to *al dente* [FD: CC8 no.2]. **CC8-female: What did we steam here? Oh, the vegetables! ... CC8-male: it still must have a bit of a crunch ... CC8-female: Al dente.** In addition, ready-to-cook from frozen oven-baked potato chips were prepared in an air fryer as a healthier alternative than deep-frying the potato chips while still being tasty [FD: YF2 no.3]. **YF2:**

Because it feels to me it's healthier than frying it in oil, and it's actually tastier. Therefore, it related to the participants' conceptual knowledge and mechanical and planning skills. The following section reports on exploring the indicator of knowledge of nutrition for good health.

5.2.1.1.3 Knowledge of nutrition for good health

Knowledge of nutrition for good health was prominent in the cooking competence literature, as described (Begley & Gallegos, 2010b; Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2003; Vanderkooy, 2010; Wagner, Ploetz *et al.*, 2011).

The knowledge of nutrition for good health indicators was explored and discussed according to the relevant *South African food-based dietary guidelines*. Participants' knowledge of nutrition for good health is further explored and described according to participants' knowledge of special dietary requirements, including food preservatives, additives, and appropriate portion sizes.

a) Knowledge of nutrition for good health according to the relevant South African food-based dietary guidelines

Participants' knowledge of nutrition for good health was explored according to the relevant South African food-based dietary guidelines.

The food-based dietary guidelines for South Africa were revised in 2013 and summarised into eleven main guidelines (Vorster, Badham & Venter, 2013):

- Enjoy a variety of foods
- Be active
- Make starchy⁶ foods part of most meals
- Eat plenty of vegetables and fruit every day
- Eat dry beans, split peas, lentils and soya regularly
- Have milk, maas or yoghurt daily
- Fish, chicken, lean meat, or eggs can be eaten daily
- Drink lots of clean, safe water
- Use fats sparingly and choose vegetable oils rather than hard fats
- Use sugar, foods and drinks high in sugar sparingly
- Use salt and food high in salt sparingly

⁶ To clarify, participants mostly referred to starches as carbohydrates. According to the British Nutrition Foundation (2021) examples of starchy foods include bread, pasta, rice, couscous, potatoes, breakfast cereals, oats, and grains such as rye and barley, whereas carbohydrates are composed of starches, sugars and fibre. Therefore, starches contain carbohydrates, but carbohydrates are not necessarily a starch. Therefore, the term starches were used in this study.

The Nutrition Information Centre of the University of Stellenbosch (NICUS) has indicated menu and meal plan examples based on these South African dietary guidelines (Vorster *et al.*, 2013). These menus and meal plan examples indicate two eating patterns for a healthy lifestyle. Eating pattern A is an economic plan, with more starchy food options than animal food products, whereas eating pattern B is more coherent with the findings of the participants' food group consumption, with more protein choices and fewer starchy foods. Therefore, the findings on participants' knowledge of nutrition for good health will be explored and discussed based on the South African food-based dietary guidelines, as well as the principles of healthy eating pattern B (NICUS, 2013; Vorster *et al.*, 2013).

Participants described their knowledge of healthy food consumption by providing information about sugar (including fruit), vegetables, salt, starches, unsaturated and saturated fats and low- and full-cream dairy products.

The findings revealed that some participants were aware that sugar should be limited in a diet. One couple applied this knowledge to their diet by halving the sugar content in recipes to decrease the amount of sugar they consumed. **YC6: Especially with sugar, we always tend to half it.** Other participants would purchase food products low in sugar and limit their fruit intake because of the natural sugars within the fruit. **CC8: Mostly, we eat only fruit like pawpaw or strawberries or that kind of thing, very rarely bananas, although we got a banana craving the other day ... there is a lot of sugar in it, I think.**

Participants showed knowledge that sugar must be limited for a healthy diet, which coincides with the South African food-based dietary guidelines, which indicate that sugar can be consumed as part of a healthy diet but should be used sparingly. However, according to the healthy eating pattern B guidelines, at least two fruits should be consumed daily, and it seems not to be understood by some in this regard (NICUS, 2013). Participants limited the natural sugars within the fruit because it is perceived as unhealthy.

According to South African food-based dietary guidelines, “plenty of vegetables” are recommended daily (Vorster *et al.*, 2013). Furthermore, it is recommended to eat a variety of at least three different vegetables per day, including dark green leafy vegetables, yellow vegetables, and vegetables high in vitamin C like tomatoes, broccoli, peppers, potatoes (classified as starch) and cabbage (NICUS, 2013).

The findings revealed that participants were aware that a variety of vegetables should be consumed regularly. Some participants believed that one can consume as many vegetables as one wants and that vegetables growing above ground (green vegetables) can be consumed

more than vegetables growing below ground (starchier vegetables), which should be limited. **CC8-male: But vegetables you can like, unlimited! ... I would say more your greenish vegetables ... above the ground, yes everything that grows above the ground; CC8-female: Except sweet potatoes; CC8-male: here and there some of the underground vegetables, because it's high in starch.** However, although participants knew they should consume a variety of vegetables regularly, three participating couples' FDs indicated a low vegetable intake [FD: YF1; FD: YC4; FD: YC5]. Four participating couples' FDs indicated a low to fair consumption of vegetables [FD: YF2; FD: YC6; FD: YC7; FD: CC9], and only two participating couples indicated good vegetable inclusion in their meals [FD: YF3; FD: CC8].

Participants showed knowledge that salt should be limited. **CC8: ... and salt. Many of those things [bastings] have like very high amounts of salt in them.** Participants who actively reduced their salt intake were those diagnosed with high blood pressure, followed specific dietary guidelines, or took preventative measures because family genetics made them prone to certain diseases. These participants made use of alternative salts, which participants believed to be healthier alternatives to regular table salt, such as organic sea salt mixes and Himalayan rock salt (also known as pink salt). **CC8-male: It's that organic salt one ... CC8-female: This one is very nice! Sea salt, vegetables and herbs, celery, leeks, cress, onion, chives, parsley ... and all those herbs are certified organic. ... YC7: Because of the blood pressure problem in the house, so also recently started to buy [Himalayan Rock Salt], the better one.**

One participant also used to consume salt by diluting it and then drinking it as a preventative measure against high blood pressure, although in the end, stopped. **CC9: My mom! [laughs] To be healthier, we have cholesterol and high blood pressure in our family, so I used to drink it, but not at this stage, just to be a bit healthier.**

Overall, participants were knowledgeable that sodium consumption should be limited. The South African food-based dietary guidelines indicate that sodium should be consumed sparingly, as high sodium intake places a person at risk of developing high blood pressure (National Department of Health, South Africa, 2022). Furthermore, besides the trace elements of minerals such as magnesium, potassium and calcium, Himalayan Rock salt is very similar to regular salt (Carapeto, Brum & Rocha, 2018). The perception of participants with high blood pressure, or the potential to develop high blood pressure and cholesterol (due to genetics), of consuming Himalayan Rock salt to reduce these illnesses indicated the influence of participants' information sources on their food choices and consumption.

Participants' knowledge indicated that starches should be limited. Some participants indicated that products high in starches, especially bread, contributed to weight gain and therefore, consumption should be limited. **YC4: It's unhealthy [bread]. We feel there are so many starches in it, and it just sits right here! [Pointing to her hips].** However, contrastive to these types of statements, participants consumed pasta, *pap*, wraps and rye as healthier alternatives to wheat bread. **YC7: Because we no longer eat bread, well, we still eat bread, but we do not want to eat bread. We would rather eat and use wraps to cut out the starch.**

Furthermore, participants consider food products, like bread containing gluten or yeast, unhealthy. **CC8-female: Ogh! It's delicious! But out of principle, we do not eat bread! CC8-male: But look, if we can bake it fresh, then I will feel less guilty about it.** In addition, bread would be cut from a diet when one participant was under the impression it affected her breast milk and caused her infant to have a rash, reflux or developed an allergy from it. **YF3-wife: when I was breastfeeding, he was a little more of a difficult baby, and we were scared that it might have had an influence. With my breast milk, he got a bit of a rash, and he had a bit of reflux, and those stuff, and I thought it was because of what I was eating, and that's when I started reading labels to see if it's not because of the gluten, that he is not allergic to something like that.**

It is clear that some participants believed starches to be unhealthy and that these should be limited in one's diet, even though starches are the food group one is recommended to consume the most for a healthy diet (Vorster *et al.*, 2013). The findings also revealed that some participants were uninformed or misinformed, as bread was being vilified and labelled as unhealthy and alternative products like wraps were deemed healthy alternatives, although these were also high starch content products.

The findings revealed contradicting knowledge regarding unsaturated and saturated fats. For instance, some indicated unsaturated fats as part of a healthy diet, whereas others indicated saturated fats as part of a healthy diet. **YF1: Yes, the red one, but we buy the blue [Rama™ margarine] because it is supposed to be healthier. ... CC8: It's one of the more affordable oils [coconut oil] if you look at the healthy oils.** The same was found regarding dairy products, as with fats. Some participants indicated low-fat dairy products to be healthy, whereas others indicated full-cream dairy products to be healthy. **YF2-wife: not the usual long-life milk, just that extended shelf life ... YF2-husband: and it must be low fat [discourteous remark towards his wife because it is not full cream]; YF2-wife: and it must be low fat [repeat statement under her breath]. ... CC8: Ayrshire double cream ... I also think it's healthier; we do not easily buy something that says it's low fat or lite.**

These findings indicated that some participants were uninformed or misinformed regarding fat consumption. The South African food-based dietary guidelines indicate that dairy should be consumed daily. However, fat should be used sparingly in a diet and therefore, low-fat dairy and unsaturated-fat food products (e.g., sunflower, canola and olive oil) are recommended rather than full cream and saturated fat (e.g., hard fats like butter and coconut oil) food products (National Department of Health, South Africa, 2022; Vorster *et al.*, 2013).

From the findings, one participating couple believed in both the consumption of saturated (e.g., butter) and unsaturated (e.g., olive oil) fats. **YC6-wife: No butter, I think there is only salt in. I always check that there's nothing else in. ... YC6-husband: For me, there is a health thing to it, but it may be wrong but, I mean, I look at the people in Portugal, my family there and how they even use much higher quantities of olive oil than we do and they are not very sickly.** Also, the participants will consume low-fat (e.g., low-fat salad cream) and full-cream dairy (full-cream milk) products. **YC6: we will take the Nola one because its fat percentage is under 15 grams or something, but we got it from the dietician ... she told me it's the better one to buy, so that's actually only why we buy it. ... YC6: we like full cream [milk].** The participants obtained certain food information from a dietician and the participant's family backgrounds. Furthermore, it is seen in the special dietary requirements that these participants also perceive a *natural diet* free from preservatives as healthy and therefore consume saturated and full-cream products.

Additionally, it was found that participants would nullify a meal's nutritional value by adding energy-dense condiments high in sugar and salt. For instance, a participating couple used sweet chilli, peri-peri, tomato and barbeque sauce, French fry dressing, chutney and mayonnaise to add flavour to their meals [FD: YF1]. Another participating couple would prepare crumbed hake fillets, roasted vegetables in an air fryer and potatoes in a microwave oven. However, as depicted in the photograph of the FD, the couple would add large amounts of butter (saturated fat) to the potatoes and a salad with French fry dressing over the crumbed hake [FD: YF2 no.4]. The participating couple also prepared a chicken stir-fry with a variety of vegetables and rice, making it a nutritious meal, but added nearly half a bottle of sweet and sour sauce because of the husband's preferences. **YF2: day four was a healthy day ... it has to be saucy because he [husband] doesn't like it when the stuff is dry, so I usually add about half a bottle, more for the sauce than the taste.**

b) Special dietary requirements

When participants had to follow special diets, knowledge of their special dietary requirements was obtained. Knowledge of *food preservatives* and *additives* forms part of *special dietary requirements* and is discussed simultaneously. Participants showed knowledge of nutrition

obtained through weight-loss programmes, being diagnosed with high blood pressure, and following the 'Candida diet' for better health and natural food diet consumption, including eliminating preservatives and additives. A discussion of each of these special dietary components follows.

One example, for instance, is that a participating couple followed the dietary advice from the Weigh-Less health and weight loss programme. Although the couple did not follow the weight loss programme as strictly as when they were members, the wife still tried to apply some of the principles to her family's diet⁷. **YF2: I always try that there is at least something healthy also on the plate ... and I was at one point a little more pedantic about the types of vegetables, that you do not have now rice and potatoes and sweet potatoes that all are actually starch based, but it's much less since we stopped with Weigh-less.**

Another relevant example is a participant, diagnosed with high blood pressure, who tried to reduce her consumption of products high in sodium. **YC7: I'm cutting out my Aromat, but here [refer to FD], I maybe was still cooking with it ... I have high blood pressure, so I have to pay a little attention to it.** Another participant followed the Candida diet for two months, due to the medical condition of Candidiasis (although not diagnosed with the medical condition) and continued to consume and purchase products based on this diet's principles. **CC8: he specialises in herbs, and then he just gave me a diet to follow for two months while using the pills, and it was the Candida diet. I was not diagnosed specifically with it, but he gave me the Candida diet ... and now, it's not precisely the Candida diet, we break it a bit, but we try just to eat healthily.** The participating couple indicated that the diet mainly prohibits products containing yeast, spices, sugar and gluten, preservatives, and additives. **CC8: Like the main thing is the yeast that I would cut out, and yeast is in I spices too ... sugar and gluten too.**

In addition, a tendency that emerged, although not special dietary requirements, participants' diets moved towards more natural food consumption, which was considered as foods in their most natural form, unprocessed and free of preservatives and additives. **YC5-husband: we try to move more towards natural, like the food in its natural form; YC5-wife: and simple ... if it comes from thirty different things, it feels healthier.** The findings indicated that the participants following a *natural diet* would also consume full-cream products, that did not contain added preservatives and additives and were described as products in their rawest

⁷ The researcher observed on entering the YF2 house through the kitchen, that Weigh-Less programme booklets were on the kitchen counter.

form. **CC8: [full-cream yoghurt] generally has no flavourings or additives. It's in its rawest form if I can put it like that.**

c) Portion sizes

Portion sizes were described in numerous different ways. Some participants identified a portion according to the space the food took up on a plate. Proteins and starches were supposed to take up a quarter of a plate and vegetables between a quarter to half a plate.

YF1: Like if you take a plate ... it's rice and potatoes and vegetables [points to different quarter areas on an imaginary plate] and meat, there's meat [points to a quarter area on imaginary plate] ... so it's probably about a quarter or something, I think? ... YC6: I will eat half a plate of vegetables; he [husband] will only eat a quarter.

Some participants measured red meat and chicken (e.g., chicken breast) according to a palm or hand size. **YF2: Well, as far as I know, your meat is the size of your palm.** Furthermore, some participants measured fruit portions in units. A single fruit was considered a portion, like an orange, banana, or apple. **YC5: I think two fruits a day.** One participating couple compared portion sizes provided by a specific restaurant chain. **YC4: You know those that you get from Spur? [vegetables] In the two bowls? That's about two different portions.**

In addition, portions were estimated by weight. There was a considerable difference between the male and female participants' perception of protein portion sizes when assessed by weight, especially red meat like beef steak. Males' estimations were 200g to 500g and females' 100g to 250g per portion of protein. **CC9-male: Yes, oh, it's not much, 300 grams ... CC9-female: each one gets a separate one.**

Both genders estimated other protein servings, such as chicken breast, between 100g to 150g per portion. **CC9: I know now it's when I used to go to the gym, then you focus on about 250 grams, no geez, that's a bit too much, 100 grams, 150 grams, around there ... YC6: chicken is one breast between 100 and 150 grams.**

Participants revealed awareness of appropriate portion sizes that coincide with the South African food-based dietary guidelines. According to the guidelines, starch visually represents about a quarter of a plate. Plenty of vegetables should be consumed in at least three to five portions daily, about half a cup of cooked vegetables and one cup of raw. One portion of red meat should be the size of a hand palm and one medium-sized fruit represents a portion (National Department of Health, South Africa, 2022; NICUS, 2013). However, participants require knowledge concerning the weight of protein portion sizes, as the consumption estimate of proteins is much more than indicated by the South African food-based dietary guidelines, which is two portions of protein daily and no more than 160g per day (NICUS, 2013).

It is noted that where participants obtained information related to their food consumption and food products, ingredients and portion sizes, participants perceived as healthy was directly correlated with the knowledge of food trends and fashions indicator (see 5.2.1.1.4). Therefore, it seems as if participants' knowledge of nutrition for good health according to the relevant South African food-based dietary guidelines, special dietary requirements, food preservatives and additives and the appropriate portion size, was strongly interrelated with their knowledge of information sources and food trends and fashions indicators.

In addition, it was revealed that YFs were conscious of their children's nutrition while they were not concerned about their own, mainly due to time constraints and busy lifestyles. One couple indicated that there are just too many stresses and worries in life that they cannot stress about their health as well. **YF1: we don't eat that healthy, but I'm really conscious about her [child's name]. I let her eat very well ... I really think there's just enough other stuff to stress about and worry about and to do, that I'm not always conditioned to still try and make sure we eat healthy.**

Participants' knowledge of a healthy diet varied. A contributing factor could be attributed to the vast amount of contradictory nutritional information regarding good health that is available in the popular media. It creates confusion about the requirements of a healthy diet, which is discussed under the following indicator, participants' knowledge of food trends and fashions.

5.2.1.1.4 Knowledge of food trends and fashions

Knowledge of food trends and fashions has been described as part of a person's academic dimensions knowledge and includes knowledge of *foods*, *food choices* and *preparation methods in vogue* (Begley & Gallegos, 2010b; Short, 2003). Participants' knowledge of food trends and fashions was derived from the food trends in vogue during data collection (Mellentin, 2015).

Six food trends were identified, namely, the

- (i) *natural food* trend, which included the
- (ii) *whole dairy food product* [including the *lacto-fermented* sub-trend] trend, or following the
- (iii) *free-from ingredients* and the
- (iv) *decreased sugar consumption* trend.

Other trends identified were:

- (v) *high-protein diets* and the
- (vi) *fragmentation of the consumer's mind* trend.

The knowledge of food trends and fashions indicator was explored according to the six food trends identified.

The natural food trend comprised not only consuming products in their most natural form but also whole dairy products that were less processed, had added probiotics or cultures and tended to contain fewer preservatives, additives, and sugar. It is said to be the *king of trends*, as it is the trend that influences and connects nearly all the other trends (Mellentin, 2015). It has also been said to be the diet enlightenment trend. The participants who followed a natural food diet as a healthy diet also followed a whole dairy product diet and the free-from-ingredients trend. **CC8-male: most of the time, either full cream or that double cream, I personally think it's healthier; CC8-female: Ayrshire, yes, double cream, I also think it's healthier. We do not easily buy something that says it's low fat or lite or something like that ... CC8-male: they add other things that will make it taste like the full-fat ... CC8-female: Yes, it is then a more processed product, instead of just; CC8-male: Natural.**

Together with the whole dairy consumption, probiotic and cultured food products were also consumed, which related to the lacto-fermented sub-trend of the whole dairy trend. **CC8: The yoghurt, specifically the Woolies yoghurt with the How-R-U cultures, includes probiotics.**

In addition, all participants revealed that sugar was unhealthy. The participants who consumed full cream dairy products also consumed a diet low in sugar, which is related to the decreased sugar consumption trend. **YC6: we look for sugar [in products] that does not have a high sugar content and preservatives.** However, these participants would instead consume food products, such as honey or Xylitol⁸, as a sugar replacement for cane sugar. **CC8: the sugar we will replace with Xylitol, in a way incorporate it, or instead use honey even though honey has more sugar, but I just feel safer with it.** Some participants also followed the high-protein diet trend.

Most participants perceived a healthy diet as one low in starch. The researcher also identified participants consuming large meat portions. These findings related to a high-protein diet trend, which is similar to the *Banting* diet trend in South Africa. **YC5-husband: I Banted a bit at one point ... I think it's just the perception of starch and sugar ... it's not that we cut it out ... starch specifically ... I think it's just the perception of it being unhealthy.**

⁸ A low-calorie, 'sugar free' artificial sweetener in foods (Bennion & Scheule, 2015:181)

Lastly, some participants obtained contradicting health and nutrition information from various sources, as seen in the knowledge of information sources indicator, the fragmentation of consumer's mind trend. It creates mistrust in expert advice and health professionals. The participants seem to lose trust mainly because of the constant changes in dietary advice and even contradictory advice available to consumers, which creates uncertainty (Cronin, 2016; Mellentin, 2015). Participants had obtained information from medical and health practitioners and promoters that had provided participants with contradictory advice on nutrition for good health. **YC4: but I'm actually not sure. Look, we've seen a lot of stuff [diets] by now, especially with the gym, you know? We try. They give you guidelines that this is how you should eat, and you should consume this, and you should consume that [specific foods], but a person cannot stick to it.**

Therefore, this fragmentation caused enabled participants to use technology to help make their health and nutritional food choices. Participants used media platforms (e.g., the internet, social media platforms, television and radio talk shows) to gain food information. Participants made their own dietary choices based on this increase in their knowledge. Thus, they utilised information on a healthy diet from un reputable sources, which can lead to misinformation. **CC8: I think the health aspect that concerns us has led us to do more research in the sense of, what is the healthier option? Which is better? What is the best option? It's self-study all the way.**

Despite the issue of misinformation, this use of mass media platforms to gain food information empowered the participants to make their own choices regarding their health and nutritional food consumption. They were, therefore, able to decide for themselves what works best for them as individuals (Mellentin, 2015). **YC6-wife: I think life is changing so much these days; there's so much information, and every girlfriend is on a diet, and they read something about sugar and Stevia and all these bunches of funny stuff, so I listen. I'm very interested in listening to all that stuff and reading that type of article when it crosses my path ... YC6-husband: I also think it's research; YC6-wife: Yes, research too.** Therefore, participants self-diagnosed themselves, creating their own definitions of what is considered healthy. As previously discussed, it is interrelated and coincides with the nutrition for a good health indicator. The findings and discussion of the knowledge of where food comes from indicator follows.

5.2.1.1.5 Knowledge of where food comes from

In literature, the indicator of **where food comes from** relates to participants' knowledge of food origins, history, location (geography) and seasonality (Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011; Short, 2003). From the findings, some participants only showed

knowledge of food origins and location (geography), and participants were not particularly concerned with the food's seasonality but rather the food's *natural* state, as explained in the previous two indicators.

Knowledge of food origins was seen in participants who supported local suppliers and producers, such as the local farmer's market were prone to prepare their own food products.

YC6: We purchase at the farmer's market, and it is not necessarily highly processed food and comes directly from the farmer's land. ... YC6: I purchase fresh tomatoes from the farmer's market ... I preserve my own bottles [tomato sauce] once a month.

Knowledge of the location of where the produce came from was found in three participating couples, especially with meat products purchased through friends and family members. For example, beef purchased in the North-West province, or Virginia in the Free State province of South Africa and lamb through a family member who had a connection for lamb purchased directly from a farmer in the North-West province of South Africa. Furthermore, knowledge of the location of food products was found in participants who hunt. **YF2: The meat is usually hunted ... and the lamb is purchased through his dad. Directly from a farmer, somewhere in the North-West.**

In addition, participants supported a city school fundraising project by purchasing free-range chicken, which could be traced to local smallholdings. **YF2-husband: they are actually bigger ... YF2-wife: we started purchasing it as part of fundraising for a school in the city. I don't think I have ever bought chicken in a store ... it's smallholdings chicken ... one has the idea that they are better because they taste different.**

Therefore, some participants were aware of food origins because they prepare their own products, hunt their own meat and were familiar with the suppliers, producers or supported local suppliers and producers. Reasons for supporting a local supplier were not just for the support rendered, but also because it was more cost-effective. The participants, who were familiar with the suppliers or producers of their food products, were aware of the food origins through family members and friends. This related to the knowledge of information sources indicator. Furthermore, purchasing from these suppliers were also related to participants' perceptual knowledge in their perception that free-range chicken is bigger and taste different and therefore associated with better quality. The next indicator explored the knowledge of participants' food and hygiene safety practices.

5.2.1.1.6 Knowledge of food hygiene and safety practices

The indicator of participants' **knowledge of food hygiene and safety practices** related to the knowledge of food, kitchen and personal hygiene and safe practices (see **2.2.1.1**). The findings found that participants displayed *knowledge of safe food preparation practices, kitchen and personal hygiene and safety*.

a) Safe food preparation practices

Participants' knowledge of safe food preparation practices was revealed through their knowledge of cross-contamination and rinsing of ingredients such as vegetables and fruit.

The participants' most common food hygiene practices, in line with cross-contamination prevention guidelines (Brown, 2019:80), were to use separate cutting boards for meat, vegetables and salads. Knowledge of cross-contamination was revealed in that participants indicated the safe food preparation practices regarding raw protein products such as chicken and pork, which, if not handled and cooked correctly, may lead to a person contracting illnesses such as Salmonellosis. Participants were conscious of handling and cooking specific ingredients hygienically and safely. Several participants would use separate cutting boards for different ingredients when working with meat, chicken, vegetables, and salads during food preparation. Cutting boards were thoroughly rinsed between uses, raw meat and vegetables were kept separate before cooking and participants would start with cutting the vegetables and end with cutting the raw meat. Otherwise, they used a new cutting board. **YC7-wife: we will like to chop the onions, mushrooms, and garlic, and then chop the meat, and then we are done with the board; YC7-husband: Cross-contamination ... if there is a salad to be chopped, we will use a new board.**

The findings revealed that knowing about cross-contamination did not imply that participants applied the knowledge. A participating couple with knowledge of cross-contamination would reuse a marinade in which raw chicken had already been marinated. **YC6: we read about Salmonella, cross-contamination, and all those stuff at university. I don't want to get sick! ... YC6: We reused the marinade two or three times, so that was from a previous time because there was already frozen marinade in the freezer, so we didn't need to make the marinade again.**

Participants had knowledge of cross-contamination, especially that which is associated with raw chicken. They used different cutting boards and washed them in between handling raw meat. Moreover, participants were also aware of foodborne illnesses such as *Salmonella*, which can be obtained from unsafe practices with raw poultry.

Furthermore, two participating couples with knowledge of safe food preparation practices, but who lacked the knowledge of preparing the ingredients safely would avoid using these ingredients in food preparation altogether. **YF2: there will never be pork ... we do not know how to cook it ... I do not know how ... I think the problem with the pork and the chicken in this house is, it's seen as it must be super cooked to be safe, and when it's cooked like that, it's cooked until dry.** In addition, a participant did not only gain safe food preparation knowledge through academic knowledge, but through perceptual knowledge from when a friend had contracted Salmonellosis. **CC9: since my friend contracted Salmonella! No, look, chicken is not something that you play with. You also don't leave it in the sun, that type of story, and it also shouldn't touch anything else.**

Food safety and hygiene practices were applied by some participants, by rinsing ingredients like fruits and vegetables to remove visible soil before starting the food preparation. For instance, a participating couple would rinse the soil from sweet potatoes they wrap whole in aluminium foil, before placing it in the [†]*braai* coals to cook, because the sweet potato goes directly on their plate and therefore needs to be clean [FD: YC7 no.4]. **YC7: For soil and so, because you put it on your plate as well when it's done cooking, just to keep it clean.** Another participating couple would rinse spinach and salad leaves with salt water to remove any possible insects. **CC8: We always wash it with salt to kill the insects, and you must wash it in salt water.**

b) Kitchen and personal hygiene and safety

Kitchen surfaces were wiped clean, and participants indicated that they would constantly clean during the food preparation for hygiene purposes. **YC4-wife: If you haven't wiped or sprayed your glass cutting board clean the last time you worked there, and you work on it now, there might be a germ stuck there where you prepare your food on, and it ends up in your stomach ... I'm just saying it's just really dirty, flies, ants, especially.** However, other reasons, such as limited food preparation space unrelated to kitchen hygiene, contributed to participants' keeping their kitchens clean. **YC4-husband: we do not have a huge kitchen, so if one place is a little bit dirty, you cannot go and work at another place. We only have one place to work, so we have to keep it clean all the time.**

Washing hands before food preparation were vital to most participants and numerous participants said they washed their hands continually during food preparation. However, it was found that the type of food prepared would determine if participants cleaned their hands. For instance, a participant would wash his hands before he worked with raw meat, but handwashing was less critical if he *braai*ed using tongs and his hands would not touch the meat. **YC5: Sometimes I will not wash my hands if, for instance, I braai, and I know that**

I take it out with the tongs. But if I am going to touch something like literal mincemeat, I will certainly wash my hands!

However, it was revealed by some participants that they should be more aware of hygiene during food preparation, but that they were not conscious of it, since they just wanted to start with the food preparation. ***CC9: you wash your hands before, but you should probably do it in between too, and wash more stuff like tomatoes. You should be more aware of what you must rinse because you never know what they do with the products ... you don't always think about it when you start cooking. You just want to cook!***

A lack of kitchen and personal safety knowledge was revealed, where some participants would cut vegetables in their hands as it is quick and comfortable for them, instead of cutting it on a cutting board or on a surface. ***YC4: If a salad, if I now compare it to a salad actually cut, I just hold everything in my hand.***

Furthermore, participants were cautious in the kitchen with cutting and food preparation methods and avoided it to prevent injuring themselves. For instance, participants would purchase pre-cut vegetables to prevent injury. ***CC9-female: I purchased halved [gem squash] ones because he is usually not here when I must cut it, and I struggle to cut it. CC9-male: because I told her she is going to cut off her hand, it's too hard.***

In addition, food preparation methods, such as deep-frying, would be avoided to prevent injury from burning with the oil. ***YF2: I'm too scared of oil, so I oven-bake it ... it's probably partly that I do not know how, but I don't know. It feels like one always burns with oil.*** The last academic knowledge indicator explored was participants' knowledge of information sources.

5.2.1.1.7 Knowledge of information sources

The last academic knowledge indicator, **knowledge of information sources**, pertained to *where participants found information*. According to literature it pertains to participants' knowledge in obtaining required information from *food labels*, *electronic data* (e.g., internet sources), *people* and *cookbooks* (Bursey *et al.*, 2010; Desjardins & Azevedo, 2013; Fordyce-Voorham, 2011). Participants' information sources, from which they obtained their *know-that* knowledge, included family and friends, educational institutions, medical practitioners and health promoters, cookbooks, magazines, television, radio, and food product labels. This indicator is described as one of the aspects of cooking competence that will enable an individual to obtain and use available resources, that will equip them to prepare food that tastes and make one feel good on a regular basis (Desjardins & Azevedo, 2013).

Three themes emerged from the kind of academic knowledge information participants sourced: food preparation knowledge, health and nutrition and food product information. Furthermore, an additional finding revealed the importance of an individual's background information. As described above, knowledge of information sources is also the indicator that was intertwined with all of the other indicators.

a) Food preparation information

From the knowledge of food indicators discussed, it is seen that participants gained *information on food preparation* from family, friends, and additional sources such as cookbooks, television shows and product labelling cooking instructions.

The findings indicated that participants obtained their food preparation information from their families, such as a mother, father or grandparent. The information was transferred by direct teaching. Information was and still is transferred directly, by teaching it through demonstration: physically (showing them how), verbally (telling them how) and indirectly through observation (looking at what they are doing), or a combination thereof. **YC4: *I have to say to me, it comes a lot from my grandmother. My grandmother made incredibly delicious food, and I went to school in Melville for a while, and I was there a lot in the afternoons ... I think I helped here and there too. I took some of her recipes ... and like from my mom, I helped her a lot too, if I want to make something new, then I usually ask my mother.***

Additionally, family food preparation information indicated that specific food preparation knowledge was transferred from fathers to their sons, like how to *braai*. A particular finding that stood out was the passing-on of a family Portuguese chicken marinade recipe from father to son. **YC6-wife: *He makes the marinade, and it's his and his father's secret. My mother-in-law does not even know what the recipe is ... I now know what comes in it, but I can't make the quantities. They do not know either, and they pour and look and estimate it until it's right. YC6-husband: It's in the taste the marinade has ... and that's how I was taught, how my father taught me.***

Participants obtained food preparation information from friends. For instance, a participant mentioned that one of her commune friends studied food. She noted that all the girls would prepare food together in the evenings and so gained food preparation information that she still uses today. **YC5: *I lived with girls in communes and stuff where we all cooked together ... I lived with a girl who studied food and lived with a house full of girls where we cooked together every night, and I still use some of that knowledge.***

Food preparation information were also obtained from cookbooks. For instance, a participating

couple who lived in Korea for several years would use their Korean recipe books when preparing Korean food [FD: YC7 no.2]. **YC7: Korea, from a recipe book ... we stayed there for two and a half years ... so it is in one of my recipe books that I looked at one day.**

Celebrity chef shows on television provided food preparation information on how to utilise leftovers and prepare and cook fresh pasta. **YF3: I saw the other day on the TV of Jamie Oliver that you must not throw away food, that you can actually use it for a lot of stuff. ... YC6: four minutes is nice, then I remembered, oh! But chef Ramsey said it too!**

Participants gained food preparation information by reading, for example, the heating and timing instructions for UPFs such as heat-and-eat ciabatta bread [FD CC9 no.5]. **CC9: you just put it in the oven for a bit so that it bakes a little, which the package says because I also do not know that bread either.**

b) Health and nutrition information

From the knowledge of nutrition for good health and knowledge of food trend and fashions indicators, a young family wife revealed she had obtained health and nutrition information from the Weigh-Less health and weight loss programmes and home economics during high school. **YF2: It was Weigh-Less and home economics.** Another participating couple obtained information from a Herbalist concerning the Candida diet. **CC8: he specialises in herbs, he gave me a diet to follow for two months while I used the pills, and it was the Candida diet.** In addition, some participants health and nutrition information were obtained from health practitioners and cookbooks.

A participant obtained health and nutrition information from a biokineticist, who had provided the participant with an eating programme. Guidelines from this indicated that products to be consumed had to be less than three grams of fat per 100 grams. **CC9: according to my biokineticist, she has given me a whole eating programme thing, but I do not follow it so strictly, but I think she talked about I think 0.3 grams to a 100 gram or something or 3 gram to a 100 gram is then apparently acceptable, so I actually only look for the lowest.** In addition, health and nutrition information on portion sizes were obtained from a dietitian. **YC6: we've been to a dietitian before, and they have that round plate that they tell you it's how much starch you should eat and that type of thing, per portion sizes.**

Another participant obtained health and nutrition information from Low-GI cookbooks. **YC6: the biggest thing where I started to get health conscious is when we got married, I started to use low GI cookbooks, that Sustained Energy, cookbooks, I had it, it was my recipe books, and I made a lot of food out of it, so that is actually where we started.**

c) Food product information

The health and nutrition information, obtained from a Herbalist on the Candida diet, determined the type of food products a participating couple would purchase, providing them with *food product information*. For instance, the couple would only purchase Woolworths™ double cream yoghurt with added cultures. In addition, food product information was found from medical practitioners, such as medical doctors and dieticians, radio talk shows and advertisements.

A participant found food product information from his medical doctor, who recommends Flora Proactiv™ margarine **CC9: I also talked to my doctor about it, he said to me it's your best.** In addition, food product information provided by a biokineticist (see 5.2.1.1.7. b) determined the type of food products some participants would purchase. Lastly, food product information was obtained on a low-fat salad cream from a dietician; therefore, participants purchased the product. **YC6-wife: we will take the Nola one because its fat percentage is under 15 grams or something, but we got it from the dietician ... she told me it's the better one to buy, so that's actually only why we buy it.**

The participating couples who followed the natural food and free-from diet trends (see 5.2.1.1.4) would read product labels to obtain information on the ingredients the products contained. **CC8-female: Permanently [read labels] ... CC8-male: You'd be quite surprised what stuff they throw in the sauces.**

Furthermore, radio talk shows contributed to participants' product information. For instance, a participant had listened to a discussion on the radio about the importance of supporting local producers, in this instance, olive oil producers. Thus, the participant tries to purchase only locally produced olive oil. **YC5: I search for the South African brand I think I heard on the radio, like a talk about it. So, I try to find the South African one [olive oil] only to support a bit.**

Advertising was also a source from which participants obtained their knowledge of food product information. For instance, one couple said they would not purchase any other spices than Robertsons® spices, because they are familiar with them and attributed it to the Robertsons® spices' advertisements on television. **CC9-female: I think I'll just go for Robertsons all the time because I know it ...I know exactly where it is between the shelves; CC9-male: I think I always see that advertisement in my head of Robertsons' spices! So, I think they did it pretty well!** Additional findings revealed the importance of participants background information.

d) Importance of participants' background information

Lastly, the findings revealed that participants' *background information* on how they were brought up and taught as children formed the basis of their food information. It also affected how the participants ate and prepared food as adults today. For example, participants described it as how a person eats their eggs and prepares them as they were taught to do as a child.

YC5-wife: the way you eat your egg is still something you've been doing since you were little. You like a hard fried egg because it's how you learned it when you were little, 'fry an egg hard' ... That's why when he prepares food then I leave him because he has his manner from a young age, that's how one eats it, and that's how he still wants to eat it; YC5-husband: I think it's the way one was raised, but it's little things that we, she will cook something slowly, the sausage in the pan, lid on, the heat is relatively low, and that gets cooked like that, and I will-; YC5-wife: full blast!; YC5-husband: Yes, turn that pan, and I burn it half, understand? ... so yes, we have different ways, but I think it comes from a young age.

In addition, three female participants gained background information from cooking competence related subjects from either high school or university. The subjects gave these participants knowledge on food preparation, health and nutrition and food hygiene and safety practices (see 5.2.1.1.2; 5.2.1.1.3; 5.2.1.1.6). The participant who had a cooking competence related subject for six months during her first year at university indicated that the subject changed her whole perspective on food preparation. She grew up in a convenience-orientated household and the subject changed the way she and her husband prepared food.

YC6-wife: It influenced me a lot! [University] It changed my whole life around food ... I've always liked cooking; I don't necessarily think I would have made my own stock. Because there [university] I realised how quick and easy it actually is because our cooking periods were just, jeez, in two hours you have to serve a dish for [lecturers' name] to evaluate. Or within an hour and a half because you still have to clean too. And then I realised that you can make these awesome stuff in half an hour or in an hour. And it made me realise, you know, it's actually easy, you don't need to go and buy the packaged stuff that is bad; YC6-husband: Because I would say her mother's reference around [food], she didn't have her mother's reference necessarily around cooking food, her methods and stuff; YC6-wife: Yes, my mother they, I grew up on the packets stuff and that type of things and I, we, don't like those things. So it definitely had an influence ... YC6-husband: I don't think she [mother-in-law] necessarily realises that there is other better, tastier food; YC6-wife: There are other better foods, yes when I studied it and when I realised hey, but you can make it yourself you don't need to buy the package and it's tastier.

Therefore, participants' knowledge of information sources directly influenced their decision-making abilities and the execution of their knowledge. The sources of where participants found their information formed the basis of how they interpreted and understood all aspects of their cooking competence. After exploring the findings of the academic knowledge dimension, the second cooking knowledge dimension of perceptual was explored and described.

5.2.1.2 Perceptual knowledge [Sub-objective 1.1(b)]

The second cooking knowledge dimension explored was the dimension of perceptual knowledge and its related indicators, as illustrated in **Figure 5.3**. Perceptual knowledge is also known as a secondary skill, as described by Short (2002:23), because it is obtained through former practice and experiences and it asks *what is going on?* question and reacts to situations according to the *knowing how* knowledge described in **Chapter 2** (Short, 2002:23-24).

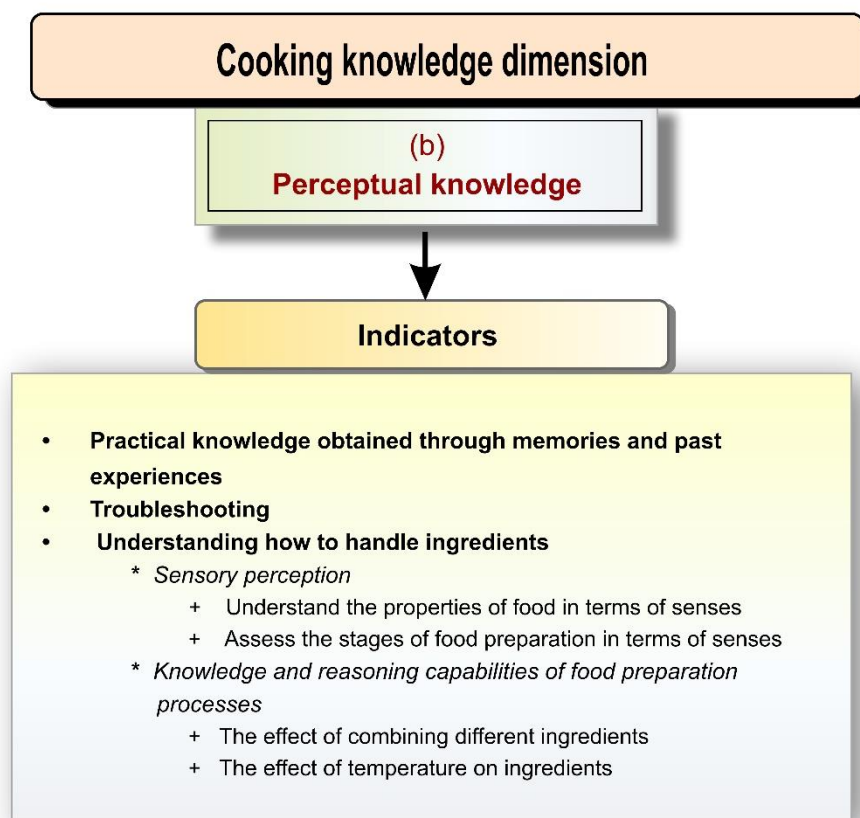


FIGURE 5.3: PERCEPTUAL KNOWLEDGE DIMENSION INDICATORS

Participants' perceptual knowledge was explored, and the findings and discussion follow below.

5.2.1.2.1 *The practical knowledge obtained through memories and past experiences*

The findings relating to participants' perceptual knowledge were concurrent with the literature. They connected to participants' ability to recall **memories, past mistakes, and experiences** that resembled a current situation and that guided them in deciding what to do next (Fordyce-Voorham, 2011; Short, 2006:56). Findings are also linked to troubleshooting as cooking knowledge is obtained from practising through trial and error, which gives experience (Fordyce-Voorham, 2011). Furthermore, it included participants' understanding of how to handle ingredients in terms of sensory perception and knowledge and reasoning capabilities of food preparation processes. Additional findings revealed that participants' exposure to various foods formed part of obtaining experiences and understanding how to handle ingredients.

A discussion on participants' that experienced troubleshooting during food preparation, their understanding of how to handle ingredients and the additional findings relating to perceptual knowledge follow.

5.2.1.2.2 *Troubleshooting*

Troubleshooting during food preparation showed participants' perceptual knowledge when they made mistakes during food preparation. Troubleshooting formed part of their past memories and, therefore, their experience to know how to prevent it from occurring again, which is concurrent with the literature of Fordyce-Voorham (2011) and Short (2003). For example, through trial and error, a participant gained perceptual knowledge by using a food processor to prepare a potato mash; this resulted in the potato mash having a dough-like texture from overmanipulating the potatoes [FD: YC5 no.5]. **YC5: It wasn't tasty mash, it was kind of like a dough, really, and not fluffy like mash, so I won't make it like that again!** The example indicated lacking the knowledge of the effect of combining different ingredients and also the knowledge of the properties of particular ingredients. However, through trial and error, the participant gained experience and obtained perceptual knowledge from making blunders. Furthermore, it increased the participant's knowledge of utilising kitchen equipment and appliances according to the food preparation activity. It is, therefore, interrelated with the mechanical skill to select the appropriate kitchen equipment per the food preparation activity.

5.2.1.2.3 *Understanding how to handle ingredients*

The results of participants' **understanding of how to handle ingredients** relate to their *sensory perceptions* and their knowledge and reasoning capabilities of food preparation processes.

a) Sensory perception

It was revealed that one, or a combination of the participant's senses, was used during meal preparation. Those were: taste, sight (i.e., colour and appearance), smell (i.e., flavour), sound and tactile aspects (i.e., touch and texture) to understand the properties of food and to assess the stages of food preparation.

- Understand the properties of food in terms of senses

The participant's ability to understand the properties of food in terms of senses was exposed when a participant added too much tomato paste to a pasta dish. The pasta dish tasted too sour and to rectify it, the participant added a bit of sugar to the pasta to balance it [FD: YF3 no.3]. **YF3: Now it was a little bit sour, and then I added just a little bit of sugar.** Sensory knowledge was also exposed when a participant recreated a family marinade through taste and visual appearance to ensure the mixture was balanced without measuring the quantities [FD: YF6 no.4]. **YC6: It's about the taste, and we know how it should taste ... It's again a case of I cannot actually tell you, for example, say exactly how much oil, exactly how much wine ... I can probably measure it at some point, but I actually never really bothered to measure it, because I know what it looks like, I know what it should taste.** The findings indicated that participants were able to use taught knowledge and experience in the ability to balance a sour dish with sugar. Also, participants such as the one who replicated his family marinade not only used their sensory perceptions in understanding the properties of the food but was able to recall through memory and experience how the marinade should look and taste.

- Assess the stages of food preparation in terms of senses

In assessing the stages of food preparation in terms of senses, participants showed not only perceptual knowledge relating to their senses in when to move to the next stage of the food preparation process, but also prior knowledge. It was found that participants used their senses of taste, sight (colour and appearance), sound and tactual senses (touch and texture) to anticipate the next step to be followed in the food preparation process. For example, a participant would use colour and tactual senses when preparing a game mince and rice dish before tasting it [FD: YF2 no.1]. **YF2: If it is mince, it should be brown and not bloody anymore ... I usually won't taste it to taste that it is cooked, but when I start adding spices and stuff, I would taste. But I usually fry until it looks rather brown, and I break up the lumps, and when it is finer, and everything is brown, I taste when I add the spices ... usually I taste it [rice], it should be soft and fluffy. It is usually not soft and fluffy, but his [husband] and my mom's are usually soft and fluffy, so that must probably how I know how it should taste.** The colour and texture of the game mince had to be correct before adding spices and only then the participant started tasting the food. Furthermore, the

participant knew how the texture of the rice should be because of prior exposure. In preparing the mince mixture and rice, knowledge is exposed in not tasting the meat when it is raw and knowing that rice should be soft and fluffy, which might indicate knowledge of prior experience or even taught academic knowledge.

Furthermore, through tactual senses, a participant could determine the right time to add milk to the roux when making a white sauce, waiting until the butter and flour were just at the right consistency before adding the milk [FD: YC4 no.2]. **YC4: I let it melt, then I add my tablespoon of flour bit by bit and stir, little by little until I see my sauce thickening, and then I start adding the milk.** The knowledge of the exact stage to add the milk to the roux indicated past experiences, memory or even trial and error knowledge. Furthermore, this knowledge determined the type of mechanical skills participants would execute.

b) Knowledge and reasoning capabilities of food preparation processes

The following findings showed how participants determined the effect on ingredients when combining them and when the heat was applied. Additional findings revealed that participants were able to determine the effect timing and temperature would have on ingredients and participants' perceptual knowledge through exposure to various ingredients.

- The effect of combining different ingredients

A participant showed perceptual knowledge of the effect of combining different ingredients by adding [†]Maizena to a mince mixture for preparing a sweet potato cottage pie, with the reasoning that it will thicken the mixture [FD: CC8 no.3]. Furthermore, it also indicated sensory knowledge in that the participant was aware that if the mixture leaves a floury aftertaste, the Maizena was not cooked through. **CC8: Since last year's healthy eating, I cannot eat watery mince anymore ... it just makes that wateriness go away ... but it must cook through so that everything has a flavour and specifically to get the Maizena cooked because I don't like a floury, that floury feeling? Because I will taste, and if I can taste that floury taste, it is not cooked yet.** It showed that the participant had the perceptual knowledge of the effect of combining different ingredients regarding the food preparation process's knowledge and reasoning capabilities. In this case, that Maizena will thicken mixtures. Furthermore, it showed the knowledge also included the participants' sensory perceptions, in that the mixture needs to cook for a while to ensure the Maizena is cooked through. This was determined by tasting the mixture; if it was still floury, the Maizena was not cooked yet.

- The effect of temperature on ingredients

Participants' sensory knowledge of the effect of temperature on ingredients when the ingredients were subjected to heat or temperature was demonstrated by a participant's

knowledge of what qualities to look out for in determining the optimum temperature for deep-frying oil without using a thermometer for cooking [†]vetkoek. This awareness demonstrated her perceptual knowledge of the effect heat or temperature would have on the dough [FD: YC5 no.1]. ***YC5: It makes those little snakes, and it starts to crackle. I added a piece of dough when I started to suspect it might be warm ... because it puffs up and becomes lighter, I looked, and when it began to brown on top, I started adding the rest.*** The participant used her perceptual knowledge, specifically her sense of sight and sound, in that if *snakes* appear in the oil and the mix starts to crackle, it is near the correct cooking temperature. In addition, she would test the heat by adding a piece of dough to the oil and in using her tactual and visual senses to know when the oil was at its optimal temperature for deep-frying. The signs were puffing up of the dough, becoming lighter in weight and colour changes appearing.

Further findings revealed that participants could determine the effect timing and temperature would have on ingredients.

- The effect of timing and temperature on ingredients

Through participants' sensory knowledge, they demonstrated perceptual knowledge of the effect of timing and temperature on ingredients. For example, a participating couple steamed their vegetables in a stackable steamer for a specific time to ensure that the vegetables did not overcook [FD: YF3 no.2, 4, 6]. ***YC5: It's a three-layer, so then it has water at the very bottom, and then you can now set it for 10 or 20 or 30 or up to an hour. So often, when we steam the vegetables, we place them on the second shelf instead of on the bottom shelf so that it's not mushy and soggy.*** Furthermore, they were able to determine the timing of steaming these vegetables by identifying the contrasting textures and adjusting the cooking time accordingly. Moreover, they cut the vegetables that took longer to cook into smaller sizes to ensure even cooking of all the different vegetables. ***YF3: We've tried it for about half an hour, then it's too mushy for us, and then it absorbed too much water, and we like it when it's still a bit crunchy, so we've figured it out by now for about 15 to 20 minutes is nice for us, depending on the vegetables. If it's carrots, and its bigger pieces, then we'll keep it in longer, but if it's like patty-pans and baby marrows, then it's 15 to 20 minutes, that's how we like it then ... I'll sometimes cut the carrots smaller, or we will keep it in for a bit longer.*** Therefore, the participants had the perceptual knowledge that different vegetables had different textures and would be cooked at different heat levels and times. Participants would steam harder vegetables for extended periods or cut them smaller to cook simultaneously with vegetables with a softer texture requiring less cooking time. It indicated that the effect of time and temperature on ingredients included participants' sensory and perceptual knowledge obtained through experience and trial and error.

Additional discoveries revealed participants' perceptual knowledge through exposure to various ingredients.

5.2.1.2.4 Exposure to various foods and ingredients

The findings showed that exposure to various foods increased participants' perceptual knowledge related to their experiences. Through exposure to several types of foods, participants obtained experience with different food combinations and dishes they would typically not have tried. A participating couple was exposed to other foods from a university friend's mother. When dining at the friend's house, the couple was exposed to foods like [†]foie gras, [†]quinoa, seafood soup, [†]Caprese salad and oxtail [†]ragoût.

CC8-male: It was where I ate foie gras and quinoa for the first time, and a tasty side dish she always makes that I really like is mozzarella with tomato and basil. Then she has those pasta noodles? A Tomato and oxtail dish that she makes with it, and it's also delicious! CC8-female: We ate a seafood soup that I will never make myself, but it was like a broth type of soup. It was very cool! ... I don't even eat fish, and that soup was so tasty! Through exposure to different cuisines, participants also tried to prepare new dishes like a quinoa salad. **CC8: Yes, the quinoa with all those stuffies she mixed in and the veggies.**

Exposure to various foods forms part of obtaining experiences, including participants' understanding of handling ingredients. It relates to their sensory perception of identifying the properties and assessing the stages of foods and food preparation. In addition, it involves participants' knowledge and reasoning capabilities of food preparation processes, which relates to troubleshooting during food preparation, how participants learn from these mistakes that form part of their past memories, and how to rectify them. Furthermore, it involves combining different ingredients, subjecting ingredients to heat, time and temperature and how it would affect the ingredients. Furthermore, exposure to foods is reported on in the conceptual knowledge dimension. Participants' exposure to cooking shows, social media platforms and foods in restaurants inspired them to prepare similar recipes which they otherwise would not have tried. Therefore, exposure to different foods increased participants' academic knowledge and willingness to prepare dishes they usually would not have prepared. An interrelatedness is seen between the different knowledge dimensions and their indicators, resulting in participants executing the knowledge through mechanical skills. This declaration substantiates the literature that one first needs the knowledge to execute the skill (see 2.1.1.1).

It substantiates the literature of Wagner, Geleijnse *et al.* (2011) and Wagner, Ploetz *et al.* (2011). These authors maintain that for a participant to have good perceptual knowledge, they

must have reasoning capabilities of basic food preparation processes and the ability to foresee the effect of applying heat or combining different ingredients. This knowledge is achieved by practising food preparation techniques and methods are usually obtained through trial and error. For example, testing the oil to ensure it is at the optimal temperature for deep-frying the *vetkoek* dough, or steaming vegetables too long or not long enough. Through these processes of trial and error, participants gained experience in deep-frying and steaming of ingredients. It also leads to participants' ability to better envision their food's outcome, which relates to their conceptual knowledge. Therefore, the interrelatedness of the dimensions is realised again, with the intertwining of the different cooking knowledge dimensions. This leads to participants' ability to execute the related cooking skills dimensions, such as mechanical skills. The findings of participants' conceptual knowledge dimension follow.

5.2.1.3 Conceptual knowledge [Sub-objective 1.1(c)]

Conceptual knowledge was the last cooking knowledge dimension explored according to the cooking competence dimension of the participants, also known as sophisticated perceptual knowledge. Its complexity lies in the participant's ability to use his/her perceptual knowledge to conceptualise the outcome of the food preparation process. It also includes the participants' ability to monitor, observe and adapt the food preparation process by evaluating and selecting available or accessible resources. It involves the participants' creative and experimenting abilities through their improvisation, adaptation, or substitution knowledge, as well as their cognitive abilities to reproduce a recipe as described in **Chapter 2** (see **2.2.1.3**).

The findings and discussion are presented according to the conceptual knowledge indicators illustrated in **Figure 5.4**.

5.2.1.3.1 Ability to conceptualise the outcome of a dish

The literature stated that to conceptualise a dish, participants should use their sensory-perceptual knowledge to determine the outcome of the dish (Short, 2002:97; 2003; 2006:58). Although this was true, the findings indicated various contributing factors to participants' ability to **conceptualise the outcome of a dish**.

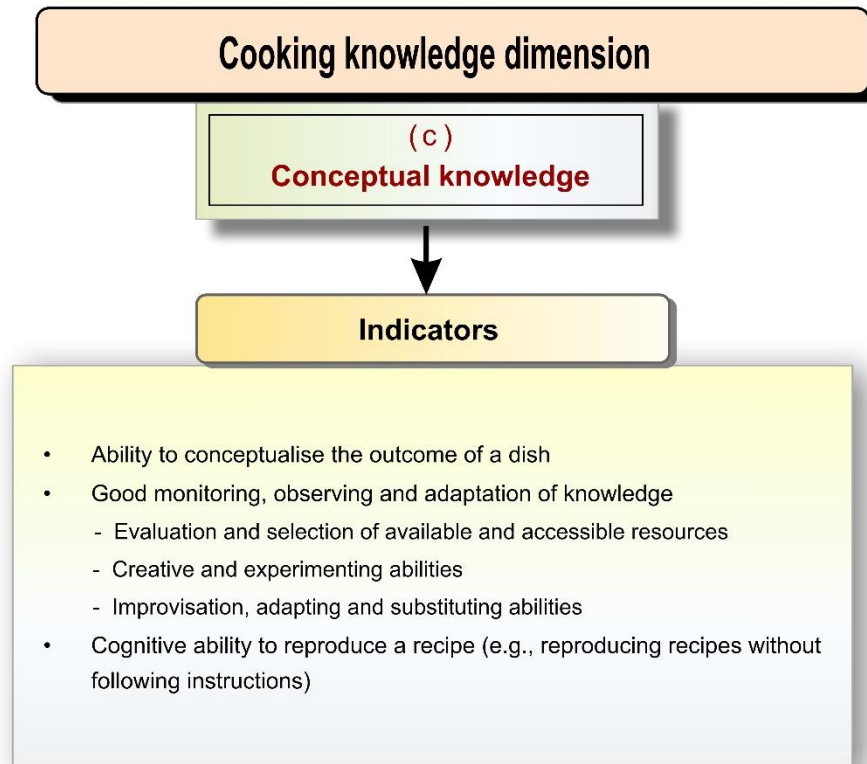


FIGURE 5.4: CONCEPTUAL KNOWLEDGE DIMENSION INDICATORS

From the findings, it is seen that the participants prepared uncomplicated dishes where no major transition in the appearance of the ingredients were seen from the raw to cooked state. Some participants would prepare the same regular dishes repeatedly. Consequently, the end result will always be the same, as they never tried new recipes. Therefore, the outcome of the dishes they prepared was frequently as they had visualised it. For example, a participating couple had a specific repertoire of dishes they prepared; therefore, their food would turn out as they envisioned it [FD: YF2 no.3, 4]. ***YF2: Usually, chops and chips look like chops and chips, and fish and vegetables look like fish and vegetables.***

Other contributing factors could be that participants utilised large amounts of UPF foods during food preparation, as seen in the FDs (see **Addenda C and I**). For instance, YF1 prepared dinners consisting of a Knorr's™ Macaroni and Cheese meal kit, frozen ready-prepared pizza bases and hamburgers consisting of pre-prepared beef patties, bread rolls and pre-sliced processed cheese [FD: YF1 no.1, 2, 4]. Dinners were prepared by YF2 from cook-from-frozen McCain™ oven-bake potato chips, Surfmaid™ tinned peas, a creamed spinach and feta ready-to-heat frozen meal, cook-from-frozen I&J™ crumbed hake fish fillets, cook-from-frozen oven-roast vegetables and Steers™ King and Prince hamburger takeaways [FD: YF2 no.3, 4, 5]. In addition, YF3 prepared Woolworths™ Minestrone soup mix with French loaf bread, cook-from-

frozen hake fillets, Woolworths™ ready-to-cook crumbed chicken schnitzels with Woolworths™ seasonal vegetables and microwave Woolworths™ baby potatoes with fresh garlic and herb butter and readymade frozen pancakes with tinned tuna [FD: YF3 no.1, 2, 4, 5]. Meals were prepared by YC4 using cook-from-frozen oven-bake potato chips and crumbed fish fillets, pre-prepared buffalo wings, cook-from-frozen oven-bake chicken schnitzel with cook-from-frozen mixed vegetables [FD: YC4 no.3, 4, 5]. Furthermore, CC9 prepared a dinner consisting of Woolworths™ butter chicken spice blend and heat-and-eat ciabatta bread [FD: CC9 no.5].

Participants also prepared dishes that were easy to prepare that would not affect the outcome of a dish, for instance, beef or chicken stir-fry with rice and [†]*braai vleis* [FD: YF1 no.5; FD: YF2 no.6, 2; FD: YC5 no.2; FD: YC7 no.4]. Therefore, it was difficult to determine their conceptualisation knowledge as there was no challenge in the dishes they prepared.

Participants' general ability to conceptualise the outcome of a dish was explored by using the stimulus recipe of a *phyllo and feta fig tart with nuts, cinnamon and honey* (see **Addendum D**). Participants were requested to read through the stimulus recipe and explain how they envisioned the end product. After their explanation, a photograph of the stimulus recipe was revealed, and participants were asked if it was similar to what they imagined. Various interpretations of the stimulus recipe were described. Some participants envisioned the recipe as a tart or a sweet pastry, while others as a quiche. **YF3: I see it presented as round, almost like a tartlet that you can cut into slices. ... YC4: I think it's a pastry, like a sweet pastry. ... YF1: I would say it's a quiche.**

However, some participants described how they envisioned the stimulus recipe by comparing it to a lasagne, souffle or chicken pie. **YC7: I think it almost looks like lasagne. ... CC9: I see those little soufflé bowls that look like a chicken pie.**

After presenting the photograph of the stimulus recipe, those who had envisioned the recipe as a tart, sweet pastry or type of quiche said it was close to how they had intended it to be. For example, one participant visualised only slight differences, like how the figs were presented or the size of the tart. **YF3: That's the idea I had in my head, yes. Maybe not the figs, more like a little together inside, pressed in, than outside.**

In contrast, the participant describing the recipe as a soufflé or chicken pie could not see the photograph's resemblance to how she had envisioned it. **CC9: Okay, no, this is a tart effect, but I cannot really picture it. I do not know a quiche dish ... I saw everything in one like**

a tart, pie. The participant was asked if she knew phyllo pastry and she indicated that she did not, which made it difficult for her to conceptualise the dish.

Most participating couples who imagined the recipe as a quiche or a tart said it was not far from how they had conceptualised it. It confirms that participants must have knowledge of the food products to be able to visualise them. Furthermore, most participants struggled to envision a recipe without a name, a description of the recipe and an illustration of how it should look. These findings supported other study findings on the importance participants placed on illustrations or photographs. This finding is further explained in more detail in participants' cognitive ability to reproduce a recipe. The following indicator discusses the participants' monitoring, observation, and adaptation knowledge.

5.2.1.3.2 *Good monitoring, observation, and adaptation knowledge*

The ability to **monitor** or **observe** a situation and then **adapt accordingly** was part of the participants' conceptual knowledge. The findings were in accordance with the related literature by Wagner, Geleijnse *et al.* (2011) and Wagner, Ploetz *et al.* (2011). However, the finding was also interrelated with other literature, such as the availability and accessibility of resources and participants' creativity and improvisation abilities as a solution to the problem (Fordyce-Voorham, 2011; Short, 2003).

This indicator included how participants would *evaluate resources available or accessible* and then make selections based on these evaluations. From the selected resources available and accessible, participants would use their creative and experimenting abilities, making improvisations, adaptations, and substitutions accordingly. Therefore, participants' conceptual knowledge enabled them to modify the meal they visualised preparing by adapting, changing, or substituting the meal, its ingredients or food preparation techniques and methods. The findings are explored and discussed as follows.

a) Evaluation and selection of available and accessible resources

The findings revealed that the type of dishes participants would select to prepare would be evaluated based on the time available, the difficulty level of the meal, the cooks' food preparation ability, the occasion, preferences, dietary requirements and the budget available. Furthermore, participants would select ingredients within the budget they had access to when shopping or available at home.

- Time available

The findings indicated a difference in the available time for food preparation between the young families and the young couples and cohabitators. The young family participants had 30 to 45

minutes available for food preparation in the evenings. As these participants were responsible for feeding, bathing, and getting their toddlers to bed on time after work, easy and quick food preparation was essential to them. Subsequently, the findings indicate that they utilised UPF products and passive food preparation more than active food preparation to achieve this.

A young family indicated that they do not spend much time preparing food, as they do not make very complicated dishes. **YF1: Not very long because I do not make very long food preparation dishes.** The young family participants would use macaroni and cheese premixes, where they add the mixture to boiling water, add extra ingredients such as ham and condiments for extra flavour, pour it into an oven dish, grate cheese over it and broil in the oven. Furthermore, a combination of ready-prepared ingredients was used to make hamburgers. The patties were fried, the bread rolls were cut open and tomatoes and onions were sliced. Then participants only assembled the ingredients by placing the patties on the buns and adding a slice of ready-sliced cheese, tomato, onion, and condiments [FD: YF1 no.1, 4].

Participants would also use passive cooking methods (see 5.2.2.1) and UPFs to save time. For instance, participants would take a lamb chop from the freezer with ready-to-cook from frozen oven-baked chips and place it in an air fryer with a set timer to cook. Ready-to-heat, pre-prepared creamed spinach and feta packet would be heated in the microwave oven and served together with tinned peas. Ready-to-cook from frozen crumbed hake fillets and roasted vegetables would be prepared in an air fryer. Potatoes were steamed in the microwave and served with condiments and when participants worked late or worked over weekends, they would purchase takeaways that deliver [FD: YF2 no.3, 4, 5]. **YF2-wife: When he gets home late from work ... YF2-husband: When we are fed-up and the week was really long; YF2-wife: And it is usually the weekends that we work ... YF2-husband: Yes, [usually Steers], they deliver.** Another reason for the couple to purchase takeaways was because dining out was not an option with their toddler. They said that before children they dined out instead of takeaways. **YF2-wife: We haven't actually dined out in a long time; YF2-husband: It's very uncomfortable, no you are looking for trouble! ... YF2-wife: then [before having their child] we did it at least once or twice a month instead of takeaways; YF2-husband: Yes, dined out.** This example also confirms the change in lifestyle when the family life stage changes.

In addition, a participating couple would add pre-packed minestrone vegetable mixed soup, together with beef goulash and spices, to a slow cooker before work and then after work, the food is ready and served with sliced bread rolls. The couple would prepare a ready-to-cook chicken schnitzel in the oven, add a packet of premixed vegetables in a steamer and warm ready-to-heat baby potatoes in the microwave oven. Furthermore, the couple would fill ready-

made frozen pancakes with a tinned tuna mixture broiled in the oven and served it with a side salad [FD: YF3 no.1, 4, 5].

On the other hand, young and cohabitating couples said they spent an average of under one hour on food preparation, but during the discussion of each meal, it is more likely that these participants spent around an hour to an hour and a half on food preparation. For instance, when preparing a shepherd's pie, the participant indicated the process of preparing mashed potatoes, which took an hour [FD: YC5 no.5]. **YC5: Mash isn't nice to prepare anyway; it takes like an hour.** The young and cohabitating couples also made more use of active food preparation than the young families. However, all participants incorporated active and passive food preparation techniques and methods (see 5.2.2.1).

- The difficulty level of the meal

The time available, the type of ingredients, food preparation techniques and methods participants used all related to the difficulty level of the meals. Participants with more time available, such as the young and cohabitating couples, prepared more complicated meals. For instance, one participating couple prepared *vetkoek* with mince and although the dough was purchased, the participants deep-fried it. They also prepared hamburgers by making homemade hamburger patties and shepherd's pie [FD: YC5 no.1, 4, 5]. Another participating couple prepared homemade chicken schnitzels, cut up fresh vegetables and prepared freshly made pasta for chicken *Alfredo* [FD: YC6 no.3, 4, 5]. In addition, a third participating couple prepared a Korean stuffed squid recipe and cheesy homemade meatballs [FD: YC7 no.2, 5]. These recipes involved various active and passive food preparation techniques and methods, as seen in the mechanical dimension.

- The cook's food preparation ability

The participants' available time and the difficulty level of a recipe did not necessarily determine the cook's food preparation ability. For instance, one of the young families indicated that they loved to cook and, before having children, would have date nights where they would prepare all kinds of dishes. **YF3: We liked it a lot [cooking]; before he was born, we always had a date night, and then we tried out a new dish.** From the young family's FD, it is noted that not all the dishes were prepared by making use of UPFs and two of the meals prepared were more complex, where they made shrimp and bacon pasta and a chicken fillet with cream cheese wrapped in bacon dish [FD: YF3 no.3, 6]. However, a participant also indicated that she lacks food preparation skills. **YF1: I make boring food, I know it is not something which I am really good at.**

In addition, a cohabitating participant indicated that she had only been making food for a year, had not yet played around with preparing food, and was only making the dishes her mother made. **CC9: I've only been cooking for a year, you could say, so I haven't played around with things yet. I'll do more, but I'm just used to what my mother made.** The participant also indicated that her mother used Bisto™ as a sauce and two of the participant's recipes included Bisto™ [FD: CC:9 no.1, 3]. **CC9: My mom always used it as a sauce, Bisto, like when she wanted to make food saucy, she always used it.**

Hence, it shows a direct correlation between time available, the type of ingredients used, food preparation techniques and methods used. Consequently, time limitations require quick and easy food preparations and participants' lifestyles directly influence the increased consumption of UPFs.

- The occasion

The occasion also influenced the types of dishes participants prepared. Moreover, FD entry dishes differed from other FD entries for participants with guests. For example, a participant prepared Portuguese chicken with roasted potatoes and vegetables and an apple tart with fresh cream when the participants' Portuguese in-laws came to visit on a Sunday afternoon [FD: YC6 no.4]. **YC6: My mother-in-law, they came to eat with us ... it was Sunday, yes.** Another couple also indicated a difference between their week and weekend dishes, as they generally had more time. **CC9: I like to make chicken like you've seen with the chicken stuffies, to make that during the week. Over weekends, I will make more like a chicken pie or lasagne for us, which takes longer because it takes ages to make a white sauce and all those steps. So Sundays, I'll instead do something like that, and then the chicken in the pressure cooker and stuff like that in the week.** Therefore, there seems to be a distinct difference in participants' week and weekend food consumption, although this aspect was not explored further for this study.

- Preferences

Participants prepared preferred dishes in their FD entries, which they identified as their favourite dishes. For example, a participating couple prepared penne pasta with bacon and pre-prepared chicken and buffalo wings [FD: YC4 no.2, 4]. Furthermore, the couple would omit ingredients in recipes that they did not like. For instance, a *MasterChef* pasta recipe inspired the penne pasta with bacon recipe, but the couple did not like adding an egg to the recipe and, therefore, omitted it [FD: YC4 no.2]. **The C4-husband: a spaghetti, bacon, white sauce recipe where they say the parmesan must be whisked with an egg and add it like that afterwards ... and we didn't, we don't do the egg because it makes like pieces and does not work well together.** In addition, it was noted that participants would omit the

sultanas from the stimulus recipe because they did not like it. **YC6: I will leave out the sultanas because we don't like sultanas, and the feta sounds a bit weird.**

- Dietary requirements

The findings revealed that participants would prepare food according to the family's dietary requirements. For instance, one participant's recipe was Avocado Ritz with maize [FD: YC6 no.2]. The filling was made with tuna mayonnaise, available in the house. However, the husband does not eat tuna, so she prepared toast with avocado for him. **YC6: Yes, this plate is mine [from photograph]. He ate toast and avocado because he did not eat the rest.**

Furthermore, dishes were based on dietary requirements, mainly in terms of restrictions. For instance, for those who follow a *natural diet*, as described in the academic knowledge dimension (see 5.2.1.1.4), recipes were based on the ingredients that form part of their diet. An example is when sour cream, with no preservatives or additives, was used to prepare creamed spinach and as a dip for zucchini fries. Potatoes were replaced with sweet potatoes for cottage pie and zucchini for chips. Coconut oil, saturated fat, was used instead of vegetable oil, an unsaturated fat and millet was used as a flour replacement as a crumb for the zucchini fries [FD: CC8 no.1, 3, 5]. **CC8: like if we are healthy, you know, we get it right, there's really not much variety to make food with. So, you're just creative about it.**

- Available budget

It was found that participants would select ingredients within their available budget. For instance, a participating couple that followed a *natural diet*, as identified in the academic knowledge dimension, would not purchase the organic meat they prefer because it is not within their budget. Therefore, choosing meat, they would purchase what was available within their budget. **CC8: It is more difficult with meat because it is too expensive to buy organic meat, so we only buy what we can get.**

- Select accessible and available ingredients

Furthermore, participants selected ingredients they had access to when shopping and what was available to them during food preparation. The findings identified that the availability of ingredients would determine a participant's menu. **YC6: we take the available vegetables, and what we get would determine my menu.** This participating couple would also select an alternative product if the one they preferred were unavailable. **YC6: if there is no full cream, we will buy low-fat.**

Furthermore, the couple would not compromise on certain food products and would instead not purchase them if unavailable and then select an alternative. **YC6-husband: So I would**

say as in overall we will place our healthy eating habits before the price, so we would rather make sure because we use something a lot or eat a lot; YC6-wife: ... we will get to a point where we will actually say let's leave it then rather completely, so we do it regularly, let's leave it rather. In addition, the ingredients available in their homes that needed to be consumed would also determine the couple's menu [FD: YC6 no.2]. *YC6: when I opened the drawer, I saw, o shucks, here is maize that is probably already a week and a half old. I probably have to cook it ... then I decided okay! Maize, here you go! ... and I also had avocados.* Furthermore, another participating couple would also add additional ingredients to their food preparation when they had ingredients available in their home that would otherwise spoil if not used [FD: YF2 no.2]. *YF2: It was actually not spoiled yet. I just used it because it was in the fridge, and I just saw if I did not use it, it would go bad.*

Therefore, the evaluation and selection of available and accessible resources would dictate what ingredients the participants would select for the food preparation. These were considered for the food preparation, in addition to their available time, the difficulty level of the dish to prepare, the participants' skillset, the occasion, participants' preferences, their dietary requirements and the available budget, which then led to the participants' creative and experimenting abilities.

Based on these findings, the following section explores participants' creative and experimenting abilities.

b) Creative and experimenting abilities

The resources available and accessibility directly related to participants' *creative and experimenting abilities* and involved participants' *improvisation, adaptation and substituting* knowledge. The findings showed that participants were versatile with their use of ingredients and could alter meals from one basic recipe to various other meals.

c) Improvisation, adapting and substituting abilities

Participants would improvise and adapt ingredients in their dishes by using ingredient substitution. It meant replacing the original recipe ingredients with other ingredients that the participants had available in the house. A participating couple indicated that they would not, for example, purchase mozzarella cheese specifically just for their pizza. Instead, they used the Cheddar cheese that they had since they used it in other dishes too, not just for pizza. This tendency was also perceived in the participants' FDs [FD: YF1 no.1, 2, 4 and 5]. *YF1-wife: That's what we had in the fridge; YF1-husband: We do not easily buy mozzarella cheese, but for pizza, it is probably the tastiest, but we do not buy it, because [Cheddar cheese] we do not use it just for pizza.*

Participants were also forced to improvise their food preparation techniques and methods during unforeseen circumstances. For example, a young couple was obliged to adapt and become creative with their food preparation methods when their gas bottles were stolen, which prevented them from cooking on their gas stove. The participants relied on the gas during food preparation of their first four meals of their FD and had to find alternative methods to prepare their food. Water had to be boiled in the microwave oven, as the participants did not have an electric kettle and most dishes had to be cooked in the oven [FD: YC6 no.1, 3, 4].

YC6: we did not have a gas stove, and we also did not have a conventional kettle. So, then I was like, oh! But I do not know if I might need boiling water for the mince. So, then I poured the water out from under the potatoes in the steamer-thing into a jug, so I can use it in the mince if I have to add water.

Other related findings revealed that participants were aware of the versatility of ingredients and participants used ingredients from basic dishes and used them in various recipes. One participating couple, for instance, combined ingredients such as garlic and mushrooms with either bacon or onion, which were used as a basis in almost all FD entries [FD: YC7 no.1, 2, 3 and 5]. Another participating couple used standard tomato-based mincemeat as a basis for various dishes [FD: YC5 no.1, 4 and 5]. ***YC5-husband: We will make like tacos with mince, just the same as a tomato mince ... we will make it into lasagna, shepherd's pie ... every time we actually make mince; ... YC5-wife: Macaroni and cheese ... will make like those patties and meatballs, yes, I think it's about, our main variety of mince recipes.***

Furthermore, participants could design and improvise ingredients from leftover food. For instance, another participating couple prepared a curry and rice dish and used the leftover rice and carrots the following day to prepare a chicken stir-fry [FD: YF2 no.1, 2].

Based on these findings, participants had intrinsic and extrinsic boundaries within which they had to operate. Their creative and experimenting abilities were interrelated with the other knowledge dimensions, such as the taught and exposure knowledge from the academic and perceptual dimensions, which influenced their cooking skill dimensions.

These boundaries influenced the participants' cooking skills dimensions, such as food preparation techniques, methods and equipment used (mechanical dimension), and participants' menu planning and time management skills (planning skills dimension), forming a significant part of the participants' overall cooking competence abilities. The following indicator relates to participants' cognitive ability to reproduce a recipe.

5.2.1.3.3 Cognitive ability to reproduce a recipe

According to the literature, participants' **cognitive ability to reproduce a recipe** forms part of their creative and designing abilities to *reproduce a recipe without following instructions* for the first time. The findings indicated that two participating couples tried replicating dishes they were exposed to at restaurants. The one participating couple was delighted, as they could replicate the zucchini fries, they ate at a restaurant, which were very similar to the findings from Short (2002:92, 97) and coincided with the literature (Begley & Gallegos, 2010b; Short, 2003; Vanderkooy, 2010).

The participants had zucchini fries at a restaurant and could replicate them at home by following the guidelines of a similar recipe found on the internet [FD: CC8 no.5]. **CC8-male: It came out so well! It was an experiment, but it came out so well! ... One of my friend's birthdays was at Wolfpack in Parkview, and they had deep-fried zucchini chips; CC8-female: His wife said that she had already tried to make it but can't get it right, then I was like, we have to try it! [both laugh] ... so I Googled it ... the millet was my own idea.**

However, the other participating couple tried new recipes and the outcome was not as they envisioned it. **YC4-wife: I really wanted to make lamb [†]korma, and I had my slow cooker out, and I did exactly what the recipe said ... I tasted my sauce, and it was precisely like lamb korma, and I was so excited because we were going to eat lamb korma now and it smells so lovely! We got home, I made the rice, and I dished up and took a little taste of it. It was okay, almost tasted like korma; YC4-husband: But the sauce was not as creamy as Tranna's [an Indian restaurant's] Lamb korma sauce, it tasted like it, but there was a layer of oil on the sauce ... YC4-wife: I was heavily disappointed!**

Further findings indicated the importance of illustrations for participants reproducing recipes. Participants used social media platforms, specifically *Pinterest* and *Facebook* and the internet, for inspiration on recipe ideas. A participating couple used recipes that visually looked appealing as guidelines and adapted them according to what was available in their house, dietary requirements, and food preparation abilities. **YC6: most of the time, I do not look at the recipe. On Pinterest now, I see the picture, and then I can deduct what they did and then I do it more or less.** Another couple substantiated this inkling using recipes from social media platforms in their FDs [FD: YF3 no.6]. **YF3: I think about three of these dishes we saw on Facebook and, ... or if I am on some kind of Food Lovers thing, also on Facebook, and if I see something tasty that is in there, then we will do something like that, then we will try it, try more or less.**

In addition, another couple indicated that they would not specifically search for a recipe. Still,

if they saw it on a social media platform like *Facebook* and it looked attractive and easy (emphasis on easy), they would make it [FD: YC7 no.1, 5]. **YC7: It's a video watched on Facebook ... If I see something on Facebook, then I'm not searching for it, but if it's there, someone posted it, then I'll look, and if it looks interesting and easy, that is also another, motivation, it's easy ... these [meatballs] are also a Facebook, thing.**

Other sources used were cooking shows like *MasterChef*, which inspired some participants to prepare similar recipes by searching the internet and adapting them according to their abilities [FD: YC4 no.2]. **YC4-wife: And I have to say, now that we watch MasterChef too, we get very inspired by stuff; YC4-husband: if I see something and it looks really tasty and nice to me, then I will go read up on it. I will like Google it, and I'll see if there is a recipe, and then it's way too complicated, and then I will just make it easier.**

One participating couple would use the internet and type in the ingredients available in their house. According to the resulting photographs, they will choose a recipe they like the most based on these images. **CC8: when I look at what's in the fridge, type those words in Google and see what recipes I get ... I first go to images, then I look at what it looks like, and then I continue.**

However, it was also found that some participants do not have the cognitive ability to reproduce a recipe without following recipe instructions, especially when baking. **YF1: If it comes to food, like food like in dinner food, then I will not easily use a recipe ... like muffins and cake, if I have to bake it ... I will make it according to the recipe of the dough and that I will then follow it perfectly so that it is precisely right.**

Furthermore, some participants indicated that they would not deviate from the recipe instructions if they had to prepare a dish for the first time. However, they will start deviating and adjusting the recipe on the second attempt. **YC6-wife: But I also think you [husband] will deviate more just with stuff that you have already made; YC6-husband: Comfortable with, yes; YC6-wife: But if it is a brand-new thing, he will not deviate, where I will deviate, I don't care. ... YC7: this was our second time preparing it. The first time was on the fire, so we tweaked a lot from the last time** [FD: YC7 no.2].

The cognitive ability interrelates with participants' knowledge of recipes (see 5.2.1.1.2 a), which indicates participants' cooking confidence. However, cooking confidence was not part of the aims and objectives explored for this study. Furthermore, where participants obtained their recipes interrelates with participants' knowledge of information sources (see 5.2.1.1.7) as described in the academic knowledge dimension.

The findings of the participants' cooking skills dimension follow.

5.2.2 Cooking skills (Sub-objective 1.2)

The findings and discussion of Sub-objective 1.2, namely, to explore, describe and understand the cooking skills of white young adult couples living in Tshwane, South Africa, according to the cooking competence dimensions of mechanical and planning skills, are presented in **Figure 5.5**.

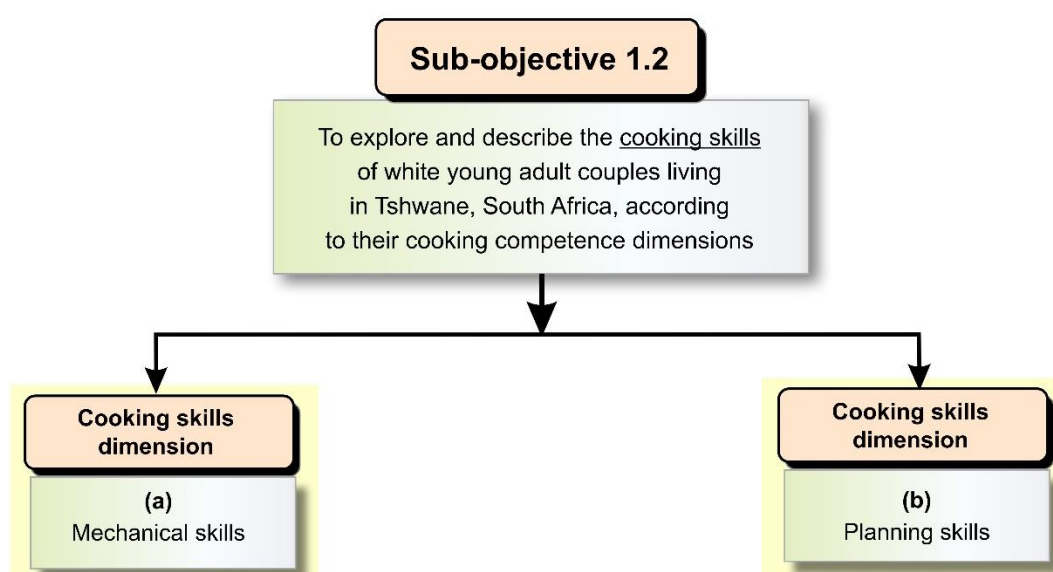


FIGURE 5.5: COOKING SKILLS DIMENSIONS (SUB-OBJECTIVE 1.2)

The first cooking skill dimension of mechanical skills and its related indicators follow.

5.2.2.1 Mechanical skills [Sub-objective 1.2 (a)]

According to the literature (see **Chapter 2**), and as illustrated in **Figure 5.6**, mechanical skills comprised the participants' **skills in basic food preparation**. These, in turn, comprised *food preparation techniques and methods* (including active and passive food preparation activities), *skills to operate kitchen equipment and appliances* and the *skills to use the appropriate kitchen utensils, equipment, or appliances according to the food preparation activity*. However, the findings revealed that the type of kitchen equipment determined the food preparation methods used and the chosen appliances are therefore presented together. The findings on participants' skills for basic food preparation follow next.

5.2.2.1.1 Skills in basic food preparation

The participants had various basic food preparation skills. The food preparation skills were divided into active and passive food preparation skills, as defined in **Chapter 3** (see 3.2.2.1). It was found that both active and passive food preparation skills included food preparation tasks (additional finding), techniques and methods. Food preparation literature textbooks were used to identify the various food preparation tasks, techniques, and methods (active or passive) (Brown, 2019:51, 92-100, 104, 143, 272, 319, 480; Labensky, Hause & Martel, 2015:116-125, 193-194, 205-210, 938; Sokol, 2008:464). The findings on active and passive food preparation follow next.

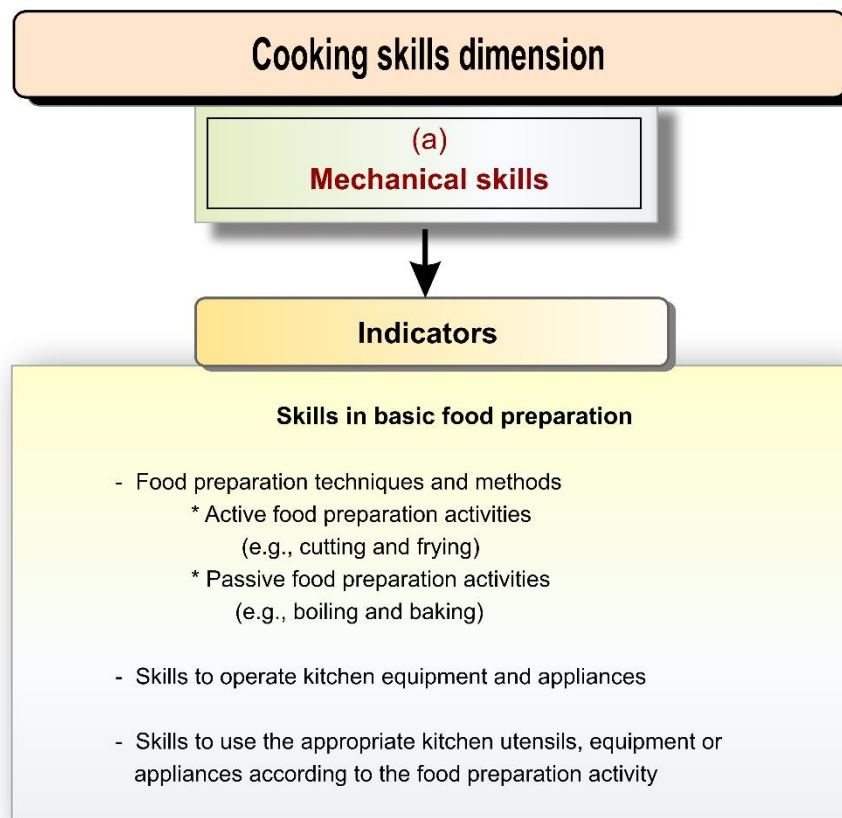


FIGURE 5.6: MECHANICAL SKILLS DIMENSION INDICATORS

a) Food preparation tasks, techniques and methods: Active and passive activities

Active food preparation skills were identified in the literature as actions performed in the kitchen required the participants' physical presence and active involvement in the food preparation process. In contrast, passive food preparation skills were recognised as activities that do not require the participants' physical presence or participation in the food preparation process. Numerous active and passive tasks, techniques and methods were identified.

Some food preparation tasks were identified as activities that did not involve any technique or method. It coincides with the findings of Short (2002:106) that practical skills also include actions that do not comprise specific techniques like washing, scrubbing, or opening a tin. Although some food preparation tasks did not require skills, they involved knowledge.

- Active food preparation tasks

The active food preparation tasks included basic actions and activities participants performed during the food preparation process, such as adding some ingredients to other ingredients. For example, minced meat was added and fried to a light brown; thereafter, salt and pepper were added to taste. These included placing ingredients into or removing them from one place to another, such as removing chicken pieces from a marinade and placing them in an oven dish. Additionally, the increasing or lowering of temperatures, for example, frying ingredients in a pan on the stove on high, pouring ingredients into or out of bowls, such as mixing ingredients with water and pouring it over stir-fry and dishing-up of the final food prepared, were included.

Other active task examples executed by participants involved rolling a mincemeat mixture to form a meatball, spreading tomato paste over a pizza base, sprinkling⁹ or squeezing lemon juice over avocado and grinding salt and pepper over food. Furthermore, Weet-Bix™ were crushed to form crumbs, eggs were cracked, and scissors were used to cut herbs or bacon. Ingredients like chicken or squid tubes were stuffed with fillings and participants shook an oven-roasting bag with a chicken mixture inside to distribute the ingredients with the mixture evenly. A splash of oil would be used to prevent food from sticking to the pan and oil was heated for pan-frying or deep-frying. Before deep-frying, *vetkoek* dough would be pressed flat, baby marrows would be dipped into egg and flour and afterwards, ingredients would be drained. It also included wrapping ingredients with foil before grilling them or covering them with clingfilm before microwaving.

The findings indicated that participants would *rinse* ingredients with water before and after food preparation. For example, raw chicken and various vegetables were rinsed beforehand and cooked pasta was rinsed off afterwards. Lastly, mushrooms would be wiped off with a damp cloth to clean them.

It was revealed by participants completing the *task* of heating oil for deep-frying that it did not relate to skill, although it did require perceptual knowledge to know exactly when the oil was at the optimal temperature for deep-frying, which is further discussed in the perceptual

⁹ The actions of drizzling, crumbling, spreading, topping, and spraying were referred to as sprinkling or squeezing by the participants.

knowledge discussion. Also, wiping mushrooms with a damp cloth is not associated with a particular skill. Still, it did require academic knowledge that mushrooms are prone to water absorption and that too much water negatively influences flavour and texture (Brown, 2019:268). On the other hand, findings indicated that raw chicken was rinsed before food preparation, which showed that participants did not have the academic knowledge that this practice could be hazardous to an individual's health due to cross-contamination (Brown, 2019:168).

The above-related examples substantiate the literature that knowledge is required before the skill or action (task) can be applied (Haverkort, 2019; Payne-Palacio & Theis, 2012:370).

- Passive food preparation tasks

Passive food preparation tasks mainly involved defrosting proteins (e.g., chicken, beef mince and bacon) by taking the ingredients out of the freezer and leaving them in the sink, on the kitchen countertop in direct sunlight, or putting them in the microwave to defrost. Another method of defrosting used was to leave ingredients in a kitchen sink filled with warm water or rinse ingredients with warm water until they defrosted. It was noted that some participants defrosted their proteins overnight in the refrigerator. The defrosting of foods gave the researcher insight into the participants' mechanical skills in that it was a passive task that did not require a skill. However, it also provided insight into the participants' planning skills and academic knowledge. How participants defrosted their ingredients portrayed the amount of time they had available for food preparation and reflected participants' planning skills (see 5.2.2.2.1 a). Active and passive food preparation techniques are identified as follows.

- Active food preparation techniques

The active food preparation techniques indicated that participants applied various cutting styles, mixing and other techniques during the food preparation process.

Cutting styles included slicing, chopping, mincing, dicing and cubing vegetables and herbs, for example, potatoes and spring onions, bacon, feta cheese and bread rolls. Other cutting styles involved shredding lettuce or tearing pieces of *vetkoek* dough into smaller pieces to deep-fry. Vegetables were peeled, apples cored, and avocados pitted. Lastly, a young family participant butterflied a chicken breast by *cutting it open* to fill it with ingredients before cooking it. **YF3: I basically cut it [chicken breast] open, scooped in the cheese with a spoon, and filled it thoroughly with the bacon.** Slicing, chopping, and dicing actions were similar to that identified in the literature (Begley & Gallegos, 2010b; Bursey *et al.*, 2010; Fordyce-Voorham, 2011; Michaud, 2007:16; Short, 2003; Wagner, Geleijnse *et al.*, 2011; Wagner, Ploetz *et al.*, 2011).

Findings indicated that the participants applied various **mixing techniques**, such as the basic mixing of salad ingredients or when making a tuna mayonnaise filling. It further included stirring sauces until they thickened, whipping eggs, and whisking batters. Kneading was also identified as a mixing technique. A young couple kneaded pasta dough on their work surface until it had a smooth consistency [FD: YC6, no.5].

Other food preparation techniques included grating carrots and cheeses, mashing potatoes, rolling out freshly prepared pasta dough, tenderising chicken fillets with a mallet, and basting the chicken. Furthermore, participants were able to prepare breading stations to batter and crumb ingredients for deep-frying or baking. A young couple had the skill to set up a breading station and crumb their chicken for chicken schnitzels in the correct order before oven-baking it. **YC6-husband: I took the chicken pieces and dipped them in the egg and the flour; YC6-wife: [interrupts] First flour, then egg, then the crumbs.** Short (2002:106) described techniques associated with bread making and although participants did not prepare bread, they used similar techniques of kneading and rolling out to prepare fresh pasta dough. Bursey *et al.* (2010) described pureeing as a food preparation technique, but this was not depicted in the findings as a technique the participants utilised. However, participants used numerous other active techniques not explicitly identified in the cooking competence literature.

Participants applied food preparation techniques such as butterfly chicken breasts, preparing fresh pasta, tenderising chicken fillets, basting chicken and preparing breading stations to crumb and batter ingredients for oven-baking and deep-frying, respectively. These food preparation techniques are generally associated with professional chefs' skills, as seen in culinary training textbooks and not with the amateur cook (Labensky *et al.*, 2015:120, 194-195).

- Passive food preparation techniques

Passive food preparation techniques were not identified in the cooking competence literature. However, some participants were marinating ingredients like beef steak or lamb chops and one couple was resting dough (e.g., pasta dough after kneading it). These techniques were reflected in the participants' knowledge, similar to their food preparation tasks. The marinating of meat and the skill to prepare fresh pasta and to rest the dough before rolling it out, are indications of academic and perceptual knowledge.

The last food preparation skills identified were active and passive food preparation methods. However, it was found that the food preparation methods corresponded with the skills participants had to operate kitchen equipment and appliances and how these were appropriate

for the food preparation activity. For this reason, the active and passive food preparation methods have been combined with the last two indicators of mechanical skills and are presented accordingly.

b) Kitchen equipment, appliances, and food preparation methods

The findings clearly showed that the type of food preparation methods participants chose (active or passive) determined the type of kitchen equipment and appliances they would own and use. It, therefore, determined participants' food preparation skills and the skills to operate various kitchen equipment and appliances and select the appropriate appliance according to the food preparation activity.

The appliances, cookware, food preparation method (active and passive), and examples of dishes or ingredients participants applied are presented in **Table 5.2**.

The findings indicate that participants operated various household kitchen equipment and appliances. These included ovens, freestanding convection ovens (i.e., air fryers), freestanding *braai*, stovetops, slow cookers, steamers, pressure cookers and microwave ovens (including a combination of radiation and convection microwave ovens). Each piece of kitchen equipment or appliance was used for the appropriate food preparation technique or method.

Oven-proof containers and crockery (e.g., glass and aluminium), oven racks and baking sheets were used for passive dry-heat food preparation methods, such as baking a pizza pastry recipe, fish, ready-to-heat and cook-from-frozen foods, roasting red meat dishes and chicken, broiling by melting cheese over various dishes, such as macaroni and cheese and toasting hamburger rolls. A roasting pan was used as a passive moist-heat food preparation method by indirectly steaming chicken wings in an oven bag.

A young family participant used an air fryer by placing lamb chops on the top rack and cook-from-frozen oven chips in the bottom bowl to cook, which is also classified as a passive dry-heating (roasting) method. The reason was that she wanted the fat drippings from the lamb chops to fall on the oven chips, but the appliance also had a self-switch-off device preventing her from burning the food. ***YF2: It's basically like an oven, a fan oven. It's just smaller, so it heats up faster and technically saves energy or electricity, but you set the temperature, how quickly the fan turns, and how long it stays on. So, it is very convenient because it won't burn because it switches off when the time runs out ... and an oven doesn't switch itself off.***

TABLE 5.2: KITCHEN EQUIPMENT, APPLIANCES, AND FOOD PREPARATION METHODS

Appliances	Cookware	Method	Examples of dishes or ingredients

Oven	- Oven-proof containers & crockery (glass & aluminium) - Oven racks - Baking sheets	Dry-heat	Baking	Pizza, fish, ready-to-heat & cook-from-frozen foods
			Roasting	Red meat dishes & chicken
			Broiling	Melted cheese over a variety of meals prepared
			Toasting	Hamburger rolls
	- Roasting pan	Moist-heat	Indirect steaming	Chicken wings in an oven bag
Air fryer	- Oven rack (top) - Oven bowl (bottom)	Dry-heat	Roasting	Lamb chops & cook-from-frozen foods
Braai	- <i>Braai</i> grids (heat source: gas, † <i>charcoal</i> , † <i>briquettes</i> or wood)	Dry-heat	Grilling	Variety of red meats, chicken & vegetables
		Moist-heat	Indirect steaming	Sweet potatoes & onions wrapped in foil
Stovetop	- Pots & pans (non-stick, stainless steel or cast iron) - Korean wok (heavy bottom)	Dry-heat	Pan-fry	† <i>Boerewors</i> , beef patties & hake
			Sautéing	Mince, bacon, chicken, shrimp, tinned & fresh vegetables, various herbs & spices
			Stir-fry	Chicken & beef strips, vegetables & cook-from-frozen stir-fried vegetables
			Deep-fry	Battered baby marrows strips & <i>vetkoek</i> dough
		Moist-heat	Boiling	Vegetables, pasta & rice
			Simmering	Mince & sauce for pasta
Slow cooker	N/A	Moist-heat	Simmering	Tomato sauce
			Stewing	Goulash soup
Steamers	- Stacking layers (steaming bowls & racks)	Moist-heat	Direct steaming	Vegetables & rice
Pressure cooker	N/A	Moist-heat	Browning	Chicken
			Pressure steaming	Chicken & potatoes
Microwave ovens	- Microwave oven-proof containers (with or without cling-film to cover container) - <i>Cook-in</i> reusable bag - Plastic microwave steamer	Radiation	Steaming	Vegetables, fruit, rice, ready-to-heat & cook-from-frozen foods
			Boiling	Vegetables & rice
			Defrosting	Red meats, chicken, ready-to-heat foods
			Heating	Wraps
			Reheating	Leftover foods
		Infrared radiation	Baking	Potato bake
	- Ceramic container	Convection	Broiling	Cheese on potato bake

The participants who *braai*ed used active dry-heat food preparation methods by grilling a variety of meat, chicken, and vegetables on *braai* grids on open flames with wood, *charcoal* or *briquettes* as the heat source, but gas was also used. Active moist-heat food preparation

methods of indirect steaming were used by wrapping ingredients like sweet potatoes and onions in foil. This is classified as an active food preparation method, as participants must constantly turn the ingredients and control the temperature to ensure it does not burn. **YF2: I braai it slowly, sit at the fire and turn it over. I never leave, and I am scared it will burn. The ribs usually take long because they're not over a warm fire and need constant turning to ensure they're evenly cooked.**

Participants used non-stick, stainless-steel, cast-iron pots and a Korean heavy bottom wok to execute active food preparation methods on the stovetop through dry-heat methods by pan-frying *boerewors*, beef patties and hake. They also sautéed mince, bacon, chicken, shrimp, tinned and fresh vegetables, herbs and spices. Participants stir-fried chicken and beef strips, vegetables, and cook-from-frozen stir-fried vegetables. Furthermore, battered baby marrow strips and *vetkoek* dough were deep-fried. Passive moist-heat food preparation methods on stovetops involved boiling vegetables, pasta, rice, simmering mince and a tomato sauce.

Participants used slow and pressure cookers as passive moist-heat food preparation methods. A tomato sauce made from scratch was simmered in a slow cooker. A young family would use a stewing method by adding ingredients for a goulash soup to their slow cooker before work in the mornings and then by the time they came home from work, the food was cooked and ready to eat, which saved time and made it easier for them. **YF3-wife: We place everything in [the slow cooker] early in the morning, and the meat and everything are then nice and soft by the time we eat it ... then after work, we can eat; YF3-husband: Time wise, it makes it easier for us.** One participating couple used a pressure cooker to cook chicken and potatoes through pressure steaming.

Participants were fond of using stackable steamer appliances with individual steaming bowls and racks, as it was seen as a healthy and easy passive moist-heat food preparation method by directly steaming vegetables and rice.

Microwaving was a separate category, incorporating dry, moist and combination-heat passive food preparation methods. Participants used the appliance with oven-proof microwave containers (with or without covering it with clingfilm), using *cook-in* reusable bags or plastic microwave steamers. Microwave cooking is a passive food preparation method that uses radiation and infrared radiation but can also use convection (when using a combination oven¹⁰) to cook food. Through radiation, participants steamed and boiled ingredients like vegetables, fruit, rice, ready-to-heat and cook-from-frozen foods. In addition, the microwave was used to

¹⁰ Combination of a conventional electric oven with a microwave oven in the same section (Bennion & Scheule 2015:98).

defrost and heat meat, chicken, ready-to-heat foods and wraps, and for reheating leftover foods.

A young family participant used the microwave oven's infrared radiation, by baking a potato bake in an oven-proof ceramic container and then using the convection setting to broil cheese on top of the potato bake. **YF2: I baked it [potato bake] at 180 for 45 minutes in the microwave's convection thing because it also has a convection thing. I did that earlier ... so, when the food was ready, I switched it back on again [the microwave] on the grill setting and just grilled it [the cheese on top] for five minutes.**

Other smaller kitchen equipment, appliances and household utensils were used. The findings showed that participants had the skills and ability to work with smaller kitchen equipment, appliances, and household utensils. For instance, participants used immersion blenders to blend soup, pasta machines to roll out and cut fresh pasta and a young couple used a food processor to mash potatoes [FD: YC5 no.5]. **YC5: I took all my half-boiled potatoes, and then I took milk and butter, and then I placed it in the blender.**

In addition, small kitchen equipment participants could use during food preparation included vegetable peelers for removing the skin from carrots or potatoes, a potato ricer for mashing potatoes or sweet potatoes, graters for grating carrots or cheese, mallets for pounding chicken flat or crushing Weet-Bix™ to make crumbs, a colander for rinsing mushrooms or draining pasta water, a hand whisk for mixing batters and pastry brushes for marinating meat. In addition, tongs were used to test the doneness of meat, to turn meat or chicken pieces on the *braai* and turn ingredients over or remove ingredients from the *braai* or a marinade. A spatula was used for frying chicken strips, hamburger patties or mince. Various cutting boards (e.g., wood, bamboo, plastic, or glass) were used to cut and prepare ingredients for food preparation.

Participants liked to use kitchen gadgets that created the perception of time-saving appliances. For example, participants used garlic presses to mince garlic. One participant used a garlic peeler, which peeled and minced the garlic. Other gadgets included onion *choppers* that cut onions and garlic fine. Moreover, participants would use kitchen shears to cut bacon into fine cuts, herb scissors for cutting herbs and a participant used a salad spinner to dry salad leaves. Participants also used microwave gadgets, like reusable cook-in bags, for cooking potatoes and sweet potatoes and plastic microwave steamers for steaming rice and potatoes.

Lastly, participants used general household cutlery during the food preparation process. The participants used everyday kitchen utensils during food preparation, categorised by Brown (2019:595-599) and Labensky *et al.* (2015:93, 96) as hand tools.

From the findings, participants used hand tools such as knives (e.g., chef's, pairing, smooth-bladed, serrated or steak), spoons (e.g., stainless steel of all sizes and wooden), and forks, for various purposes during food preparation. Knives were multifunctional, but most participants preferred serrated or steak knives, as they cut easily through, for example, tomato skin. Spoons were used to remove the skin of fresh ginger, stir ingredients, spread condiments like chutney over food, dish up creamed spinach or scoop out the sweet potato from its skin and measure spoonful of various condiments, sauces, herbs, spices, butter, oils, flour, and sugar. Measuring spoons were only used when measuring was needed, for example, a certain amount of water to add to instant sauce pre-mixes or following a recipe like baking an apple tart [FD: YC6 no.4].

Furthermore, the stimulus recipe (see **Addendum D**) indicated that participants would use a hand-whisk, electric beater, or a stand mixer to whisk the ingredients together. In addition, participants had the skill to identify what type of ingredients needed to be whisked, to determine which type of whisk appliance to use. For instance, the thickness of the mixture, the volume needed and if egg whites or yolks needed whisking, were all determining factors. ***YF1: it depends on how thick it should be, because if the recipe says the egg whites or egg yolks or whatever should be thick, then I will say the electric whisk because then it makes it much thicker faster.***

Therefore, participants needed academic knowledge to determine if they could prepare the meal and had the mechanical skill to execute it. These interrelated, as the participants needed to be knowledgeable on food preparation methods, equipment and appliances and have the skill to execute the methods and operate the equipment and appliances to prepare the meal. Finding information on the meal to prepare was based on a participant's exposure to food information through various sources, as explained in the knowledge of information sources indicator (see **5.2.1.1.7**) of the academic knowledge dimension.

The active and passive food preparation activities have been broken down into separate categories to indicate the tasks, techniques and methods participants use during the food preparation process. However, in reality, these active and passive activities are used simultaneously throughout the food preparation process.

These findings on the participants' ability to determine and select the appropriate food preparation task, technique or method could indicate that overall, participants would evaluate the food preparation activity needed, as well as understand and evaluate the impact of the

food preparation method or appliance would have on the food items being prepared. Therefore, these interrelated with the planning skills and perceptual knowledge dimensions.

The second and last cooking skill dimension explored is the planning skills dimension.

5.2.2.2 Planning skills [Sub-objective 1.2 (b)]

The participants' second cooking skill explored was according to the cooking competence dimension of planning skills. Planning skills comprise components that form part of the various facets of meal preparation that occur before and during the food preparation process, as discussed in **Chapter 2** (see **2.2.2.2**). The participants' planning skills were explored and the findings and discussion are presented according to the indicators as set out in **Figure 5.7**.

5.2.2.2.1 Organisational and timing skills

Organisational and timing skills encompass *planning and scheduling skills before food preparation and planning and scheduling skills during food preparation*.

a) Planning and scheduling skills before the food preparation

Participants' menu planning, shopping, and purchasing skills were identified as planning and scheduling skills before food preparation. These corresponded with the availability and accessibility of resources (see **5.2.1.3.2 a**) that would determine these planning skills.

- Menu planning skills

Menu planning was identified as the planning required before meal preparation. When ingredients were purchased according to shopping lists put together according to the family requirements, the shopping would take place accordingly. The findings indicated that participants did not prepare food according to structured menu planning, as found in the literature (Short, 2006:60).

One participating couple would, for instance, plan a shopping list for about three meals of the week ahead of time. They purchased the essential ingredients required on a Sunday and if they required extra ingredients, they would purchase them on the day they wanted to make it, after work. **YF3: A month or two ago, we started to decide on Sundays, okay, we'll make macaroni and cheese or just roughly an idea of about three dishes and then buy our vegetables and fruit for it, and if we need, for example, cream for the dish or something extra for the dish then he will get it quickly for us.**

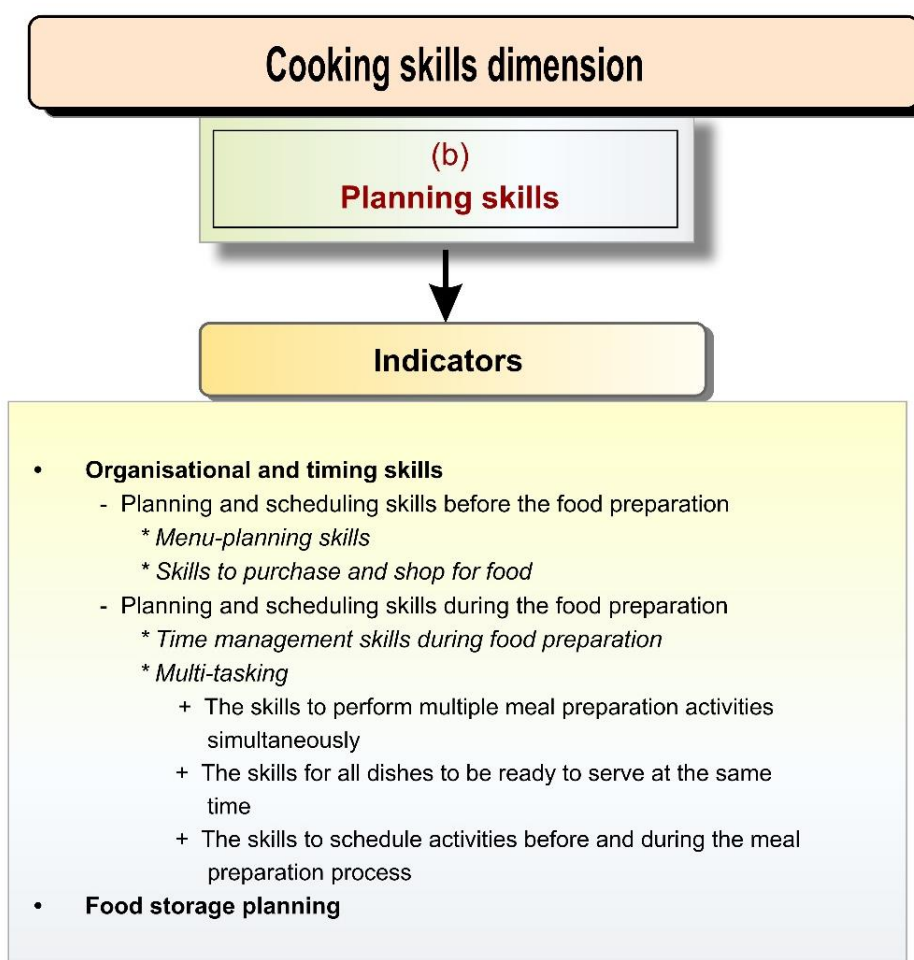


FIGURE 5.7: PLANNING SKILLS DIMENSION INDICATORS

One participating couple would, for instance, plan a shopping list for about three meals of the week ahead of time. They purchased the essential ingredients required on a Sunday, and if they required extra ingredients, they would purchase them on the day they wanted to make it, after work. **YF3: A month or two ago, we started to decide on Sundays, okay, we'll make macaroni and cheese or just roughly an idea of about three dishes and then buy our vegetables and fruit for it, and if we need, for example, cream for the dish or something extra for the dish then he will get it quickly for us.**

Another couple would have a shopping list on their refrigerator of items they needed to purchase. However, they would go through every aisle in the store and purchase unnecessary items, regardless of the planned shopping list. **YF2: it will usually start with a list against the fridge of everything that we need but end up with a walk through all the isles and loading up extra stuff that is not needed.**

It was also found that some participants would purchase their standard shopping list of ingredients and the ingredients obtained would determine the menu for the following two weeks. **YC6: I have my standard list of purchasing, more or less a certain amount of chicken breast, and packets of mince. I have more or less those basic stuff, and then we take the available vegetables, and what we get would determine my menu for two weeks.**

Therefore, it is seen that menu planning is an intricate process and interrelates with the conceptual knowledge dimensions, as cognitive thought processes take place and not purely the execution of planning skills. As seen with shopping skills, it is an interrelated and ongoing process that takes place in conjunction with their menu planning. The menu-planning skills identified integrated with the findings of the participants' shopping and purchasing skills explored.

- Skills to purchase and shop for food

The participants' shopping skills indicated that different types of shopping took place, such as monthly and bi-weekly, destination and *bread-and-milk* shopping, which were interconnected with the participants' purchasing skills.

Shopping skills. Monthly purchasing was done where participants purchased large quantities of groceries for the month and bi-weekly purchasing for fresh ingredients that needed to be stocked up. **YF2: There are two types; the one type usually happens once a month when we do big shopping when he is also off on the weekend. ... When he's around, there's significantly more sweets, chips, and soft drinks involved than when I'm on my own. ... The other type is about once a week or once in two weeks, a quick visit to Pick 'n Pay early in the morning after I've dropped her [daughter] off to get bread and milk, and then I'll usually get fresh stuff there like vegetables or fruit ... until next month's big shop.**

The second was destination shopping, where participants would go to different stores to purchase specific food products. **YC5: We get a newspaper here in our complex, and then I take the Woolies and Checkers specials leaflets out. Then I look at what Woolies have on special, like if Woolies' milk or toilet paper or something like that, then I will buy it there ... Woolies also sometimes have like tuna, five tins for R60 that works out cheaper than Checkers.** The findings also indicated that participants would go to specific stores that provided bulk purchasing. **YC4: The fish and chicken schnitzels we buy from Makro ... because it's in bulk, and then you buy 3 for R90, 2 for R90 or 3 for R120 ... So, you know it's much cheaper for us now to buy it in bulk.** The third type of destination shopping was where participants would drive to specific stores where products could not be obtained

elsewhere. For instance, participants would drive to Pescaria, the Mediterranean fish centre in Johannesburg, specifically for their Portuguese food products. **YC6: Yes, we would drive to Pescaria to buy †Chouriço and †Caldo Verde, and then we will also happen to buy fish, so we don't go specifically for fish. We would rather drive, especially for the Portuguese products.**

The *bread-and-milk* shopping was done where participants required specific items they ran out of, such as bread and milk and usually at stores where they would not typically do their grocery shopping. **YF2: I will maybe run in there [Woolworths™ food store] and buy something if it is the only store I will get to that day because there is no more bread and milk in the house, but I will not go and do big shopping, it always feels to me that they are more expensive.**

Purchasing skills. The participants' shopping skills showed that their purchasing skills were interconnected in selecting shops to purchase food. Participants had the purchasing skills to shop at stores that offered specials and discount coupons for cost savings. Furthermore, participants would buy products they did not plan to and still have stock of, but because they were at a discount, they would purchase them. **YF2: it also depends on specials, you know, if there are coupons at Pick 'n Pay, which will expire. Then I will make more effort to go, and then I will, for example, even if there are four packs of fish here [at home], buy another pack of fish because it's on discount.** Suppose the store offered specials or more affordable alternative products not needed for the meal visualised to prepare. In that case, participants could modify or adapt their purchasing decision or purchase these products not required for the meal envisioned to prepare but would utilise these in another meal in the future. **YC7: if we go shopping and there may be specials, we will buy the special, like coffee sometimes has, even if it is not on the list, but it is on special then we will buy it.** In addition, participants selected shops that offered reward programmes for the attached benefits. **CC9: for the eBucks, they manage it quite well to get you there, to attract you, and all the benefits you get with it.**

However, it was revealed that participants would make purchases at shops that were not cost-saving but convenient. For example, like the *bread-and-milk* shopping, participants would purchase at stores perceived as more expensive but would compensate for the ease of convenience of purchasing the few items needed.

Furthermore, it was clear that participants did not have structured menu planning and shopping skills. Meal planning relates to the conceptual dimensions as it also involves the visualisation of bringing a meal together. Therefore, it is the process of attaining the outcome of the meal

planning procedures and the tasks involved in carrying it out. Therefore, the menu planning and shopping skills that enabled a participant to conceptualise what to prepare for dinner were not inclusive of just one or two of the cooking dimensions but encompassed all of them. Participants also demonstrated other planning skills related to how they defrosted their meat products before food preparation.

Additional findings indicated that planning was also associated with participants' defrosting methods.

- Planning associated with defrosting methods

The planning ability of participants was found to relate to the available time participants had for food preparation. Planning was not done too far in advance and dinner meal planning would seldom occur the evening prior and it was usually done in the morning or throughout the day. Many participating couples would only plan what to eat for dinner on their way home from work or when they entered the house after work. A good indication of these planning skills lies in how the participating couples defrosted their meat and utilised their leftover food (see 5.2.2.2.2).

Defrosting meat was found to occur in three different ways, depending on participants' time availability. Firstly, if participating couples had planned their dinner for the following day, the meat would be taken out of the freezer to defrost overnight in the refrigerator. **YC7: if it is planned, it will be taken out the previous day and sometimes just placed on a plate in the fridge from the freezer. From the freezer on a plate in the fridge.** Secondly, if participants had remembered to defrost the meat in the morning before work or throughout the day, the meat would then be placed on a countertop to defrost. **CC8: Sometimes, if you decide in the morning what you are going to eat it in the evening, we will take it out and leave it on the counter.** Thirdly and most frequently, participants forgot to take out their meat from the freezer to defrost for dinner. In this case, the participants would then either defrost their meat in the microwave or place it in a basin with hot water to defrost faster. **YF3: The lifestyle does not allow it, but I think we know it's not really good to nuke your stuff in the microwave, but I'm not good at meal planning in advance ... our mince gets nuked, and our chops get nuked, and all our other food is nuked ... because I do not have time in the mornings to think about what we eat tonight. ... YC4: If we remember [to take the meat out of freezer]. Otherwise, I come home and just tap a hot water basin and throw the meat in it.** In addition, it was revealed that one participating couple would stop at a store on their way home from work to purchase *fresh* (unfrozen) meat if they forgot to take out their meat to defrost or want to *braai*. **YC7: If it's not planned so long in advance, most of the**

time, it's Monument Spar or Mondanette just for the meat because it's on the way home.
... ***YC7: if we know we are going to braai, then we'd rather go and buy fresh meat.***

Participants also showed perceptual insight from the defrosting method they used. For instance, when a participating couple planned to make a Korean squid dish, they indicated the importance of leaving enough time for the squid to defrost on its own and not using a microwave oven to defrost it since the squid would become tough [FD: YC7 no.2]. ***YC7: Especially squid that is not tough should be taken out [the freezer] well in advance.*** It not only indicates that the participants could plan, but it indicates participants' perceptual knowledge in understanding the properties of the food items to be defrosted.

From the above, it was revealed that how meat was defrosted depended on the available time the participants had for meal preparation and the amount of effort they were willing to put into it. Furthermore, the interrelatedness with the other dimensions is seen in that participants could determine which defrosting method to use with the available time and that they adapted to the time limitation (conceptual knowledge). Participants knew which defrosting method to apply to which food product (academic and perceptual knowledge). They could utilise a microwave oven (mechanical knowledge), should that be the method of choice.

The findings for organisational skills of planning and scheduling skills during food preparation indicator follow.

b) Planning and scheduling skills during the food preparation

The planning and scheduling skills during the food preparation indicator are related to the participants' *time management skills during the food preparation*. Time management forms part of participants' ability to prioritise the time they had or made available for food preparation and their ability to multi-task during the food preparation process (Short, 2003; Wagner, Geleijnse, et al., 2011). Time management skills during food preparation comprised participants' multi-tasking abilities during food preparation. The *multi-tasking skills* were divided into three categories, namely:

- the skills to perform multiple meal preparation activities simultaneously;
- the skills for all dishes to be ready to serve at the same time; and
- the skills to schedule activities before and during the meal preparation process.

The participants' multi-tasking skills were explored and were found to be interrelated. The findings of the three categories that were identified follow.

- Skills to perform multiple meal preparation activities simultaneously

The findings revealed that participants had the skills to simultaneously perform multiple meal preparation activities. For example, a participating couple would defrost chicken strips while gathering other equipment needed for food preparation [FD: YF1 no.2]. **YF1: I will defrost the chicken strips in the microwave, and then in the meantime, I will gather the other stuff together, take the pizza bases out and wrap foil over the thing I am going to place it on.** In addition, another couple would start by placing pasta in the water to cook and then start preparing the white sauce for the pasta [FD: YC4 no.2]. **YC4: I place the pasta in [water], and then I start with the white sauce.**

Furthermore, some participants indicated multi-tasking skills by determining what would take the longest to prepare, starting with that first, followed by the other food preparation tasks that needed to be done. **YC6-wife: I always plan before I start. Okay, what should I do first? What will be done the quickest? So what is going to take the longest? Okay, start with that; YC6-husband: As I said, while I am busy with the chicken, I will steam the vegetables.**

- Skills for all dishes to be ready to serve at the same time

Ensuring prepared food was ready to be served simultaneously depended on executing the previously explored multi-tasking skill. With all the participants, it was found that food components were ready to serve at the same time. What stood out was the young families, who were particular about when the food needed to be completed because they had little toddlers and strived to eat dinner together, which was important to them. **YF1: she eats about at six. I try most of the time that we eat together, and when we eat, she eats ... although it doesn't always work out like that.**

- Skills to schedule activities before and during the meal preparation process

The findings indicated that participants performed skills to schedule activities before and during meal preparation. For instance, young families would be involved with activities for their children. **YF3: It's in between; usually, she or I are busy with him, one makes food, and the other manages him.** In contrast, young and cohabitating couples would spend time with each other, which included dancing, conversing, playing games or watching television together and catching up on work. **YC4-wife: We sometimes play some music for ourselves, and then we 'boogie' and make food ... we will sit on the couch and chat, or he will work, and I will play a game; YC4-husband: Or we will put on a series for us.** In addition, some participants would do household activities like laundry, preparing lunch for the following day or washing the dishes. **CC9: I'll be busy tidying stuff up and things like that. I will hang up the laundry, make his sandwiches for the next day, or be busy washing the dishes. I do not sit**

and wait for the food. These multi-tasking skills often happened concurrently and were interrelated with the conceptual dimension.

The findings of food storage planning skills follow.

5.2.2.2.2 Food storage planning

Food storage planning involves participants' knowledge (academic, perceptual or conceptual) regarding their planning skills when storing ingredients. The findings indicated that participants' food storage planning was determined by how they stored their leftover cooked food in the refrigerator or freezer.

Leftover food would be refrigerated. Participants would dish out leftover meals directly into lunch boxes for work and store them in the refrigerator, as they would be taken to work the following day and therefore there was no need for freezing the food. Some participants would also store the leftover food in the refrigerator if they knew they would consume it the following day. **YC5: For him that goes to work, I place everything already in a Tupperware™ the night before, and if I know I am going to be at home and will eat at home, then I'll place it in a plate with a piece of glad wrap over it.**

Participants froze leftover meals in lunch boxes for work, for convenience when needed and these could just be taken from the freezer in the mornings and reheated at work. Some participants froze leftover food as lunch meals for the domestic worker or prepared meals for days when they did not have time for food preparation and then could reheat a meal from the freezer. **YC5-husband: Yes, we freeze a lot of stuff, especially pasta that I can then easily warm up at work and eat ... already in small Tupperware™ containers; YC5-wife: Also, if I know the domestic worker is coming in a day or two, then I'll freeze it for her.** Furthermore, a young family would portion out food for their child, like mash and mince and freeze it in containers. This helped them with time management, as it ensured there was always food available for their child. **YF3: I do it for my child these days, then like yesterday we ate mash and mince, so then I pack it in containers for him, then I do not always have to buy food for him because I do not always have time.**

Additional findings revealed that that planning skills could be determined through participants' planning of the amount of food they would prepare.

a) Planning of food preparation quantities

The planning skills dimension was related to participants' planning ability during food preparation and how these ingredients and food utilised were stored (Desjardins & Azevedo, 2013; Short, 2003).

Additional findings of this study indicated that planning skills could be seen in that participants planned extra food quantities or planned just enough for one meal.

- Planned extra food quantities

It was found that participants would deliberately plan to prepare more food during food preparation to have lunch for the following day. Reasons include that it was more affordable and saved costs. **CC8-female: We always eat leftovers for lunch; CC8-male: It's much cheaper because if you're still going to buy lunch, even if it's healthy, anything between R20 and R50 it's going to cost you, whereas if you only take last night's leftovers, it is already a meal that you save.** Furthermore, it is time-saving and convenient, as they do not have to waste time preparing extra food for lunch the next day. **YC7: If he's already at home, he might also make something, so we can have school lunch because we do not have other things to make for school lunch ... It's just for time-saving.** Participants would also prepare just enough food for one meal to prevent leftover food.

Participants planned meal portions in not having leftovers, which was perceived as wastage, leading to wasting money. Therefore, preparing just what they needed each evening was more economical. **CC9: just when we moved in January, we made too much food, then we realised we wasted a lot of money ... it is the first time you make food for two people, then we started working out our portions a bit, if I can say so, that we eat just enough, then we do not have leftovers and stuff.** A finding that stood out, was a couple that labelled leftover food as *hello food* as the husband disliked eating leftover food. This meant the wife had to prepare different meals every night and only enough, as the leftovers would not be eaten the next day. **YC6: I might have made more food doing it this way, than cooking other food every night, but he [husband] does not like hello food, so ... hello food is: "Hello I've seen you before", so it's leftover food.**

Lack of planning could also be observed in that some participants did not plan their food quantities of food that they prepared, which led to wastage. **CC9: It does not go to the bin immediately. It first goes in a bowl in the fridge, for the conscience, and then later to the bin.** Lastly, some participants would also utilise their leftover food, which forms part of the conceptual knowledge dimension, by being creative and incorporating leftover meals into other dishes.

In concluding remarks, participants had external boundaries, making food preparation feel like a chore and not an enjoyable activity. For example, a young family wife said:

YF2: The big problem is that it is not a passion. But the other thing is that it might have been more enjoyable if I had more time because now it is like a chore. You have to do it because the people need to eat, but you do not have time to play around to experiment and test everything because the people want to eat!! [knock her knuckles on the table], and at half past eight in the evening then I also want to eat! So firstly I think it is not a great passion and secondly it is all about time.

Although the participant indicated that food preparation was not a passion, through the other dimensions, it seemed that she liked to make recipes from watching cooking shows such as *MasterChef* and had overall good cooking knowledge and skills. However, the external boundaries of time, lack of support from family and budget limitations made it a chore and an unenjoyable task.

These findings show that the cooking skills dimensions are interdependent and related to the cooking knowledge dimensions. Therefore, participants first needed the knowledge, either academic, perceptual, or conceptual, to execute the mechanical or planning skill dimensions.

Furthermore, another female participant said that she and her twin sister had the same cooking competence-related subject at university. Where it changed her whole view and life around food, but it did not change her sister's perspective. She indicated that she thinks the reason for it might be that you have to have a love for it in order to want to make a change. **YC6-wife: The difference between me and my sister [twin sister], which had exactly what I had [university subject] but she chooses the packet stuff and the canned food. So she also studied it for those six months, but turned out totally different. I think it's the love for it [cooking]. She doesn't want to cook. YC6-husband: Yes, that's why I say it definitely influences us, that's why we decide to make the effort to make food.**

5.2.3 Additional findings

Additional findings revealed that participants were high consumers of UPFs, influencing their cooking competence.

5.2.3.1 UPF consumption

To identify the participants' UPF consumption, the participants' FDs were evaluated and grouped according to the NOVA food classification groups, as seen in **Addendum I**. Monteiro,

Levy, Claro, de Castro and Cannon (2010) and Monteiro *et al.* (2018) created a classification for processed foods in the NOVA food classification system. Monteiro *et al.* (2019:2) state that "... almost all foods are processed to some extent, if only by preservation and it is, therefore, unhelpful to criticise foods as being 'processed' ...". Therefore, the NOVA food classification system was developed to classify foods clearly according to the amount of processing a food product goes through.

Unprocessed or natural foods are fresh foods with no alterations and come directly from plants or animals, such as fresh fruits and vegetables, eggs, fish, poultry and meat. **Minimally processed foods** involve processes that subtract from the unprocessed food product but do not add any ingredients. It includes the cleaning, removal of inedible or unwanted parts (e.g., removing the husk from wheat), portioning (e.g., filleted fish), grinding (e.g., wheat into wheat flour), drying (e.g., herbs and spices), fermenting (e.g., yoghurt), pasteurising (e.g., milk), cooling and freezing of food products (e.g., frozen vegetables or meat products). Unprocessed and minimally processed foods are non-UPF groups comprising the NOVA group 1 (Monteiro *et al.*, 2019).

Processed culinary ingredients are classified as the NOVA group 2. There is minimal involvement in food products, where natural ingredients are extracted from the first two categories and created through industrial processes (e.g., pressing, centrifuging, refining, extracting, or mining). For example, it includes using oils, fats, salt and sugar for seasoning in moderation during the food preparation process on group 1 foods, such as using butter to fry vegetables (Monteiro *et al.*, 2019). These first three groups describe the ingredients or products generally associated with home-prepared meals.

Processed foods are classified as the NOVA group 3. It includes industry-manufactured foods using salts, sugars and other ingredients from group 2 and adding them to foods from group 1 to increase their shelf-life and sensory qualities. It involves preservation methods such as canning, bottling and non-alcoholic fermentation for bread and cheeses (Monteiro *et al.*, 2019). **UPFs** are classified as the NOVA group 4 and are industry-manufactured formulations made entirely from extracted food products, primarily for industrial use, resulting from various industrial processes. It involves several processes from different industries, such as sugars, oils, fats, proteins, starches and fibre that are exposed to chemical modifications (e.g., hydrolysis and hydrogenation), then assembling unmodified and modified food elements through industrial techniques such as extrusion, moulding and pre-processing (like frying) and flavour enhancers, colourants and additives are frequently added. It is rare to find food ingredients from group 1 in this category (Monteiro *et al.*, 2019).

The participants' recipes were classified as protein, starch, fats, fruit, vegetables, dairy and eggs, sugar, seasoning, instant mixes and cupboard ingredients, alcohol and condiments.

In **Addendum I**, participants utilised NOVA group 1 ingredients such as beef mince, basmati rice, baby marrows and pre-halved gem squash, apples and fresh lemon juice, eggs, fresh milk, avocado and mixed seeds, and butter chicken spice blend. Participants used foods from the NOVA group 2, like *boerewors*, sugar, honey, butter and vegetable oils. The NOVA group 3 foods that the participants used included bacon and tuna, bread and *Maizena*, bottled garlic, tinned vegetables and tomato paste, puree and sauce, olives in brine, feta and mozzarella cheeses, sour cream, coconut oil and curry powders, chilli sauce and wine. Lastly, participants used foods from the NOVA group 4, such as frozen oven-baked chicken schnitzel or crumbed hake and sandwich ham, packaged bread, wraps, frozen ready-prepared pizza bases, puff pastry and flour, bottled caramelised onions and ready-to-heat creamed spinach and feta packets, bottled lemon juice, tinned coconut milk and diced bottled Peppadews™, Cheddar and Gouda cheese, yoghurt and ice cream, chocolate sauce, margarine, Aromat™ and various spice mixes, instant mixes, stock cubes, potato bake and Knorr's™ Macaroni and Cheese meal kit. Furthermore, condiments like chutney, mayonnaise, salad dressing and gin and tonic. Participants also consumed takeaway burgers, potato chips and ice cream with chocolate sauce. For a complete list of the participants' FDs of the NOVA classification system see **Addendum I**.

By classifying the participants' FDs according to the NOVA classification system and from the previous information on the UPFs identified, it was revealed that participants utilise a vast amount of UPFs as part of their FDs.

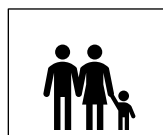
5.3 CONCLUDING REMARKS ON THE COOKING COMPETENCE OF WHITE YOUNG ADULT COUPLES RESIDING IN TSHWANE, SOUTH AFRICA

This research set out to explore and describe the cooking competence of white young adult couples to gain understanding and insight. The conclusions relate to the findings that the cooking competence dimensions are not independent but a complex web of interdependency. The findings revealed that external factors outside of the participants' control had a direct effect on participants cooking competence. It should be noted that the researcher did not measure the cooking competence of the participating couples, however, it was deemed important to obtain an idea of the participants cooking competence. The researcher used the indicators of each dimension in the cooking competence dimensions table (see **Table 3.1**) to identify if the participants had poor, fair or good cooking competence. For instance:

- Good: All or most of the cooking competence dimension indicators (i.e., academic, perceptual, conceptual knowledge and mechanical, and planning skills) were identified with the participating couple.
- Fair: An average of the cooking competence dimension indicators (i.e., academic, perceptual, conceptual knowledge and mechanical, and planning skills) were identified with the participating couple.
- Poor: Very few to none of the cooking competence dimension indicators (i.e., academic, perceptual, conceptual knowledge and mechanical, and planning skills) were identified with the participating couple.

A discussion of each of the participating couples cooking competence dimensions follows.

5.3.1 Participating Couple Number One (YF1)



Academic knowledge. *Knowledge of food preparation was visible* in that the couple knew recipes (e.g., food terminology) and measuring and weighing. The couple *indicated knowledge of nutrition for good health* by understanding appropriate portion sizes and that unsaturated fats were a better option than saturated fats. However, the couple's diet was *low in vegetable and fibre intake* and the couple consumed a diet high in UPFs, known to be low in fibre and nutritional content. The couple *indicated knowledge of food hygiene and safety practices*. The husband obtained knowledge of food preparation and nutrition from information sources such as his mothers, books, magazines, and the radio. The wife's information sources were her mother and husband, and she obtained her nutritional knowledge from a cooking competence-related subject in high school.

Perceptual knowledge. The couple indicated *some sensory perception knowledge* by understanding the properties of food and assessing the stages of food preparation in terms of their senses. The couple did not indicate any troubleshooting or learning from past mistakes, which could be attributed to the *high use of UPF ingredients* that makes food preparation infallible. Furthermore, exposure to various foods and ingredients was also lacking, as the wife indicated that she prepared *boring* food and would keep to what she knew and never tried new dishes to prepare; therefore, no exposure was present.

Conceptual knowledge. The high consumption of UPFs made it challenging to identify the participants' ability to conceptualise the outcome of a dish, as these meals were easy, quick, and uncomplicated meals to prepare. Therefore, little could go wrong during the food

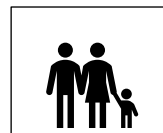
preparation and the expected outcome was consistent. The couple *revealed knowledge to evaluate and select available or accessible resources according to food product affordability, preferences, and perceived value for money*. Furthermore, they indicated knowledge to select ingredients accessible and available. The couple would not use a recipe for preparing dinner, but when baking would use a recipe and then not deviate from it, indicating *a lack of cognitive ability to reproduce a recipe without following instructions*.

Mechanical skills. The couple *showed skills in basic food preparation, although minimal active food preparation techniques and methods were identified*. The couple used many food preparation tasks, utilised passive cooking techniques and methods and could utilise kitchen equipment and appliances (primarily passive) according to the food preparation activity. The limited active food preparation activities and high passive food preparation activities could again be attributed to the high UPF consumption of the participants.

Planning skills. The couple indicated *fair shopping and purchasing skills* which coincided in that the participants did destination shopping related to the specials and discounts at the selected grocery shops. Furthermore, it was revealed that the planning skills associated with defrosting methods were low. The couple indicated *good multi-tasking skills* related to their mechanical skills in utilising passive food preparation techniques, methods, kitchen equipment and appliances. Lastly, *poor food storage planning was identified* as the couple had unplanned leftovers after meals.

In summary, the couple revealed *relatively good academic knowledge, but low perceptual and conceptual knowledge* and they showed *fair mechanical skills and low to fair planning skills*. Considering the couple's external factors such as time constraints, life stage in the family life cycle, family food hierarchy and couple dynamics, participating couple number one indicated *cooking competence that was perceived to be low to fair*.

5.3.2 Participating Couple Number Two (YF2)



Academic knowledge. The wife indicated knowledge of food preparation, such as recipes, food preparation terminology and preparing tasty and nutritious meals. She also revealed good nutrition knowledge for good health by consuming low-fat food products and identifying appropriate portion sizes. However, the couple revealed low to fair vegetable consumption in their FDs. They revealed *good knowledge of where food comes from and were well-informed about food hygiene and safety practices*, especially thoroughly cooking pork or whole chicken to prevent possible illness. It was revealed that the couple would *avoid certain ingredients*,

food products and food preparation techniques or methods if they did not know how to prepare them or were unfamiliar with a food preparation technique or method.

The wife gained her nutrition and food preparation knowledge from information sources such as a cooking competence-related subject in high school, nutritional knowledge from health promoters, food preparation information from her mother, television programmes and food packaging instructions. The husband indicated that he read food packaging to obtain food preparation information and knowledge of food hygiene and safety was obtained from his father.

Perceptual knowledge. *Troubleshooting* was identified by burning ingredients on the stove. Therefore, the *wife* would prepare most of her meals in her air-fryer or microwave oven as these are self-switch-off appliances, ensuring the food would not burn while she is busy with household tasks related to *her mechanical and planning skills*. Furthermore, she had *good knowledge in assessing the stages of food preparation in terms of senses* and comparing the texture of her rice to be done when it resembles that of her mother's or mother-in-law's rice which was soft and fluffy. The *husband* showed *knowledge and reasoning capabilities of food preparation processes*.

Conceptual knowledge. The *wife* revealed the ability to *conceptualise a dish's outcome*. However, as with YF1, the couple also consumed a *diet high in UPFs* and therefore little chance that it would not turn out as expected. The wife identified with all the components mentioned in the adapted cooking competence dimensions table to have *good monitoring, observation, and adaptation knowledge*.

Furthermore, she was able to select ingredients accessible and available by using ingredients to prepare food that otherwise would spoil. She indicated *improvising, adapting and substituting abilities* in her ability to utilise leftovers by incorporating them into a subsequent meal. She revealed the *cognitive ability* to reproduce a banana bread recipe seen on a cooking show into cake pops that were the perfect bite sizes for her toddler's lunch box.

Mechanical skills. *High usage of passive food preparation activities and kitchen equipment and appliances was revealed*. From all the participants, the *wife* could utilise the microwave oven best and prepare dishes such as a potato bake in the microwave, not just as a reheating or defrosting appliance. She could boil potatoes in the microwave oven, cook the potato bake (using the convection oven setting of the combination microwave oven), and broil cheese on top of the potato bake. She revealed using *good kitchen equipment, appliances, and food*

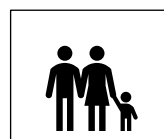
preparation methods skills. The husband showed *mechanical skills* in his ability to *braai* lamb ribs.

Planning skills. *Planning and scheduling skills before food preparation were identified* in that the wife revealed *fair to good purchasing skills* as she would shop for specials and discounts. If a product was on discount, not on her list, but a product they used often, she would purchase the items to save costs. *Some menu planning was revealed* as the participant prepared a shopping list but would eventually walk through all the isles in the grocery store and purchase items that were not on the original shopping list.

Planning and scheduling skills during food preparation were good, especially multi-tasking skills. Poor planning skills were revealed compared to the participants defrosting methods in that dinner was decided on only when participants came home from work. *A lack of food storage planning* was revealed, and the participant prepared too much food, leading to food waste.

In summary, the wife revealed good cooking competence. She had good academic knowledge and fair to good perceptual knowledge, but *especially good conceptual knowledge*. The good conceptual knowledge could be due to boundaries such as time constraints, life stage in the family life cycle and psycho-social factors such as family food hierarchy, family gatekeeping and couple dynamics. *Good mechanical skills* were revealed and *fair planning skills*. The husband only *braai*ed and the responsibility of food preparation remained the wife's and therefore it was difficult to determine the husband's cooking competence and why this couple's cooking competence could not be determined as an entity.

5.3.3 Participating Couple Number Three (YF3)



Academic knowledge. *The couple revealed knowledge of food preparation, such as basic food chemistry and knowledge of nutrition for good health.* Although the couple's FDs indicated relatively *high UPFs*, they still consumed *relatively nutritious meals* and a good inclusion of vegetables was revealed in their FDs with good inclusion of vegetables. The couple's knowledge of food trends and fashions in vogue related to the *free-from-ingredients food trend*. They believed that gluten in the wife's diet affected the wife's breast milk and was a result of their child's reflux and rash, and during this time eliminated gluten food products from her diet. It indicates a *lack of nutritional knowledge and falsities obtained from information sources*. The couple obtained knowledge through information sources such as their mothers, food preparation knowledge through social media platforms like Facebook and celebrity television shows such as Jamie Oliver on utilising leftovers.

Perceptual knowledge. The couple *indicated perceptual knowledge* in their understanding of the properties of food in terms of senses by balancing a sour dish with sugar. The couple had the *knowledge and reasoning capabilities of food preparation processes*. They had the ability to know the effect of timing and temperature on ingredients, such as the amount of cooking required for vegetables to cook al dente in a stackable steamer and that contrasting texture cook at different lengths of time and the knowledge that the vegetables needed to be cut even sized for even cooking.

Conceptual knowledge. The ability to conceptualise the outcome of a dish was difficult to determine as the participants had a high amount of UPF ingredients in their FDs and as with the other YFs. However, the couple *indicated a good conceptualisation of the stimulus recipe*. Furthermore, the couple showed knowledge to evaluate and select available and accessible resources. For instance, they *assessed the time available for food preparation and selected food products that would ensure quick food preparation*, such as pre-packed soup mixes, ready-to-cook chicken schnitzels or microwavable baby potatoes. The couple also showed the *cognitive ability to reproduce a recipe by utilising illustrations from social media platforms* (i.e., Facebook) for inspiration and recipe ideas.

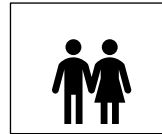
Mechanical skills. The couple indicated *good skills in basic food preparation*. They showed skills by using butterfly chicken breasts as an active food preparation technique (i.e., cutting skills). Furthermore, the couple were *skilled in using kitchen equipment and appliances*, such as stackable steamer, slow cooker and oven, with the appropriate food preparation methods (passive). The couple demonstrated *various active and passive food preparation techniques and methods*.

Planning skills. The couple *demonstrated planning and scheduling skills*, such as menu-planning skills *before food preparation*. The couple showed some planning in determining food products for three dishes they would purchase on a Sunday. By roughly planning three meals, the participants indicated that they eliminated food waste, which they disliked. The couple *demonstrated planning and scheduling skills during the food preparation*, with *good time management skills*. For instance, they would add ingredients to their slow cooker before work in the morning to ensure they have a nutritiously cooked meal when they get home from work, which saves them food preparation time, which is limited. Lastly, they *demonstrated good food storage planning* by preparing nutritious meals for their toddler. On days when the couple purchased takeaways or did not have time to prepare food, they would defrost the frozen meals for their toddler to ensure the child consumed a nutritious meal and not takeaway meals with a low nutritional value.

In summary, the couple demonstrates *adequate academic knowledge and good perceptual and conceptual knowledge*. They indicated *good mechanical and planning skills*. The external factors of boundaries, such as time constraints and life stage in the family life cycle and psychosocial factors, such as commensality and family food hierarchy, influenced the couple's cooking competence. It inhibited them from preparing the food they liked to prepare as both loved to prepare food together and used to have date nights before they had a child where they would prepare new dishes together.

The YFs showed similar external factors influencing their cooking competence, for instance, boundaries such as time constraints, a specific life stage in the family life cycle and psychosocial factors such as commensality and family food hierarchy. All the participants worked full time and with the responsibility of a child that has become their priority, the life stage in the family life cycle influenced the amount of time they had available for food preparation. Furthermore, commensality was important to these participants as they wanted to bestow family values into their children to eat dinner together as a family, but it also had to be done within a specific time as the children needed their dinner early so that they could be put to bed. Therefore, family food hierarchy was an important aspect of the couple's dinner preparation.

5.3.4 Participating Couple Number Four (YC4)



Academic knowledge. The couple indicated *knowledge of food and variety* by knowing the ingredients needed to prepare a white sauce. However, the couple *lacked nutritional knowledge for good health* because they struggled to indicate appropriate portion sizes and were misinformed in believing bread is unhealthy and should be limited in one's diet. Furthermore, the couple's FDs indicated low vegetable intake. The *lack of nutritional knowledge* can relate to the participants following food trends and fashions in vogue, such as the high-protein diet consumption trend, which seems to accompany a low starch consumption. The couple did not indicate knowledge of where food comes from but did indicate *knowledge of food hygiene and safety practices*, such as wiping kitchen surfaces for hygiene purposes. It was revealed the reason was the limited kitchen space and also kept the kitchen clean. A *lack of kitchen safety was identified* because the participants cut vegetables in their hands instead of on cutting boards or surfaces. The couple obtained knowledge from information sources such as their grandmother and mother, diet plans from the gym and television cooking shows like *MasterChef*.

Perceptual knowledge. The participants *indicated sensory perception* in the ability to wait for the right consistency of a roux for white sauce before adding the milk. This knowledge

indicated that the *participant's past experiences and memory were obtained through troubleshooting.*

Conceptual knowledge. The couple indicated that there were occasions where they prepared dishes that did not turn out as they envisioned it, for instance, wanting to prepare a lamb *korma* that resembled a dish from an Indian restaurant. Although the meal tasted good, it did not visually represent the dish they envisioned. However, the couple could somewhat conceptualise the stimulus recipe's outcome. The participants indicated evaluation and selection of available and accessible resources through preferences, which resulted in their creative and experimenting abilities of improvisation, adapting, and substituting knowledge, such as changing a pasta recipe obtained through a television show and omitting the egg that they disliked. It also relates to their perceptual knowledge, that through experience, they knew that they did not like the egg in the recipe and therefore omitted it. Furthermore, the couple searched on the internet for a recipe that resembled the pasta dish they had seen on the television cooking show. *They evaluated their food preparation abilities through their conceptual knowledge* and simplified the recipe by adaptation according to their food preparation ability.

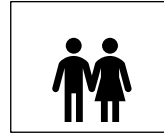
Mechanical skills. The couple revealed *good mechanical skills.* They were able to use the microwave oven for cooking frozen vegetables and they were able to make a white sauce, fry bacon, boil pasta and utilise the oven by steaming chicken in an oven bag, removing it and browning the chicken further. However, the *limited skills in active skills, such as different cutting styles,* were identified.

Planning skills. *Shopping skills were identified* as part of the participant's *planning and scheduling skills before the food preparation.* The couple purchased at grocery stores that provided bulk products on special that the participants purchased to save money. However, planning and scheduling skills during food preparation indicated that the couple would defrost their meat after work, which might indicate a *lack of planning skills.* However, the couple showed *multi-tasking skills* by, for example, boiling pasta and preparing a white sauce simultaneously.

In summary, the couple indicated *adequate academic knowledge,* although they *lacked nutritional knowledge,* which could be a result of the following food trends and fashions in vogue, which provided much nutritional misinformation. Some perceptual knowledge was identified, and the couple indicated *good conceptual knowledge. Fair mechanical and planning skills were revealed.* The external factors influencing the couple's cooking competence related to boundaries, such as time constraints, as the couple came home late from work and did not

want to spend too much time on food preparation. Also, financial boundaries, having 'end-of-the-month' meals and searching for specials when grocery shopping. *Psycho-social factors, such as couple dynamics, were important* to the couple and spending time together during food preparation was identified, creating a relaxed atmosphere between the couple.

5.3.5 Participating Couple Number Five (YC5)



Academic knowledge. *Knowledge of food and food variety* (e.g., knowing the ingredients) was indicated by the ability to prepare a *Bolognese* sauce and ingredient complementation, such as rosemary and thyme, to complement the lamb. *Knowledge of food preparation methods and operating kitchen equipment* was identified, although it *lacked the execution of the knowledge as seen in their mechanical skills*. The couple identified *knowledge of nutrition for good health* by identifying appropriate portion sizes. However, as seen in the FDs, their nutritional consumption identified a low vegetable intake. The couple showed *low nutritional knowledge* in that they followed food trends and fashions in vogue, such as the Banting diet trend in South Africa, which relates to the high-protein diet trends which accompany low starch consumption.

Furthermore, the participants identified with the natural foods diet and free-from-ingredients trends of the knowledge of food trends and fashions in vogue indicator. The couple *identified some knowledge of where food comes from* by receiving beef from their parents, who would butcher cattle and then the couple vacuumed the meat at a butchery. It was identified that the couple had *some knowledge of food hygiene and safety practices* in washing their hands throughout the food preparation process. However, when they had a *braai*, they were not as concerned about washing their hands as they would not touch the meat with their hands but used tongs instead. The couple's knowledge of information sources of food preparation, nutrition and product knowledge was obtained from their parents, communal friends from university years and the radio.

Perceptual knowledge. *Troubleshooting* was identified in one of the FD entries. A food processor was used to prepare potato mash, resulting in a sticky mash instead of a fluffy one. The wife indicated that she would not use a food processor to make mash again and, therefore, learned through this experience. Furthermore, the couple showed *knowledge of the effect of heat on ingredients* by identifying when oil is ready for deep-frying without using a thermometer.

Conceptual knowledge. *Improvisation, adapting, and substituting knowledge* were identified in that the couple would use a *Bolognese* sauce to make various dishes. Three FD entries

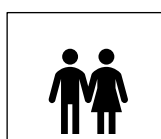
revealed different uses of the *Bolognese* and the participants indicated they would also use it for macaroni and cheese, tacos, lasagne, and meatballs.

Mechanical skills. Various *active and passive food preparation tasks, techniques and methods* were identified. However, the participants *lacked skill in using kitchen equipment or appliances* according to the appropriate food preparation methods.

Planning skills. *Good planning and scheduling skills* were identified *before food preparation*, especially concerning *shopping skills*. The participants would use different stores' special leaflets and plan their shopping according to the specials offered at the grocery stores. The couple also showed good planning and scheduling skills during food preparation by revealing *time management skills*. Furthermore, the couple revealed *good food storage planning* as the couple would place leftover food in Tupperware™ containers ready for work the following day or freeze the food in the Tupperware™ so that there was always food for the husband the next day to reheat at work.

In summary, the couple revealed *adequate academic knowledge, although they lacked nutritional knowledge*. *Good perceptual and conceptual knowledge* was revealed. Furthermore, the couple identified *some lack of mechanical skills but good planning skills*. External factors were influencing the couple's cooking competence in the sense of financial boundaries as the couple would do destination shopping for specific specials. Furthermore, *psycho-social factors such as couple dynamics* were revealed where the couple would keep each other company during food preparation rather than cooking together, as they each have their own style of food preparation. Therefore overall, *relatively good cooking competencies*.

5.3.6 Participating Couple Number Six (YC6)



Academic knowledge. The couple were identified as having *good academic knowledge*. They revealed *knowledge of food and food variety* by knowing the ingredients for preparing *Alfredo* pasta and different cuisines, especially Portuguese cuisine, which is part of the husband's cultural food consumption. They identified food preparation knowledge through the stimulus recipe and knowledge of basic food chemistry. The couple were the only participants who baked as part of their FDs and *recipe knowledge* (i.e., measuring and weighing recipe ingredients) was shown. *Knowledge of nutrition for good health* was identified in that the couple reduced their sugar intake and identified *good portion size knowledge*. However, the couple's FDs indicated a *low to fair consumption of vegetables* and mixed nutritional knowledge was revealed. For instance, consuming saturated fats like butter because it contains no preservatives and high amounts of olive oil, which they believe to be healthy as

Portuguese people are perceived to be generally healthy people and consume high amounts of olive oil.

Furthermore, the couple used low-fat salad cream but consumed full-cream milk. This was a surprising finding as the couple had seen a dietician for nutritional advice. However, a reason for the contradiction in nutritional knowledge may be due to the vast amount of nutritional misinformation available regarding where the participants obtain their information. It also relates to the couple *knowing food trends and fashions in vogue*, following the natural, whole food, free-from, decreased sugar consumption food trends. They also identify with the fragmentation of the consumer's mind trends.

The couple revealed *knowledge of food hygiene and safety practices*, such as awareness of cross-contamination and Salmonellosis. However, they have *contradicting practices* in using a marinade for raw chicken three times and freezing it between uses, which poses serious food hygiene and safety hazards. The couple identified *good knowledge of food origins* as they purchase their produce from the local farmer's market, where farmers from the surrounding area sell their produce. Also, the participants prepare most of their produce from 'scratch', such as tomato sauce from tomatoes purchased at the market. The couple obtained their knowledge of information sources for food preparation from their mothers (the husband from his father), a dietician, magazine articles, internet 'research', celebrity chefs such as Gordon Ramsey, Low GI cookbooks and cooking competence-related subjects at university.

Perceptual knowledge. The couple's *perceptual and conceptual knowledge were interrelated*. They revealed *troubleshooting knowledge* and learning through experience, such as preparing fresh pasta. They understood how to *handle ingredients*, specifically the properties of food in terms of taste, by preparing a Portuguese chicken marinade not according to quantities but by taste. Because of the husband's Portuguese background and the couple travelling to Portugal, they have been exposed to various foods and ingredients.

Conceptual knowledge. The couple's ability was identified to *conceptualise the outcome of a dish* and was *able to conceptualise the stimulus recipe*. The couple revealed a *good evaluation and selection of available and accessible resources*, considering the occasion, their preferences, dietary requirements, availability of produce and budget. Furthermore, the couple *showed knowledge to select ingredients accessible and available*, utilising ingredients they have and ensuring that the produce was used that will spoil otherwise. The couple showed *good creative and experimenting abilities* by improvising, adapting, and substituting ingredients and kitchen equipment. *Good cognitive ability* to reproduce a recipe was revealed when the wife would use Pinterest, Facebook, or the internet to obtain recipe ideas but never follow the

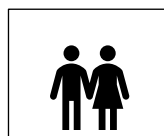
recipe. She only used the picture and prepared the dish accordingly. Therefore, she could reproduce a recipe from illustrations.

Mechanical skills. *Good skills in basic food preparation* were identified. The couple *revealed active and passive food preparation tasks, techniques and methods* and identified good kitchen equipment, appliances and related food preparation methods. What stood out was that the couple could create a breading station for chicken schnitzel. They utilised kitchen equipment like pasta machines and could prepare food in the microwave and not use it just for reheating and defrosting food.

Planning skills. *Good menu planning skills* were identified as the couple had a standard list of more or less specific amounts of chicken and meat and then purchased the ingredients, which were available and would determine the menu for the following two weeks. *Shopping skills* were revealed as they went destination shopping to buy Portuguese foods at a specific grocery store and fresh produce from the local farmer's market. The wife would always *plan before she started preparing food*. She developed a mental work schedule of what should be done first, what will take the longest and what will be the quickest. In that order, she prepared the meal and *applied multi-tasking skills*. The couple prepared just enough food and did not like leftover food.

In summary, the couple *showed very good cooking competence*. A reason for this might be because the wife teaches cooking classes as one of her three occupations. Furthermore, the couple did not always apply the knowledge they had, such as knowledge of cross-contamination and reusing a raw chicken marinade three times. *External boundaries were financial and special dietary requirements*. Psycho-social factors such as couple dynamics were observed where the wife constantly talked over her husband and did not let him finish his sentences during the interviews, which frustrated him. The wife would have liked to prepare one dish that could be consumed over a couple of nights. She now had to prepare dinner every night when she was in charge of dinner, as her husband did not like leftover food. However, the *couple revealed an equal amount of cooking knowledge and skills*. The couple revealed a *passion for food preparation*, which might be the reason for their good cooking competence.

5.3.7 Participating Couple Number Seven (YC7)



Academic knowledge. The couple *revealed knowledge of food*, such as different cuisines. *Knowledge of nutrition for good health* was shown, such as limiting salt in a diet. However, the couple came to this knowledge when the wife was diagnosed with high blood pressure. The

diagnoses led to nutritional misinformation, as the couple believed Himalayan rock salt was a healthier alternative to table salt. Like other participants, they also believed bread is unhealthy and would consume wraps instead, which is perceived as a healthy alternative. Furthermore, the couple's FD showed a *low to fair consumption of vegetables*. Therefore, they were identified as having a *lack of nutritional knowledge*.

However, the couple revealed *knowledge of where food comes from* as they would *hunt and good food hygiene and safety practices*. The couple indicated *knowledge of cross-contamination* and used different cutting boards, which they would rinse between uses. Raw meat and vegetables would be kept separate, and they started with vegetable preparation and ended with raw meat using a new cutting board. They would also rinse their vegetables for soil, especially when they were not peeled. The participants obtained food preparation knowledge from information sources such as Korean cookbooks, mass media and Facebook videos.

Perceptual knowledge. The couple *revealed knowledge of how to handle ingredients* by understanding the properties of food in terms of senses, such as *assessing the stages of food preparation*. The couple showed exposure to various foods and ingredients as the husband lived in England and as a couple, they lived in Korea for a few years, from where they obtained their exposure.

Conceptual knowledge. The *conceptualisation of the outcome dish* was difficult to identify as the dishes of the FD were easy to prepare and meals, like *braaivleis*, did not affect the outcome. The couple struggled to conceptualise the stimulus recipe by comparing it to lasagne. The couple showed *improvising, adapting, and substituting abilities* and revealed awareness of the versatility of ingredients by using garlic and mushrooms with either bacon or onions for almost all dishes of their FD. The couple showed the *cognitive ability to reproduce recipes from illustrations*. The couple used Facebook recipes that were perceived to be easy to prepare and would adapt the recipe according to what they had available in the house. Therefore, the couple also *showed evaluation and selection of accessible resources*.

Mechanical skills. *Good skills in basic food preparation tasks, techniques, and methods*, active and passive, were identified. Furthermore, the couple showed *skills in operating kitchen equipment and appliances* according to the appropriate food preparation methods.

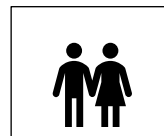
Planning skills. *Good purchasing skills* were identified as the couple would shop for specials and discounts. *Planning skills associated with defrosting methods* were identified. If planned, the meal would be defrosted overnight in the refrigerator; otherwise, they would purchase fresh

meat from work on the way home. Furthermore, when preparing the squid dish, this couple *knew the ingredients' properties* well enough that it could turn rubbery if not appropriately defrosted (e.g., in the microwave). This awareness *relates to perceptual knowledge*. Lastly, the couple planned to prepare enough food for the following workday, saving them time and money.

In summary, the *couple demonstrated adequate academic knowledge, perceptual and conceptual knowledge, and mechanical and planning skills*. *External factors that influenced the couple's cooking competence* were time constraints, special dietary requirements and psycho-social factors such as a lack of commensality, as the participants demanding work hours do not allow it. All in all, the *couple revealed good cooking competence*.

The YCs showed similarities in their external factors, influencing their cooking competence. For instance, boundaries such as time constraints and financial boundaries were a recurring theme. Psycho-social factors such as commensality and couple dynamics were perceived. Although the reasons for commensality differed from the YFs, as the couples wanted to spend time together, only one YC lacked commensality due to long working hours. Furthermore, couple dynamics related to the couples wanting to prepare food together or spend time during food preparation. The cooking competence of the cohabitating couples follows.

5.3.8 Participating Couple Number Eight (CC8)



Academic knowledge. The couple *revealed knowledge of food*, such as ingredient characteristics, by knowing that mushrooms should be wiped and not rinsed and ingredient complementation. They also showed *knowledge of food preparation*, such as knowledge of recipes (i.e., knowledge of food terminology) and the knowledge to prepare tasty and nutritious meals. The couple had *knowledge of nutrition for good health* by consuming ingredients low in sugar and salt, knowledge to consume a variety of vegetables and indicated good vegetable inclusion in their FDs. The couple showed *knowledge of special dietary requirements*, such as following the principles of the Candida diet, although they were not diagnosed with Candidiasis. They were very *knowledgeable of the food trends and fashions and followed all of the trends in vogue*. However, *numerous falsities* associated with food trends and fashions provide various misinformation regarding nutrition for good health. The couple believed food in its most natural and unprocessed form to be healthy. It had to be free from preservatives and additives, gluten-free, yeast-free, spices should be non-irradiated, dairy products should contain extra probiotics and believed that organic ingredients are healthy food options. In addition, perceived saturated fats such as coconut oil, full cream milk, double cream yoghurt and sour cream were healthier alternatives to low-fat products.

Furthermore, they would substitute table salt for Himalayan rock salt, perceived as a healthier alternative salt and lower their starch intake. Honey was a sugar replacement that the couple perceived to be healthier and 'safer' to consume. However, from the participants' FDs, it was seen that they consumed potatoes, a high-starch vegetable that grows beneath the ground and bread, which is a high-starch food product and contains yeast. They also used Robertsons®'s steak-and-chop spice, an irradiated spice mix. The couple *identified the ingredients they did not consume*, and the couple revealed *no knowledge of where food comes from*.

The couple *showed knowledge of food hygiene and safety practices* by rinsing their vegetables with salt water to remove possible insects. They obtained information about food preparation from their parents and the internet. The couple indicated that they 'self-study' their nutrition information from sources from the internet and food product information from food product labels, which contributed to the *misinformation obtained regarding nutrition*.

Perceptual knowledge. *Knowledge and reasoning capabilities of food preparation processes*, such as the effect of combining different ingredients, were *identified* by showing knowledge that *Maizena* needed to be cooked through. Furthermore, the couple revealed the impact exposure to various foods and ingredients had on their cooking knowledge and skills as they tried some recipes through the exposure they received.

Conceptual knowledge. *Evaluation and selection of available and accessible resources were identified* in that the couple would select food products based on their dietary requirements and available budget. Their special dietary requirements increased their *creative and experimenting abilities* through improvisation, adaptation, and substitution. Furthermore, the couple revealed the *cognitive ability to reproduce a recipe by replicating a dish they had eaten at a restaurant*. The couple also showed knowledge in *reproducing a recipe from illustrations*. They would type ingredients available in the house into an internet search engine and look at the image results, select the most appetising dish and then go to the recipe and adapt it according to their dietary requirements.

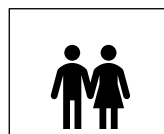
Mechanical skills. *A wide range of skills in basic food preparation was revealed, passive and active*. The couple also showed the ability to utilise kitchen equipment and appliances according to the food preparation methods. Therefore, *good mechanical skills were identified*.

Planning skills. Changes in the participants' jobs, planning for their wedding, a busy schedule and no set routine as a couple contributed to *poor shopping and purchasing skills* that had not

yet been established. However, they had *good planning skills* in their ability to multi-task and plan for extra food quantities to have food for lunch the next day to save on food preparation time and costs.

In summary, the couple had *good academic knowledge*; however, the participants believed in nutritional falsities. They indicated *good perceptual and conceptual knowledge and mechanical skills*. The couple's *planning skills were good*, although *external boundaries* such as time and financial constraints and special dietary requirements *influenced their cooking competence*.

5.3.9 Participating Couple Number Nine (CC9)



Academic knowledge. Participants showed *low knowledge of food and lacked knowledge of different cuisines and the specific ingredient combinations that complement each other. A lack of food preparation terminology was revealed and nutrition knowledge for good health was low.* The couple indicated large protein portions and their FDs identified low to fair vegetable consumption. The male participant indicated some knowledge relating to nutrition but obtained his information from un reputable sources, which provided the couple with false nutritional knowledge. The *male showed some knowledge of food health and safety practices* by being aware that one can contract Salmonellosis from consuming undercooked chicken. However, the *insufficient knowledge of food hygiene and safety practices* revealed that the couple could be more conscious of hand washing during food preparation. Hand washing and surface cleaning during food preparation were more related to the cleanliness of the kitchen than to health and safety consciousness.

Furthermore, the couple purchased ready-cut vegetables like gem squash as the female was scared she would cut herself if she tried to cut the vegetables herself. The couple obtained food, nutritional and food product information from their mothers and fathers, food packaging instructions, a biokineticist, a medical doctor and television advertisements. However, various of these *information sources provided misinformation*.

Perceptual knowledge. The couple revealed *low practical knowledge obtained through memories and past experiences*, which could be due to it being the couple's first year living and preparing food together. Therefore, they had not yet obtained experience from practising and encountering troubleshooting or making mistakes. The female was also cautious in preparing new dishes and kept to the knowledge (however limited) she had gained from her mother since grade ten in high school.

Conceptual knowledge. The couple revealed *low conceptual knowledge* to conceptualise a dish's outcome, which was confirmed through the stimulus recipe and *lack of creative and experimenting abilities*.

Mechanical skills. The couple's skills in *basic food preparation techniques* were low since they purchased readily cut vegetables. However, the participants indicated *knowledge of working with kitchen equipment* such as a pressure cooker.

Planning skills. The couple demonstrated *fair planning and scheduling skills before food preparation, such as purchasing*. They would purchase at a specific grocery store for its reward programmes and attached benefits. They also showed *planning and scheduling skills during food preparation, such as multi-tasking during food preparation*. The couple revealed *good food storage planning* as they planned their meal portions. The couple found that at the start of cohabitating together, they prepared too much food and wasted money and food as it was the first time they prepared meals for two people. Therefore, they worked out the food portions to ensure they had just enough for two people and no leftovers, as the leftovers ended up in the bin.

In summary, the couple indicated *low cooking competence compared to the other participants*. However, it must be noted that at the time of data collection it was the couple's first year living and preparing food together and they have *limited cooking competence and academic and background knowledge*. External factors that influenced the couple's cooking competence were mainly *financial boundaries*, as they felt obliged to purchase at a specific retail chain store for the financial rewards it offered.

The CCs revealed similar boundaries and psycho-social factors as the YCs. The difference between the CCs was that they were still getting used to sharing household responsibilities, which included food preparation and purchasing.

5.4 CONCLUDING SUMMARY

This research set out to explore and describe the cooking competence of white young adult couples to gain understanding and insight. The findings were examined according to the aims and objectives of this study, based on the key concepts, dimensions and indicators identified by the cooking competence. Furthermore, the findings were described and interpreted, which provided insight and understanding into the cooking competence of young adult couples. The next chapter concludes the study.

Chapter 6: CONCLUSION

Conclusion of the study

This study aimed to explore, describe, and understand the cooking competence of white young adult couples residing in Tshwane, South Africa.

The chapter outline provides reflections on the study. A summary of the findings follows, and an adapted cooking competence dimensions table is discussed. A concluding summary is provided of the cooking competence of the participants, followed by a discussion of the proposed conceptual framework for this study. The study's contribution to the research field and methodological reflections are discussed, followed by the trustworthiness, limitations, and recommendations for future research.

The chapter concludes with a closing summary.

6.1 REFLECTIONS ON THE STUDY

In Chapter 1, the literature confirms that cooking competence positively impacts health but is globally on the decline, which is prevalent among young adults (Asher *et al.*, 2020; Lavelle *et al.*, 2019, 2020; Plessz & Étilé, 2019; Slater, 2013; Slater *et al.*, 2018). Contributing factors included decreased cooking competence learning in educational institutions, the change in lifestyle and societal norms and the ever-increasing time deficit crisis. These factors consequently gave rise to the consumption of UPFs, which is associated with health concerns and contributes to the global obesity epidemic (Lavelle *et al.*, 2019; Slater, 2017; Slater *et al.*, 2018). These contributing factors were also found to be true in the South African setting (Abel & Roshan, 2019; Discovery Vitality, 2017; Erzse *et al.*, 2021; Koekemoer & Booyse, 2013; McKay & Subramoney, 2017; Ngwenya & Shange, 2019; Smit *et al.*, 2017; Statistics South Africa, 2020; Van Vollenstee & Van der Merwe, 2021; Van Zyl *et al.*, 2010; World Health Organization, 2020). Despite these concerning factors, limited research has been conducted on the cooking competence of young adults, specifically young couples internationally and in the South African setting. Therefore, this study aimed to contribute new information to the South African literature and give cultural insight into South Africans' diets and food consumption by exploring and describing the cooking competence in terms of the cooking knowledge and cooking skills of white young adult couples living in Tshwane, South Africa. A summary of the findings follows.

6.2 SUMMARY OF FINDINGS

As discussed in **Chapter 1**, the depreciation of cooking competence-related subjects, the change in lifestyle and societal norms, the time deficit crisis, and the high consumption of UPFs, all contribute to the decline in cooking competence. Although the study's findings cannot be generalised towards the entire young adult population in South Africa, some of the findings correspond with but also contradicts the literature. A discussion follows.

6.2.1 The depreciation of cooking competence-related subjects

Only three female participants had some background information on cooking competence-related subjects from either high school or university. These participants indicated academic knowledge regarding food preparation, such as terminology, methods and techniques, nutritional knowledge (especially regarding food groups and portion sizes), and food hygiene. Two of these participants revealed good perceptual and conceptual knowledge as well. All three indicated good mechanical skills and one participant had excellent planning skills. Two participants had the subject as a high-school elective and a third as a subject for the first semester of her first year at university, the latter indicating excellent cooking competence, most likely the best of all the participants that took part in the study. The findings of this study concur with the literature in that it is still predominantly associated with a female subject. Since only three of the participants had some knowledge of the subject, it could be inferred that similar to international and some South African research, cooking competence programmes are a depreciating subject in schools and universities (Autio *et al.*, 2021; Lichtenstein & Ludwig, 2010; Ronto *et al.*, 2017; Slater, 2013; Statistics South Africa, 2018; Worsley *et al.*, 2016).

Furthermore, these three participants indicated that the subject considerably influenced their cooking knowledge and skills. For instance, one indicated that she gained her nutritional knowledge from home economics and not from her mother, which is significant as research indicates that most people obtain their cooking knowledge and skills from their mothers (Caraher *et al.*, 1999; Lavelle, Spence, Hollywood, McGowan, Surgenor, McCloat, Mooney, Caraher, Raats & Dean, 2016). In addition, the participant who had the subject at university said that it greatly influenced her life and changed how she viewed food and preparation (see **5.2.1.1.7 d**). However, of the two participants who had the subject as a high school elective, one revealed that she was '*not good*' with preparing food and the other revealed that she did not enjoy food preparation, even though she had cooking knowledge and skills. These two participants utilised UPFs the most in their FDs. It could be a finding that contradicts the literature, although the researcher believes it is instead a result of the external environment in which these two participants find themselves. They both are in the YF life stage, with

considerable time constraints due to long working hours and do not have much time for food preparation.

In contrast, the participant who had a cooking competence-related subject at university was in the YCs family life stage with no children. The participant worked part-time and therefore had more time on hand for food preparation, which could also be why she enjoyed food preparation more than the other two participants. Therefore, further research is required on the effect of cooking competence-related subjects on people's cooking competence later in life, as no clear conclusions could be drawn from this study.

6.2.2 The change in lifestyle and societal norms

All participants were employed, most full-time, with three having up to three part-time occupations. All participants mentioned time constraints when preparing food and participants who found themselves in the YF life stage were particularly 'time-stressed'. The YFs did not involve their children in food preparation but took turns as a couple to look after the child while the other prepared dinner. One YF said that her toddler was with her in the kitchen during the food preparation of one of the recipes and the participant was frustrated because dinner took almost two hours to complete, and she complained that she had to bath the toddler as well in-between. Therefore, the study's findings concurred with the literature in that participants have long working hours and busy schedules. Women in full-time employment, parents experiencing time scarcity and, as a result, a decline in cooking competence is seen as parents are too tired to involve their children in the food preparation process (Lai-Yeung, 2015; Lavelle *et al.*, 2019; Sharif *et al.*, 2018; Slater, 2013).

Participants indicated intergenerational transmission of cooking knowledge and skills, which most participants stated that they obtained from either their mothers, fathers, or grandparents and, therefore, can be linked to the concept of socialisation and enculturation. Participants said, "*that is how my mother taught me*", or "*I sat with my mother on the kitchen counter and then learned to cook that way*", and therefore learned their cooking knowledge and skills by physically being involved in the food preparation process or through observation. However, mothers are still the primary source of transferring cooking knowledge and skills, which concurs with the literature (Lavelle *et al.*, 2019; Rhodes, Chan, Prichard, Coveney, Ward & Wilson, 2016). Similar findings by the study of Rhodes *et al.* (2016) were found where grandparents shared a relationship with children regarding dietary behaviours. One participant in this study indicated that although she obtained some food preparation knowledge from her mother, she learned a lot about food preparation from her grandmother, as she stayed with her grandmother after school in the afternoons.

Furthermore, the study by Rhodes *et al.* (2016) found a trend towards the father's involvement in the transfer of food preparation knowledge. It was revealed in this study that the male participants learned to *braai* from their fathers and one participant was taught by his father how to prepare Portuguese cuisine, particularly a Portuguese chicken marinade, which was a tradition to pass on from father to son. Therefore, it might suggest that the transfer of intergenerational food preparation knowledge and skills within the family context is still present in the South African setting and passing on culturally related foods is deemed necessary.

However, parents were also a source of misinformation. Because the information came from the parents, participants accepted it as reputable information, such as a participant's mother advising dissolving Himalayan rock salt in water as it was perceived to combat cholesterol and high blood pressure.

Furthermore, the literature suggests that in South Africa, it is still perceived as the female's responsibility to take care of household responsibilities (Erzse *et al.*, 2021; McKay & Subramoney, 2017; Smit *et al.*, 2017; Van Zyl *et al.*, 2010). However, this study found contradictory results: besides one YF couple who perceived the household responsibilities as the wife's duties, all the other participating couples shared food preparation responsibilities and almost all of them did their food purchasing together. The YCs and CCs would prepare dinner together or take turns and the YFs shared this responsibility with one parent taking care of the child while the other parent prepared dinner.

6.2.3 The time deficit crisis

The time deficit crisis results from societal norm changes, as discussed previously and confirms the literature that the lack of time influences people's cooking competence (Bielemann *et al.*, 2015; Contini *et al.*, 2018; Étilé & Plessz, 2018; McGowan *et al.*, 2017; Van der Horst *et al.*, 2011; Wahlen *et al.*, 2016). All participants indicated that time constraints are a significant factor in participants' cooking competencies, influencing their food preparation, the type of food and ingredients they would purchase and the food preparation techniques and methods they would use. The time deficit crisis was found to be a leading cause for participants to make use of UPFs. Therefore, the time deficit crisis was identified as an external boundary to participants cooking competence.

6.2.4 High consumption of UPFs

The study's findings are concurrent with the literature in that the participants are high consumers of UPFs and YFs, in particular, seemed to be high consumers, which is linked with

a decline in cooking competence. Furthermore, four participating couples indicated low vegetable and fibre consumption in their FDs. Three participating couples had a low to fair consumption and only two had an acceptable amount of vegetable consumption. The literature indicated that South Africa's young adult population aged 20 to 35 is responsible for the highest UPF market shares and that South African diets are of poor dietary value (Abel & Roshan, 2019; McKay & Subramoney, 2017; Statistics South Africa, 2020; Wahlen *et al.*, 2016; World Health Organization, 2020).

Furthermore, high UPF consumption contributes to low dietary value, poor health and an increase in NCDs and obesity, which is a considerable problem in South Africa (Discovery Vitality, 2017; McKay & Subramoney, 2017; Statistics South Africa, 2020; Van Vollenstee & Van der Merwe, 2021; Wahlen *et al.*, 2016; World Health Organization, 2020). Although not the objective of this study, it was noted that some of the participants already suffered from NCDs, such as high blood pressure and cholesterol and that the participants with high UPF consumption were inclined to be either overweight or obese. Therefore, as this study's findings concur with the related literature, cooking competence should not be disregarded as a feasible intervention to combat the obesogenic crisis, as stated at the beginning of this study.

In addition, it is difficult to identify certain perceptual and conceptual knowledge and mechanical skills dimension indicators in some participants who used UPFs in their meals as indicated in their FDs. Possible reasons could be that because UPFs are convenience orientated, participants require only to reheat or cook the ready-to-heat or ready-to-cook meals, which removes the participants from the traditional food preparation cognitive processes and technical tasks. Although the participants might have academic knowledge, they do not need to use perceptual knowledge, such as troubleshooting or conceptual knowledge, such as conceptualising the outcome of the dish or creativity and experimenting knowledge when preparing these meals. Therefore, the participants' perceptual and conceptual knowledge is not being developed when using UPFs. Besides passive food preparation methods, the participants do not need to develop or practice their active mechanical skills such as active food preparation techniques. These findings coincide with the literature that indicates that using UPFs results in a decline in an individual's cooking competence (Slater, 2017; Wolfson, Smith, Frattaroli & Bleich, 2016).

6.2.5 Conceptualisation of cooking competence

The researcher conceptualised the concept of cooking competence for this study. However, it was found that there were numerous challenges in the literature regarding the concept.

First, it was found that there is much confusion in the literature regarding the definition of cooking competence and its key concepts, which made it difficult to conceptualise. As the literature explains (see **Chapter 2**), some studies that used the concept did not define, describe, or explain it. Other studies used the term interchangeably with cooking skills and food skills, creating further confusion. Researchers have expressed concern about the “conceptual misunderstanding” arising from the erroneously used concepts as interchangeable concepts (Mills *et al.*, 2017). In addition, it was found that the concept of competence was ‘domain specific’ and used by various vocational fields and therefore difficult to obtain a coherent definition of the concept.

It became clear that for the researcher to conceptualise cooking competence, it was necessary first to understand the concept within the consumer food-related literature. Therefore, the researcher reviewed where the concept of competence originated, how different vocational fields and countries defined it and how it was defined in consumer food-related studies.

Furthermore, it was concluded that to conceptualise cooking competence within the food-related domain, seminal references would need to be used to obtain a clear understanding of the concept. The seminal references dated back to 2002 to 2013, however, it provided invaluable insight into the conceptualisation of the key concepts of cooking competence. Additional sources were reviewed to understand what cooking competence, key concepts, and indicators entail (see **Addendum L**).

Through the literature, the researcher identified knowledge and skill as consistent concepts when competence was defined and therefore found that cooking competence was a two-dimensional concept of cooking knowledge and skills. The consumer food-related studies that defined cooking competence also verified the finding.

The second challenge was understanding the difference in cooking competence, cooking skills and food skills, as these concepts were discovered to be used interchangeably in the literature. From reviewing the literature, it was found that food skills were a derivative of cooking skills, with no clear distinction between the two concepts and that the literature used these concepts as substitutable concepts. Therefore, despite the specific definition, there was a general understanding in the consumer food-related research field that cooking, and food skills formed part of various derivatives of cooking competence. By understanding cooking competence, the researcher could conceptualise the key concepts of cooking competence for this study.

Lastly, it was found that over time the concept of cooking competence morphed into the concept of food literacy. This could be why the seminal references are older references as the

current research focus on food literacy. Furthermore, it was revealed that cooking competence (i.e., cooking skills and knowledge) and food literacy, are very similar concepts (García-González *et al.*, 2018). These "... terms have shifted the focus from the traditional technical-centred approach to a wider concept that explains how individuals use nutritional knowledge and cooking skills to prepare a meal within a particular food environment ..." (García-González *et al.*, 2018).

Therefore, from reviewing the literature and from the results of this study, it was found indisputably that cooking competence is an interrelating component encompassing food literacy. However, food literacy includes cooking competencies (knowledge and skills) and all related aspects that will develop and enhance an individual's and community's health and well-being. Other intrinsic factors include dietary behaviour, self-efficacy and attitudes of an individual towards healthfulness and the broader food environment and the holistic food system that impacts it (Azevedo Perry, Thomas, Samra, Edmonstone, Davidson, Faulkner, Petermann, Manafó & Kirkpatrick, 2017; Desjardins & Azevedo, 2013; Krause, Sommerhalder, Beer-Borst & Abel, 2018; Rosas, Pimenta, Leal & Schwarzer, 2021; Slater *et al.*, 2018; Thomas, Azevedo Perry, Slack, Samra, Manowiec, Petermann, Manafò & Kirkpatrick, 2019; Truman, Lane & Elliott, 2017; Truman & Elliott, 2019; Vettori, Lorini, Milani & Bonaccorsi, 2019; Vidgen & Gallegos, 2014).

This study focused on the cooking competence of young adult couples and, therefore, only explored the aspects of food literacy relating to cooking competence, its key concepts, and indicators.

6.2.6 Additional findings

Additional findings of the study included boundaries within which each participant found themselves (unique to each individual), psycho-social factors (intrahousehold dynamics), and misinformation. Furthermore, it was found that cooking competence is part of food literacy.

6.2.6.1 Boundaries

Throughout the findings, limiting factors, or boundaries, were observed. Participants experienced external boundaries over which they had no control and were an external factor.

As previously discussed, most participants said that they have **time constraints**. It influenced the type of food participants would purchase, such as UPFs, which made food preparation quick and easy. Participants would choose passive food preparation techniques and methods

due to time limitations. The lack of time also hindered participants from preparing food how they would have liked to. Furthermore, the lack of time and high consumption of UPFs were related to participants' life stages. The YFs experienced more food preparation and time constraints than the YCs and CCs. Due to time constraints, the YFs also purchased more UPFs and utilised more passive food preparation techniques and methods than the YCs and CCs.

Financial boundaries influenced participants' ability to afford specific ingredients, was a prominent theme throughout the study and influenced participants cooking competence. The financial boundaries influenced the participants' menu planning and shopping skills and determined the type of food products and ingredients participants would purchase and consume and the food preparation techniques and methods used. Participants would purchase products at stores that they found to be affordable and within their financial means. Participants purchased products on special or used store reward programmes to cut costs. Other boundaries included **special dietary requirements**. Participating couples had limited food choices due to health restrictions influencing their menu-panning and food-preparation practices.

It was also discovered that the **life stage in the family life cycle** significantly influenced the participants' cooking competence. For instance, a YF couple said that they used to enjoy food preparation and prepared meals together to spend time together as a 'date night'. This was not possible anymore with having a child and another YF couple said they stopped dining out because it is too difficult in the child's company.

Furthermore, the YF couples revealed they were conscious of their children's meals but were not worried about their own nutrition. One couple indicated that there are just too many other things to stress and worry about that they cannot stress about their health. Furthermore, a YF indicated that sometimes they are just 'fed-up' and tired and would get a takeaway delivered instead of preparing dinner, usually when they had to work on weekends. Moreover, the third YF couple indicated that they would ensure that their child eats a nutritious meal that they would have in the freezer to reheat when they are too tired to prepare food and order takeaways for themselves. The participants' life stage in the family life cycle influenced their psycho-social factors.

6.2.6.2 Psycho-social factors (Intra-household dynamics)

Throughout the findings, psycho-social factors (intra-household dynamics) were observed, which was also an external factor related to participants' life stages.

It pertained to **commensality**, which was important to YFs, YCs and CCs who wanted to spend time together, as confirmed in the research report of Marshall and Anderson (2002) that newly married and cohabitating couples make it a priority to eat dinner together.

It included the **family food hierarchy**, such as YFs scheduling mealtimes around children (Short, 2003), which is associated with the YFs of this study.

Furthermore, **family gatekeeping** is where a family member is responsible for food-related tasks in the home (Burton, Reid, Worsley & Mavondo, 2017). In this study, it was found that this task was divided equally among the participating couple. One YF couple, though, found that the wife was the family gatekeeper not only for the food-related chore in the household but had to take responsibility for all the household work traditionally associated with a wife's responsibilities, as previously discussed. Furthermore, this participant was obligated to be the gatekeeper of the family's nutritional well-being, which resulted in the following psycho-social factor.

Couple dynamics involved how well the couples got along with each other. For instance, extreme tension was experienced during the interviews of the YF couple, where the wife was the family gatekeeper. The wife showed frustration as she worked full time, had to perform all the household duties (e.g., cleaning, food preparation and looking after their child), and were forced to take on the task of family's nutritional gatekeeper due to the husband's weight issue. There was no cooperation from the husband. He challenged the wife's food purchasing choices (e.g., low fat milk instead of full cream) and criticised the wife's food preparation abilities during the interviews. The wife would try to prepare nutritious meals but then added condiments to the meals to prevent complaints from the husband, all of which led to tension, conflict and frustration between the couple. The couple dynamics of this study also related to *family food conflict*, which according to Burton *et al.* (2017:185), links to "... how much conflict there is in the family regarding preferences and how often there are arguments about food ...".

6.2.6.3 Misinformation

It was found that although participants were knowledgeable in some instances, they believed certain falsities due to using questionable information sources, especially regarding nutritional aspects. Participants relied on social media and internet sources with various available dietary information, which was not always reputable. It concurs with what was found in the literature that mass media significantly influence people's food choices (Viljoen, 2013:9). As a result, it creates confusion regarding the requirements of a healthy diet. Misinformation included

aspects such as believing coconut oil is a better option when looking at 'healthier oils', although oils are similar and should be consumed in small amounts. It is the same with perceiving Himalayan Rock salt to be a better choice than regular table salt. As discussed in **Chapter 5** (see **5.2.1.1.3 a**), besides the trace elements of different minerals, it is very similar to regular table salt.

Furthermore, participants vilified bread, believing it is an unhealthy food choice and would replace it with, for example, wraps, a high starch content product. Besides social media and internet sources, medical practitioners and parents were also found to be a source of misinformation. Cronin (2016) and Mellentin (2015) indicated a loss of trust in expert advice, especially regarding health and nutrition, which is confirmed in this study. As previously discussed, parents, especially mothers, are one of the primary sources from which people obtain their food knowledge and skills (see **5.2.1.1.7 a**).

6.2.6.4 Cooking competence as a component of food literacy

In all of the findings of participants' cooking knowledge and skills, the dimensions and linked indicators were interrelated and interdependent. The complexity of cooking competence, dependent on the extrinsic environment participants find themselves in, relates to food literacy (Rosas *et al.*, 2021). However, food literacy includes all related aspects that will develop and enhance an individual's and community's health and wellbeing. Other intrinsic factors include dietary behaviour, self-efficacy and attitudes of an individual towards healthfulness and the broader food environment and the holistic food system that impacts it, of which cooking competence (cooking knowledge and skills) is a component (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2019, 2021; Slater *et al.*, 2018; Thomas *et al.*, 2019; Truman & Elliott, 2019; Vidgen & Gallegos, 2014). Therefore, cooking competence forms part of a component of food literacy and contributes to an individual's food literacy.

The following section discusses how the cooking competence dimensions table was adapted to the study's findings.

6.3 ADAPTED COOKING COMPETENCE DIMENSIONS TABLE

From **Chapter 5**, the cooking competence dimensions table has been adjusted according to the findings of this study (see **Table 3.1**). The study's findings revealed that cooking competence strongly interrelates with food literacy literature and therefore **Table 6.1** will be discussed in concurrence with the related food literacy literature found. The additional findings added to this table are indicated in **blue** and **bold**.

TABLE 6.1: ADAPTED COOKING COMPETENCE DIMENSIONS TABLE*

Cooking Competence		
Key concepts	DIMENSIONS	INDICATORS
Cooking knowledge	Academic	Knowledge of: - Food (e.g., different cuisines, food varieties, ingredients, food characteristics, combinations, complementation and food composition) - Food preparation (e.g., knowledge of recipes, measuring and weighing recipe ingredients, basic food chemistry, preparing tasty, nutritious meals) - Nutrition for good health (e.g., according to the relevant South African food-based dietary guidelines, special dietary requirements, food additives, preservatives and appropriate portion sizes) - Food trends and fashions in vogue (e.g., natural food, whole dairy food, lacto-fermented, free-from ingredients, decrease sugar consumption, high-protein diets and fragmentation of the consumer's mind trends) - Where food comes from (e.g., food origins and location) - Food hygiene and safety practices (e.g., safe food preparation practices, kitchen and personal hygiene and safety) - Information sources (e.g., family and friends, educational institutions, medical practitioners, health promoters, cookbooks, magazines, television, radio and food product labels and an individual's background information)
	Perceptual	- The practical knowledge obtained through memories and past experience - Troubleshooting - Understanding how to handle ingredients - Sensory perception - Understand the properties of food in terms of senses - Assess the stages of food preparation in terms of senses - Knowledge and reasoning capabilities of food preparation processes - The effect of combining different ingredients - The effect of temperature on the ingredients The effect of timing and temperature on ingredients Exposure to various foods and ingredients
	Conceptual	- Ability to conceptualise the outcome of a dish - Good monitoring, observing and adaptation of knowledge - Evaluation and selection of available and accessible resources (e.g., time available, difficulty level of the meal, cooks' food preparation ability, occasion, preferences, dietary requirements, and available budget) - Creative and experimenting abilities - Improvisation, adapting and substituting abilities - Cognitive ability to reproduce a recipe (e.g., reproducing recipes without following instructions) Ability to reproduce a recipe from illustrations (e.g., images, photographs, videos)
Cooking skills	Mechanical	- Skills in basic food preparation Food preparation tasks, techniques and methods: active and passive Active and passive food preparation tasks (e.g., washing and defrosting) Active and passive food preparation techniques (e.g., cutting styles, mixing techniques, and other food preparation techniques) Kitchen equipment, appliances and food preparation methods (active and passive)

Cooking Competence		
Key concepts	DIMENSIONS	INDICATORS
	Planning	- Organisational and timing skills - Planning and scheduling skills before the food preparation - Menu planning skills (e.g., unstructured or semi-structured planning taking place before shopping and purchasing occur) - Shopping skills (e.g., monthly, bi-weekly, by destination, or 'bread-and-milk') - Purchasing skills (e.g., shop for specials and discounts, shop at stores that offer reward programmes and are convenient) - Planning associated with defrosting methods - Planning and scheduling skills during the food preparation - Time management skills during the food preparation - Multi-tasking skills - The skills to perform multiple meal preparation activities simultaneously - The skills for all dishes to be ready to serve at the same time - The skills to schedule activities before and during the meal preparation process - Food storage planning (e.g., storing leftover cooked food in the refrigerator or freezer) - Planning of food preparation quantities (e.g., planned extra food quantities or planned just enough for one meal)

*Adapted from Table 3.1

6.3.1 Academic knowledge dimension

The academic knowledge dimension indicators are the same as the original cooking competence dimensions table. However, additional findings showed that the knowledge of food also includes food composition. In food literacy literature, it was found that to be food literate; an individual must have knowledge of food, food varieties, food groups, food combinations and complementation and composition, as well as preparing tasty and nutritious meals which coincide with the study's findings (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Thomas *et al.*, 2019; Vidgen & Gallegos, 2014).

Food preparation knowledge was similar to the original cooking competence dimensions table and interrelated with food literacy literature in that an individual needs knowledge of food preparation (Rosas *et al.*, 2021; Slater *et al.*, 2018; Truman *et al.*, 2017; Vidgen & Gallegos, 2014). Therefore, knowledge of recipes, including recipe instructions and food terminology as found in the findings and the knowledge to measure and weigh ingredients forms part of food literacy (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Slater *et al.*, 2018; Thomas *et al.*, 2019).

The original cooking competence dimensions table defined knowledge of nutrition for good health, including food additives, special dietary requirements, and appropriate portion sizes. This indicator was measured according to the South African food-based dietary guidelines to determine participants' knowledge of nutrition for good health. It also included special dietary requirements, including food additives, preservatives and knowledge of appropriate portion sizes. This indicator strongly interrelates with food literacy knowledge of which nutritional knowledge is a concurring theme in all food literacy literature (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Slater *et al.*, 2018; Thomas *et al.*, 2019; Vidgen & Gallegos, 2014).

Participants' food trends in fashions differ from the original cooking competence dimensions table, which states it concerns participants' knowledge of foods, food choices and preparation methods in vogue. The findings revealed participants' knowledge of food trends in vogue during the data collection, which included natural food, whole dairy food, lacto-fermented, free-from ingredients, decreased sugar consumption, high-protein diets and fragmentation of the consumer's mind trends. Therefore, participants' knowledge of food trends and fashions was mainly related to perceived nutrition for good health and, therefore, interrelated with the knowledge of nutrition for good health and information sources indicators. Food literacy is interrelated with the last food trend identified, the fragmentation of the consumer's mind, in that food literacy lends itself the ability to discern between reliable and fabricated food and nutrition information. In addition, it is part of the knowledge domain that involves an individual's access to unreliable information and a professional's unpreparedness for food-related expertise (Azevedo Perry *et al.*, 2017; Rosas *et al.*, 2021). Furthermore, the food literacy literature also forms part of the knowledge of nutrition for good health and knowledge of information sources indicators.

The findings revealed that participants' knowledge of where food comes from only related to food origins and location and participants did not indicate any knowledge of food history or seasonality. The knowledge of where food comes from in terms of origins also interrelates with food literacy knowledge (Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Slater *et al.*, 2018; Thomas *et al.*, 2019; Vidgen & Gallegos, 2014).

The original cooking competence dimensions table was developed from literature to reveal that the knowledge of food hygiene and safety practices formed part of academic knowledge and included participants' safe food preparation practices, kitchen and personal hygiene and safety. It was concurrent with the findings. However, additional information was obtained in that participants' food hygiene and safety practices included participant knowledge of cross-contamination, rinsing ingredients, hand washing and cooking foods such as chicken and pork

to the correct cooking temperature. These food hygiene and safety practices are also a prominent theme in food literacy (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Slater *et al.*, 2018; Thomas *et al.*, 2019; Vidgen & Gallegos, 2014).

The initial cooking competence dimensions table defined knowledge of information sources as finding information sources from food labels, electronic data, people, and cookbooks. The study's findings revealed that participants had obtained knowledge from information sources from family and friends, educational institutions, medical practitioners, health promoters, cookbooks, magazines, television, radio, and food product labels. Participants obtained information from these sources on food preparation, health and nutrition and food product knowledge. The individual's background information also played a significant role as it formed the basis of the participants' food information knowledge. The food literacy literature coincides with these findings in that it involves information-seeking competencies related to finding information, interpreting and understanding food labels and includes learning context which involves family, food and nutrition education sources (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Slater *et al.*, 2018; Truman *et al.*, 2017).

6.3.2 Perceptual knowledge dimension

In the first cooking competence dimensions table, the perceptual knowledge dimension included the practical knowledge obtained through memories and past experience, which comprises participants learning from past mistakes during troubleshooting, understanding how to handle ingredients which included participants' sensory perception of understanding the properties of food and assesses the stages of food preparation in terms of senses. It also involves participants' knowledge and reasoning capabilities of food preparation processes in terms of the effect of combining different ingredients and the impact of temperature on ingredients. The findings revealed similar perceptual knowledge in the adapted table. Sensory perception included participants' senses of taste, sight, smell, sound, and tactual senses. Additional knowledge and reasoning capabilities of food preparation processes were found, including the effect of timing and temperature on ingredients. Furthermore, an additional indicator was found: participants' perceptual knowledge relating to exposure to various foods and ingredients. Some perceptual knowledge indicators concur with the food literacy literature, indicating an individual's understanding of handling and working with various ingredients (Vidgen & Gallegos, 2014). However, numerous conceptual knowledge indicators coincide with the food literacy literature described in the next dimension.

6.3.3 Conceptual knowledge dimension

The first conceptual knowledge dimension included participants' ability to conceptualise the outcome of a dish, having good monitoring, observing and adaptation knowledge and evaluating and selecting available and accessible resources. It encompasses an individual's creative and experimenting abilities, improvisation and adapting and substituting abilities. Lastly, conceptual knowledge includes participants' cognitive ability to reproduce a recipe without following instructions. The findings of this study revealed similar results, but additionally, it was found that the participants' evaluation and selection of available and or accessible resources were determined by the participants' time availability, the difficulty level of the meal, the cooks' food preparation ability, the occasion, participants preferences, their dietary requirements, and the available budget. Furthermore, it included the ability to select ingredients that are accessible and available. An additional indicator was found in the importance of participants' ability to reproduce a recipe from illustrations such as images, photographs and videos on social media or television programmes.

The food literacy literature concurs with the findings of this study in that food literacy relates to an individual's ability to prepare food with the desired outcome (Azevedo Perry *et al.*, 2017). It includes evaluating available resources for food preparation that balances needs such as nutrition, taste or hunger with available resources like time, money, abilities or circumstances, developing and selecting foods within a budget, as well as prioritising money for food (Desjardins & Azevedo, 2013; Slater *et al.*, 2018; Vidgen & Gallegos, 2014). Furthermore, it includes the accessibility of resources such as access to grocery stores and kitchen equipment (Azevedo Perry *et al.*, 2017; Vidgen & Gallegos, 2014). It also includes the selecting of foods within an individual's food preparation capabilities and time availability, selecting foods for convenience, practicality or economically and according to preferences (Azevedo Perry *et al.*, 2017; Rosas *et al.*, 2021; Slater *et al.*, 2018; Vidgen & Gallegos, 2014). It involves the individual's creative and experimenting abilities in the ability to prepare a variety of recipes and experiment with them, as well as improvising with ingredients and adapting meals from available foods or ingredients (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Vidgen & Gallegos, 2014). The discussion of the cooking skills dimensions follows.

6.3.4 Mechanical skills dimension

The original mechanical skills dimensions indicators included the skills in basic food preparation, food preparation techniques and methods (including active and passive food preparation activities, the skills to operate kitchen equipment and appliances, as well as the skills to use the appropriate kitchen utensils, equipment, or appliances according to the food

preparation activity. The findings revealed concurrent skills in basic food preparation and food preparation techniques and methods (active and passive). However, it was found that it also included food preparation tasks. Furthermore, the food preparation methods, the skills to operate kitchen equipment and appliances and the skills in basic food preparation and food preparation techniques and methods were combined into the indicator, kitchen equipment, appliances, and food preparation methods (active and passive) as the findings revealed that the food preparation methods and use of kitchen equipment and appliances are used in conjunction. The mechanical skills dimension interrelates with the food literacy literature, which indicates an individual's basic food preparation skills, the skills of food preparation techniques and methods, selecting the appropriate cooking equipment according to the food preparation activity and the ability to use kitchen equipment and appliances (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Slater *et al.*, 2018; Vidgen & Gallegos, 2014).

6.3.5 Planning skills dimension

The original planning dimension involved organisational and timing skills and is related to participants' planning and scheduling skills before the food preparation, such as menu-planning, shopping, and purchasing for food skills. Menu-planning skills included considering family dietary requirements, budgeting, household stock, available food products, planning to shop for food and making shopping lists. In addition, shopping and purchasing food skills included sourcing and acquiring food items from a grocery store, 'shopping around', making effective food purchasing decisions, using time effectively during shopping, purchasing food for immediate use and maintaining household food levels. It also related to participants' planning and scheduling skills during the food preparation, such as time management skills while preparing foods, which included multi-tasking skills, such as the skills to perform multiple meal preparation activities simultaneously for all dishes to be ready to serve at the same time as well as to schedule activities before and during the food preparation methods. Lastly, it included participants' food storage planning.

The findings revealed that menu-planning skills were unstructured or semi-structured planning before shopping and purchasing occur but more informal than initially anticipated. Furthermore, shopping skills related to participants shopping monthly, bi-weekly, by destination or 'bread-and-milk' shopping and purchasing skills included participants shopping for specials and discounts and shopping at stores that offer reward programmes and are convenient to make purchases. Additionally, the findings revealed that planning skills are also associated with participants defrosting methods, such as defrosting meat overnight in the refrigerator, defrosting meat in the morning before work and defrosting in the microwave or

basin with hot water during food preparation. Additional food storage planning involved participants storing leftover cooked food in the refrigerator or freezer. An additional indicator revealed participants planning food preparation quantities such as planned extra food quantities or just enough food for one meal.

Food literacy literature concurred with the planning skills dimensions in that participants need organisational planning skills, menu planning skills, shopping and purchasing skills, as well as prioritising time for food preparation and the ability to understand how to store food products (Azevedo Perry *et al.*, 2017; Desjardins & Azevedo, 2013; Rosas *et al.*, 2021; Slater *et al.*, 2018; Vidgen & Gallegos, 2014).

The concluding summary of the cooking competence of white young adult couples residing in Tshwane, South Africa, follows.

6.4 CONCLUDING SUMMARY OF THE COOKING COMPETENCE OF WHITE YOUNG ADULT COUPLES RESIDING IN TSHWANE, SOUTH AFRICA

In exploring the participants cooking competence for this study, it was identified that couples and even individuals had different combinations of indicators of each of the cooking competence dimensions, which formed each couple and participant's unique set of cooking competencies (see **Chapter 5**). The various cooking competence found in the participating couples, each within their own set of external factors such as boundaries (i.e., time constraints, finances, special dietary requirements, and the life stage in the family life cycle) and psycho-social factors (i.e., commensality, family food hierarchy, family gatekeeping and couple dynamics), that influenced their cooking competence. Therefore, it was revealed that participating couples' cooking knowledge and skills were interrelated, and interdependent and each participant's cooking competence differs depending on the external factors that influenced the cooking competence dimensions.

The findings of this study revealed that there are interrelationships and interdependencies between the cooking competence key concepts, dimensions, and related indicators. An adapted conceptual framework was developed and is presented in **Figure 6.1** in the following section.

6.5 ADAPTED CONCEPTUAL FRAMEWORK

The following **Figure 6.1** is visual presentation of the findings of this study.

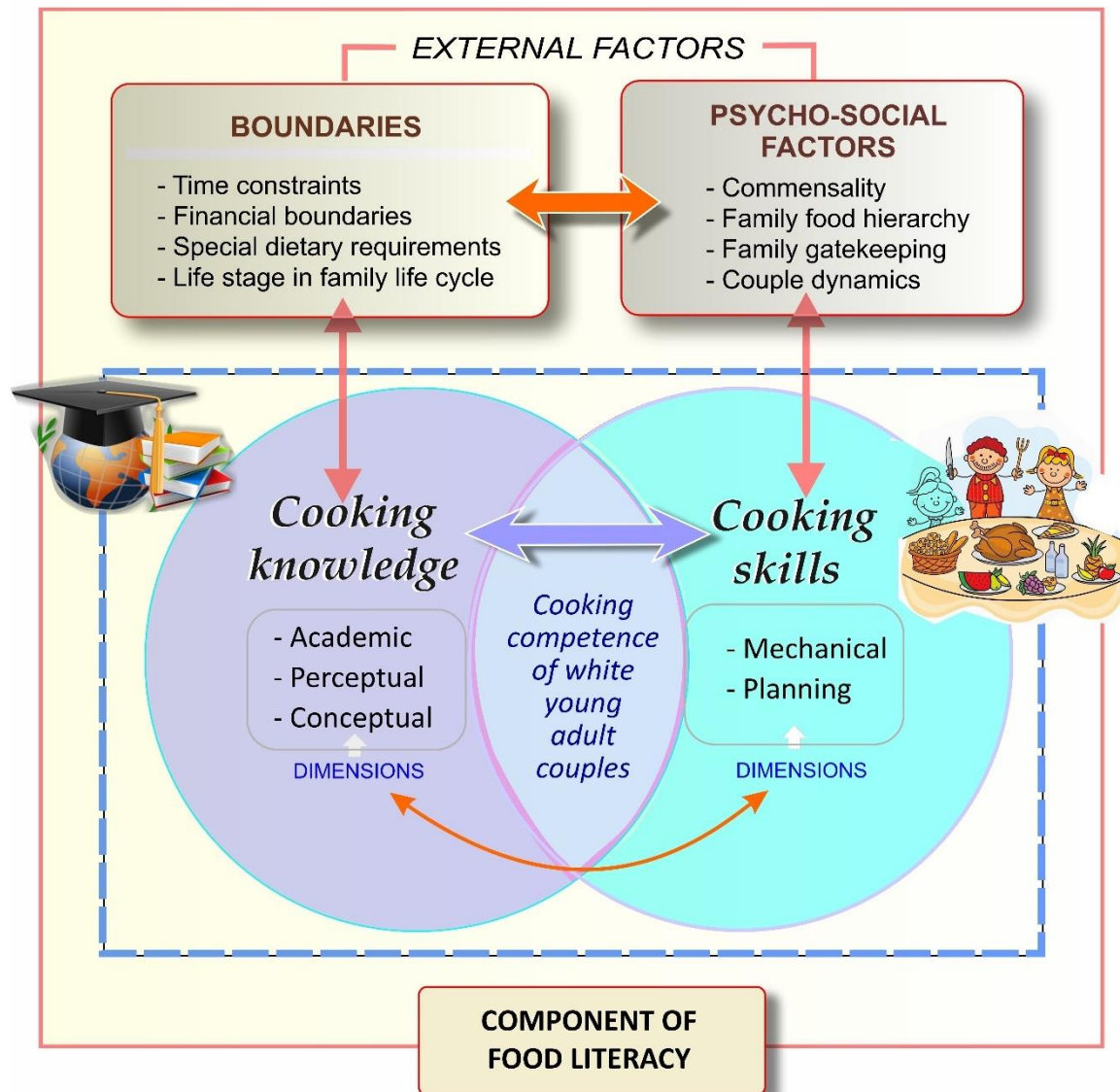


FIGURE 6.1: ADAPTED CONCEPTUAL FRAMEWORK

As stated in the literature, one must have the knowledge to execute the skills. Cooking knowledge and cooking skills were interrelated and interdependent. For instance, **academic knowledge** of how to deep-fry foods is first required to have the **perceptual knowledge** to understand when the oil reaches the optimal temperature to be ready to deep-fry. The **conceptual knowledge** (also known as sophisticated perceptual knowledge) is then required to be able to, for example, improvise, adapt and substitute the deep-frying ingredients or method. Therefore, having the knowledge, the participant can execute the skill, as stated in the literature (**Chapter 2**).

The participant has the **mechanical skills** to use and operate the appropriate kitchen equipment and appliance according to the food preparation method. Using different passive and active **mechanical skills** relates to **planning skills**, where participants plan through multi-tasking skills in which food preparation activities would take place simultaneously.

Furthermore, these cooking knowledge and skill dimensions are also influenced by external factors such as boundaries and psycho-social factors. Boundaries relate to participants' time constraints, financial boundaries, special dietary requirements, and life stages in the family life cycle. Psycho-social factors relate to participants commensality, the family food hierarchy, family gatekeeping and couple dynamics. It was also found that an interconnectedness exists between the boundaries and psycho-social factors.

These external factors would determine the constraints under which the participants can live out their cooking competence. For instance, time constraints can limit the time a participant has to prepare a meal and decide on an alternative meal to what they would have prepared if there were no time constraints on their food preparation. Financial boundaries would limit the ingredients a participant would have liked to prepare food. Special dietary requirements may limit a participant with high blood pressure to change the food preparation method or ingredients they otherwise would have prepared. For instance, having a child or not, the life stage in the family life cycle also influences the type of food to be prepared and the time available to prepare it.

The psycho-social factors, such as commensality, relate to participants wanting to eat dinner together and therefore having to prepare dinner in a limited time frame because of family food hierarchy, such as children that need to eat at a specific time. Therefore, to eat together as a family, the time for food preparation is limited and the participant must adapt their food preparation accordingly. Furthermore, family gatekeeping plays a role where the leading food preparer is in charge of what type of food is purchased within their financial means and the family consume and if more nutritious meals need to be prepared, boundaries such as special dietary requirements influence it. Lastly, couple dynamics, e.g., partner's food preference, cooperation in healthy food consumption, lifestyle, conflict, and frustration, can influence the couple's food preparation and willingness to share responsibilities. The findings showed that boundaries, such as time constraints, influence participants' psycho-social factors. Commensality, financial boundaries, and special dietary requirements interlinked with family gatekeeping and couple dynamics. The life stage in the family life cycle also relates to the family food hierarchy. The participants' cooking competence was influenced by the external factors and the participant's ability to function within these external factors. Therefore, all the cooking knowledge and cooking skills dimensions are interrelated and interdependent and are

influenced by each couple's boundaries and psycho-social factors and thus comprise each individual's unique cooking competence (see **Figure 6.1**).

Finally, from the findings of this study, it was revealed that food literacy encompasses cooking competence and therefore cooking competence forms a part of a component of food literacy, which can be further investigated in future.

The study's contribution to the research field follows.

6.6 STUDY CONTRIBUTION TO THE RESEARCH FIELD

The study aimed to explore, describe, and understand the cooking competence of white young adults residing in Tshwane, South Africa. It provided insight and understanding into the young adults cooking competence and what is happening in the South African setting. Furthermore, to the researcher's knowledge, this was the first study conducted on white young adult couples (aged 22 to 35) in Tshwane and contributed to the limited knowledge on this topic in South Africa.

The study was the first to develop a conceptual framework for young adult couples residing in Tshwane, South Africa. The proposed adapted conceptual framework indicated that cooking competence is complex and intricate and forms part of a component of food literacy. Furthermore, limited research has been done on cooking competence and how it relates to food literacy, contributing to the South African study field.

The methodology was unique in utilising visual ethnography in the form of personal documentation, such as the FDs and photo-elicitation, to obtain data-rich information on cooking competence. The cooking competence dimensions table and conceptual framework of this study could be tested on a larger part of the population or adapted towards other population groups to understand South Africans' cooking competence.

The significance of the study relates to the research outputs and the study's contribution to the research field. The research outputs are attached as **Addendum J**. The methodological reflections of the study follow.

6.7 METHODOLOGICAL REFLECTIONS

The debate regarding the construct of cooking competence created uncertainty around its conceptualisation and operationalisation. For this reason, cooking competence was conceptualised for this study and the related cooking competence literature was reviewed. The cooking competence dimensions table was compiled, from which the conceptual framework was developed as a visual representation of the research process. The conceptual framework guided the study into exploring and describing the current cooking knowledge and cooking skills of the participating couples according to their cooking competence dimensions. Furthermore, the cooking competence dimensions table, and the conceptual framework were adapted to the findings of this study.

The methodological reflections aim to evaluate the study's research approach, strategy, unit of analysis, data collecting techniques and analysis applied and the study's trustworthiness, as this could provide insight for future research conducting similar studies.

6.7.1 Research design and strategy

An explorative and descriptive study on the cooking competence of white young adults was conducted through a qualitative research approach. An ethnographical strategy was selected as most appropriate for this study (see **Chapter 4**). Based on the complexity of cooking competence and the lack of research in South Africa on the concept, it was a practical approach as the researcher could capture the data in a "real-life" setting (Berg, 2008).

6.7.2 Unit of analysis

The study's unit of analysis was the white young adult couples residing in Tshwane, South Africa, as described in **Chapter 4**. Nine participating couples between the ages of 22 and 35 were recruited and were found to be an appropriate sample size due to data saturation, which only happens when no new form of data is obtained from the participants.

6.7.3 Data collection techniques

Without the combination of the semi-structured interviews, FDs and photo-elicitation techniques, the researcher would not have obtained additional information, which would have influenced the accuracy of the data. The FDs alone did not fully reflect how the actual food preparation took place, but through the interviews and the photographs, participants' memory was evoked as to how the actual events took place. Furthermore, information not obtained

through participants' documentation was gained through the researcher's photograph as a stimulus recipe and additional information was found through this recipe and confirmed what participants said.

6.7.4 Data analysis

The qualitative data analysis was developed according to this study's research aims and objectives. It was a challenging process as a large amount of verbatim had to be transcribed and the data filtering took a long time in order to ensure the findings' accuracy. The data coding was done using the *Atlas.ti 8* computer software, which assisted in organising the data during the coding process.

6.7.5 Pitfalls, struggles and recommendations

A discussion of the pitfalls, struggles and recommendations follow. This discussion is related to selecting a location for data collection, time duration of data collection, receiving participants' personal documentation, data collecting techniques, selecting of stimulus recipe, researcher's demographics, transcriptions, peer debriefing and the *Atlas.ti* computer software.

6.7.5.1 Selecting a location for data collection

It was initially decided to conduct the interviews at the Old Agricultural Building on the Hatfield campus of the University of Pretoria. However, unforeseen obstacles such as unrest and strikes at all the South African universities prevented the researcher from conducting the interviews at the university. Furthermore, most participants, especially the YFs, preferred the interviews to be conducted at their residences as this was the most convenient for them. Interview meetings usually took place during weekends or evenings and YFs scheduled interviews after their toddler's bedtime. Therefore, instead of conducting interviews at one location, the researcher had to travel to 17 different locations, which increased travel time that was not initially anticipated, as well as the duration of the overall data-collecting process. However, although not all participants' interviews were conducted at their place of residence, but in hindsight, it contributed to the ethnographical strategy of this study, as the researcher was able to become a part of the participants' social setting. Participants also felt more comfortable in their familiar surroundings, which the researcher believed contributed to the richness of the data obtained. For instance, when enquiring about food products, participants used their kitchen equipment and would show the researcher the food product packaging, type of knives, or kitchen equipment they used. The researcher was also able to make observations relating to the participant's everyday environment and life. Conversely, it must be noted that

there were also some pitfalls in doing the interviews at the participants' residences. First, one of the YFs did not immediately put their child to bed for one of the interviews and therefore there were interruptions for the first bit of the interview, which made the participants and the researcher lose their train of thought.

Furthermore, it is also not recommended that interviews be conducted at restaurants or coffee shops. Three of the 18 interviews were done at restaurants and a coffee shop, and besides interruptions and distractions, it was challenging to transcribe these interviews due to the background noises; therefore, these transcriptions took longer than the others to ensure no data had gone missing. Accordingly, obtaining a venue where the participants feel comfortable but without distractions and interruptions is advised.

6.7.5.2 Time duration of data collection

Initially, the researcher planned data collection according to a schedule stretching over two months. However, the researcher did not anticipate the participants' busy work schedules, holidays, planning their weddings and family time, that made participants unavailable for long periods, which influenced the duration of the data collection considerably. Another struggle was that the researcher anticipated a specific time frame for participants to send back their FDs and photographs. However, reasons such as participants either forgetting to take photographs of their meals prepared, not dining at home or together, or participants having a takeaway, which meant that participants did not submit the FDs and photographs at the initially appointed date. It is therefore recommended, when conducting similar future studies, to be aware of the duration of the data collecting process, as it takes considerably longer than one would anticipate due to circumstances out of the researcher's control.

6.7.5.3 Receiving participants' personal documentation

Some participants did not follow the instructions of giving complete details of the FDs and template provided. The researcher received some FDs with minimal information about how the dishes were prepared. Therefore, these interviews took longer than the participants who completed their FDs as requested. The researcher had to enquire about the food preparation details not indicated in the FDs to obtain a complete picture of the meals prepared. The researcher also found that due to the time limitations and busy schedules of the participants, they were in a hurry to complete the FDs. Therefore, the researcher would advise similar studies to be conducted when following up on the progress of the FDs to remind the participants of the requirements discussed in the first contact session, which may shorten the interviews.

6.7.5.4 Data collecting techniques

The combination of the semi-structured interviews, FDs and photo-elicitation (i.e., participants' photographs and stimulus recipe) were an excellent combination of data-collecting techniques. As stated above, participants were allowed to fill in the blanks on their FDs during the interviews. Some essential information not disclosed in the interviews by the participants, was obtained from the photographs. For instance, the participants would indicate they prepared a nutritious meal but from inspecting the photograph they provided, the researcher noticed additional condiments added to their dishes, which were energy-dense and high in saturated fats, sugar, and salts, which then implicates the dish's real nutritional value. It is also an indication that the perceptions between participants of what is 'nutritious', are very different.

Furthermore, most participants perceived their food consumption to be healthy, but from the photographs, the researcher noticed that most participants consumed dinners low in dietary fibre and vegetables. The researcher would not have been able to identify these 'real-life' situations without photo-elicitation. Therefore, no additional insight would have been gained into the participants' real-life circumstances. Using solely quantitative methods, such as questionnaires, would not have represented the actual cooking competence of this study.

Also, some participants provided more than five FD entries and one couple provided step-by-step photographs during food preparations. The researcher found this very helpful in the data analysis, providing a clearer picture of how the participants prepared their meals. Therefore, it is advised for future research to ask participants to provide step-by-step photographs instead of only the end result, as this can assist with a clearer overall picture of the participants' cooking competencies.

6.7.5.5 Selecting of stimulus recipe

The researcher took great care in selecting a recipe from a South African food magazine where the participants could reasonably identify the cooking competence dimensions. In hindsight, the researcher believed a recipe known within the general culture and the participants' general domestic food preparation abilities would have been more efficient. This technique should result in obtaining data-rich information, but in fact, the researcher found that the chosen recipe was foreign to the participants.

This technique could have been utilised more effectively should it have been, for example, a traditional South African recipe, such as [†]*bobotie* or [†]*souttert*.

6.7.5.6 Researcher's demographics

The researcher found that being of the same demographics as the participants ensured that they were more at ease with her. The researcher believes that valuable information was obtained, which otherwise would not have been the case, should the researcher be of another cultural background or age group. It created a relaxed atmosphere during the interviews. However, it did prevent the researcher from taking a neutral stance and a value-free inquiry (see 4.2.3). Sometimes she got so immersed in conversation that, at times, it was challenging to keep her personal feelings and opinions at bay due to the social relationships that formed, as described by Denzin and Lincoln (2018) and Schurink *et al.* (2021). The researcher rectified this by omitting any data that was not objective. Since this was the first time the researcher had conducted this type of interview, she could now identify the pitfalls and know what to look out for to prevent similar situations to reoccur in the future.

6.7.5.7 Transcriptions

Although the transcriptions were time-consuming, it is recommended that researchers do these themselves rather than through an external party (see 4.5.7). Because the researcher was conducting the interviews herself, the data analysis already started taking place during transcribing. The researcher was able to make additional notes and conclusions during the transcriptions, remember the observations during conversations and make additional notes as the researcher's thoughts were recollecting the interviews. Also, by transcribing the first interviews, the researcher could depict missing information or information that needed more elaboration for clarity, which was then included in the second interview. Furthermore, the researcher was able to start identifying themes and developing possible codes.

6.7.5.8 Peer debriefing

Peer debriefing was a helpful data validation process as the researcher believed it contributed valuable insight and another perspective to the findings. It must be noted, though, that the peer debriefing was time-consuming, and the researcher had to rely on the availability of the peer debriefers.

6.7.5.9 Atlas.ti 8 computer software programme

The researcher found the qualitative computer software user-friendly and beneficial in sorting the data.

6.8 TRUSTWORTHINESS

Creswell and Creswell (2018:275) state that qualitative research's strength lies in its validity, as the researcher and the participants determine if the findings are correct.

The study must comply with measures to ensure the data's trustworthiness, authenticity, and credibility. Using multiple approaches will contribute to acquiring and assuring the trustworthiness of the findings (Creswell & Creswell, 2018:275). Therefore, to ensure the soundness of a qualitative study, the research must be measured through four criteria: credibility, transferability, dependability, and conformability (Clark *et al.*, 2021).

6.8.1 Credibility

A qualitative study's credibility (internal validity) involves the data's trustworthiness from the participant's perspective (Kumar, 2019). Therefore, the participants must be in concordance with the researcher and confirm that the researcher accurately recorded and portrayed their perceptions, experiences, feelings, and beliefs (Kumar, 2019).

The credibility of this qualitative study was improved by using the following approaches:

6.8.2 Triangulation

Data were obtained from nine different participating couples having three contact sessions with each couple for *coherent justification for themes*, which contributed to triangulation (Creswell & Creswell, 2018:274). Furthermore, the use of various data collecting techniques, such as the researcher in person, as a research instrument, semi-structured interviews, personal documentation (i.e., FDs), and audiovisual material such as photo-elicitation as stimulus techniques (i.e., participants' photographs of dinner meals and a predetermined recipe with a photograph) added depth and breadth to the findings and complemented each other, enhanced the triangulation of the study. Using the data collecting techniques mentioned above contributed to the extensiveness of the data on cooking competence as a whole. In addition, the researcher acted as a research instrument and ensured she was knowledgeable in conducting the interviews. Audio recordings and observations captured through field notes were used during the interviews to ensure referential adequacy. The data were analysed by using the *Atlas.ti 8* data analysis programme and a peer debriefer to assist with interpreting the data (Creswell & Creswell, 2018:275).

6.8.3 Peer debriefing

Having a peer debriefer to assist in interpreting the data enhances the accuracy of the findings, which adds credibility to the study (Creswell & Creswell, 2018:275). As previously discussed (see 4.6.4.3), peer debriefing was done as part of the data analysis verification process.

6.8.4 Member checks

It is said that the participant is the best 'judge' of whether the findings reflect the information they provided correctly (Clark *et al.*, 2021; Kumar, 2019). Therefore, the purpose of the third contact session was that participants could verify and confirm the findings and interpretations of the information they provided. Furthermore, it ensured that any misunderstandings and misinterpretations were pointed out and corrected to ensure the accuracy of the findings, contributing to the study's credibility (Creswell & Creswell, 2018:274). In many instances, further elaborations were given during the member checks, which contributed to a deeper insight into the participants' cooking competencies and added richness to the data.

6.8.5 The use of thick descriptions

Rich, thick, detailed descriptions of the research setting, process, data analysis and findings contribute to the study's credibility (Creswell & Creswell, 2018:274).

6.8.6 Discrepant information

As real life consists of different perspectives, discrepant information may emerge, adding credibility to a study (Creswell & Creswell, 2018:275). Therefore, the findings and discussion chapters shared any discrepant information from the findings contradictory to a conventional view of a theme. For instance, literature stated that South Africans traditionally view household tasks as a women's responsibility. However, the findings of this study revealed that only one participating couple had this view, and all the other couples shared these responsibilities.

6.8.7 Transferability

Transferability is quite challenging to determine in qualitative studies as it pertains to the ability to transfer the research findings from one study to another to the extent to which the research can be replicated (De Vos, 2011:345, 346; Kumar, 2019). Repeating a qualitative study entails good record-keeping of the qualitative processes, such as a detailed protocol for documenting the research (Creswell & Creswell, 2018:276). To ensure transferability, a qualitative study must provide as much detail as possible regarding how the study was conducted.

For this study, the researcher developed a conceptual framework, which acts as a blueprint and sets the study's theoretical parameters (De Vos, 2011:346). The researcher can refer to the conceptual framework to demonstrate how the data was collected and analysed (see **Chapter 3**).

To further strengthen the study's transferability, the researcher used data triangulation by implementing more than one data collection technique, as previously discussed (Clark *et al.*, 2021; De Vos, 2011:346). The study is explained in detail, with extra information added in the addenda to keep the study's replicability and comprehensibility as straightforward as possible. The various data collection methods and techniques ensured the gathering of saturated and detailed information. Nine participating couples were selected to partake in the study. After 18 interviews, the researcher was convinced data saturation had occurred and the interview process was stopped. Furthermore, purposive sampling methods were chosen to obtain participants who would provide rich data in line with the specified aims of the study to strengthen the research.

6.8.8 Dependability

Qualitative researchers seek dependability by determining how reliable or dependable the research approach of the study is (Creswell & Creswell, 2018:275). This study achieved dependability through detailed research documentation, procedures, and triangulation methods, including member checking and peer debriefing. Furthermore, member checking verified the dependability of data and transcriptions as correct. The codes assigned to the data were cross-checked and the results were compared independently through peer debriefing. In addition, a qualitative computer software package, *Atlas.ti 8*, was utilised (Creswell & Creswell, 2018:275). These methods of strengthening the study's dependability have already been discussed previously.

6.8.9 Conformability

Conformability is the process where the study results are validated and verified by someone other than the researcher (De Vos, 2011:347; Kumar, 2019), therefore, ensuring the research findings were done objectively (Clark *et al.*, 2021; De Vos, 2011:347). As already discussed, peer debriefing was done with the co-study leader and a Consumer Science Master's student. The raw data were recorded through audio recordings, field notes, FDs, and photo-elicitation. Raw documentation and data analysis are available to the reader upon request. The researcher kept a detailed audit trail, as seen throughout the chapter.

Furthermore, qualitative researchers are intensely involved with their participants, creating various "... strategic, ethical and personal issues ..." in the research process (Creswell &

Creswell, 2018:260). In this study, this issue is addressed through *reflexivity*. Reflexivity requires two essential aspects: the researcher's past experiences that connect him or her to the research study and second how these experiences shape the researcher's interpretations (Creswell & Creswell, 2018:260). It was addressed by the researcher as a research instrument and by writing comments and memos during the data analysis.

These practices have been applied to the best of the researcher's ability to enhance the study's trustworthiness. The researcher strived to present the study honestly and reflect on the actual scope.

6.9 LIMITATIONS OF THE STUDY

The study's findings were limited to a pre-pandemic era as data was collected prior to the COVID-19 pandemic. Data was collected from a tiny sample with unique characteristics. Therefore, the researcher could not generalise these findings to the broader population. The lack of research experience posed a limitation and research bias is unavoidable due to the societal research setting during the data collection process.

Furthermore, a few participants mentioned that it was the first time they had tried a recipe, which could mean that participants did not always prepare recipes they usually would and might want to 'impress' the researcher. One partner of a participating couple mentioned that she wished these types of interviews would be conducted more often, as her husband made all this great food.

It was also found that participants might have felt daunted by the researcher in providing maybe 'incorrect' information and fear of judgement. With one participating couple, in particular, the researcher had difficulty obtaining information from them. Even with probing, participants would still not elaborate, and the researcher found herself asking more leading questions. Therefore, not much of this couple's information was used, as the leading questions were not included in the data analysis.

6.10 RECOMMENDATIONS FOR FUTURE RESEARCH

This study was limited to the findings of a very small research sample. Therefore, this study should be expanded with a larger sample size to substantiate the findings of this study. Since the data was collected prior to the COVID-19 pandemic, there is scope to study the impact the pandemic had on the cooking competence of young adult couples. Also, there is the opportunity to compare the pre- and post-pandemic cooking competence of these individuals. In addition, there has been a rapid progression in technology such as Zoom video conferencing and therefore replicating this study using the same visual ethnography data collection methods on different age and cultural groups in South Africa and across the globe poses a real possibility.

Furthermore, how young adult couples cooking competence have changed in a post-pandemic world would be of value as numerous people were forced to start preparing food again from home during the global lockdown, influencing their cooking competence. Likewise, there is an opportunity for further research on the effect on peoples cooking competence relating to the growth in online shopping and food home-delivery trends to overcome perceived time constraints. Also, the effect that social media and influencers have on the food trends and fashions people follow, which changes at an accelerating pace and influences people's cooking competence.

In addition, research into the contribution of cooking competence to food literacy could be explored, as an outcome of this study was that cooking competence forms part of a component of food literacy but has not been investigated.

6.11 CLOSING SUMMARY

This chapter concluded the study by summarising the key research findings related to the research aims and questions and the value and contribution thereof. It also reviewed the study's limitations and proposed opportunities for future research.

It was found that cooking competence is an intricate and complex concept that is interrelated and interdependent and forms part of a component of food literacy. Therefore, cooking competence is determined according to the participant's background, taught knowledge, and experiences, and reveals to which degree they have been exposed. External factors that participants have no control over also determine the participant's cooking competence. Consequently, from gaining insight and understanding into the white young adult couples' cooking competence, the researcher found that each participating couple was competent within their environment.

This is my invariable advice to people:

Learn how to cook –

try new recipes, learn from your mistakes,

be fearless, and above all have fun.

– Julia Child

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ADDENDUM A:

DETAILED DATA COLLECTION OF PARTICIPANTS

Locations visited during data collection and the justification and reasoning thereof.

LIFE STAGE IN FAMILY LIFE CYCLE: YOUNG FAMILIES				
<i>PARTICIPATING COUPLE 1</i>				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Tucson Spur Steak Ranch restaurant	Email	Participants' residence	Wild Hawk Spur Steak Ranch restaurant
Region in Tshwane	Region 6: Rietvalleirand	N/A	Region 6: Wingate Park	Region 4: Irene
Date	Friday, 18 December 2015	Wednesday, 6 January 2016	Sunday, 27 March 2016	Sunday, 24 April 2016
Time	17:00	N/A	15:30	09:30
Duration of meetings	± 00:30:00	N/A	01:11:44	00:36:00
Justification & reasoning	Participants had a toddler in day care and requested the first contact session at a nearby restaurant after work before collecting their child from day care. Due to the participants' busy schedules and annual holidays, the personal documentation was submitted via email and not within the allocated time frame. The second contact session the participants requested to take place at the participants' place of residence on a Sunday afternoon, as it would be more comfortable for them with their toddler. The participants scheduled the third contact session at a local family-friendly restaurant for breakfast Sunday morning.			

LIFE STAGE IN FAMILY LIFE CYCLE: YOUNG FAMILIES				
PARTICIPATING COUPLE 2				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Hazel Food Market	Email & WhatsApp	Participants' residence	Participants' residence
Region in Tshwane	Region 3: Menlo Park	N/A	Region 3: Monument Park	Region 3: Monument Park
Date	Saturday, 21 May 2016	Thursday, 2 June 2016	Monday, 6 June 2016	Monday, 3 October 2016
Time	10:00	N/A	20:00	20:00
Duration of meetings	± 00:30:00	N/A	01:15:37	00:28:34
Justification & reasoning	The first contact session the participants scheduled was at the Hazel Food Market. The participants both worked in retail, it was a Saturday, and neither of them had to work, which they usually do, and they wanted family time with their toddler. The participants submitted their personal documentation via email and one additional photograph through WhatsApp. The participants scheduled the second and third contact sessions at their residence after their toddler had gone to bed, as this was the most comfortable option for them. The delay in scheduling the third contact session resulted from the participant's busy schedules.			

LIFE STAGE IN FAMILY LIFE CYCLE: YOUNG FAMILIES				
<i>PARTICIPATING COUPLE 3</i>				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Participants' residence	Email	Participants' residence	Participants' residence
Region in Tshwane	Region 2: Sinoville	N/A	Region 2: Sinoville	Region 2: Sinoville
Date	Monday, 23 May 2016	Monday, 06 June 2016	Thursday, 9 June 2016	Wednesday, 5 October 2016
Time	20:00	N/A	20:00	20:00
Duration of meetings	± 00:30:00	N/A	01:27:57	00:50:38
Justification & reasoning	All three contact sessions were conducted at the participating couple's residence. The husband mainly worked from home, and the wife ran her business from home, therefore a convenient location for them. Furthermore, the participants scheduled the meetings from 20:00 as they have a toddler they want to put in bed before the interviews. The personal documentation was received via email. The delay between the second and third contact sessions was due to the participant's busy schedules and annual holidays.			

LIFE STAGE IN FAMILY LIFE CYCLE: YOUNG COUPLES				
PARTICIPATING COUPLE 4				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured Interview	Semi-structured Interview
Location	Burning Arrow Spur Steak Ranch Restaurant	Email	University of Pretoria, Old Agricultural Building, Tea Room	Burning Arrow Spur Steak Ranch Restaurant
Region in Tshwane	Region 3: Queenswood	N/A	Region 3: Hatfield	Region 3: Queenswood
Date	Monday, 23 May 2016	Friday, 3 June 2016, to Wednesday, 8 June 2016	Thursday, 9 June 2016	Saturday, 5 November 2016
Time	16:30	N/A	16:30	11:00
Duration of meetings	± 00:30:00	N/A	01:00:59	00:34:36
Justification & reasoning	The first and third contact session was scheduled at a restaurant of the participating couple's choice. It was situated between the Gautrain station in Hatfield and the participant's residence. The husband took the Gautrain to Johannesburg for work, and his wife collected him after work. The participants sent their personal documentation via email over five days. The University of Pretoria is situated a few blocks from the Gautrain station and was suitable for conducting the second contact session interview due to the participants' commuting arrangements. The tearoom was the best option as most personnel had left. Furthermore, it was a comfortable and quiet but informal space to make the participants feel as comfortable as possible. However, the last contact session had to be scheduled elsewhere, as there was unrest at the university. The time frame between the first and last contact session was due to the wife having her post-graduate examinations and being unable to conduct the interview sooner.			

LIFE STAGE IN FAMILY LIFE CYCLE: YOUNG COUPLES				
PARTICIPATING COUPLE 5				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Lucky Bread Company restaurant	Email	Participants' residence	Participants' residence
Region in Tshwane	Region 3: Brooklyn	N/A	Region 6: Faerie Glen	Region 6: Faerie Glen
Date	Monday, 23 May 2016	Thursday, 2 June 2016	Sunday, 5 June 2016	Sunday, 23 October 2016
Time	12:00	N/A	12:00	13:30
Duration of meetings	± 00:30:00	N/A	01:37:07	00:34:54
Justification & reasoning	The first contact session the participating couple scheduled was during their lunch hour. Both participants worked near the Brooklyn Mall, and the couple would frequently meet each other there for lunch and therefore decided on this location. The personal documentation was sent via email to the researcher. The second and third contact session was scheduled at the participants' residence on Sunday afternoons. The extended period between contact sessions two and three was because the participants rented out their house on AirBnB™ at that time and commuted between Kempton Park and Pretoria, which made it difficult for them to schedule contact session three.			

LIFE STAGE IN FAMILY LIFE CYCLE: YOUNG COUPLES				
PARTICIPATING COUPLE 6				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Parrots Restaurant and Café	Email & WhatsApp	Participants' residence	Participants' residence
Region in Tshwane	Region 4: Centurion	N/A	Region 4: Wierda Park	Region 4: Wierda Park
Date	Thursday, 26 May 2016	Tuesday 31 May 2016 to Tuesday 7 June 2016	Thursday, 09 June 2016	Wednesday, 19 October 2016
Time	18:00	N/A	17:00	17:00
Duration of meetings	± 00:30:00	N/A	01:24:57	00:25:42
Justification & reasoning	The participating couple scheduled the first contact session after work at a restaurant in Centurion Mall near the husbands' workplace. Over a week, the participants sent their personal documentation via email to the researcher and the accompanying photographs via WhatsApp. After work, the second and third contact sessions were scheduled at the participant's residence. The wife had her own business and worked from home; therefore, it was best suited for the participants to schedule the interviews at their residence. The delay between the second and third contact sessions was due to the participants' busy schedules and the July holidays.			

LIFE STAGE IN FAMILY LIFE CYCLE: YOUNG COUPLES				
PARTICIPATING COUPLE 7				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Grafters Tavern	Email	Participants' residence	Participants' residence
Region in Tshwane	Region 6: Newlands	N/A	Region 6: Waterkloof Park	Region 6: Waterkloof Park
Date	Wednesday, 25 May 2016	Monday, 1 August 2016	Thursday, 11 August 2016	Sunday, 18 September 2016
Time	17:00	N/A	19:00	11:00
Duration of meetings	± 00:30:00	N/A	01:10:39	00:21:05
Justification & reasoning	Participating couple number seven was the most difficult to schedule appointments with as both had busy work schedules and demanding careers that kept them occupied even in the evenings. The participating couple rarely dined together, and during the time of the interviews, it was a particularly busy time for them. Therefore, there was a delay in sending the personal documentation via email to the researcher. The participants requested to schedule the first contact session at a bar after work where they were meeting friends, one of the rare occasions both had an open evening. Contact sessions two and three were scheduled at the participants' residences, one in the evening after work and the other on a Sunday morning. It was determined according to when the participants were available and at home together.			

LIFE STAGE IN FAMILY LIFE CYCLE: COHABITATORS				
<i>PARTICIPATING COUPLE 8</i>				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Fego Café	Email	Participants' residence	Participants' residence
Region in Tshwane	Region 4: Irene	N/A	Region 4: Highveld	Region 4: Highveld
Date	Tuesday, 23 August 2016	Tuesday, 20 September 2016	Wednesday, 21 September 2016	Monday, 24 October 2016
Time	17:00	N/A	19:00	17:00
Duration of meetings	± 00:30:00	N/A	01:37:52	00:13:12
Justification & reasoning	The participants scheduled the first contact session at a local coffee shop between the participants' workplace and residence. The personal documentation was sent to the researcher via email. The second and third contact sessions were scheduled after work at the participant's residence. The participants were planning their wedding, and therefore, they delayed submitting their personal documentation. The contact sessions were scheduled to accommodate the participants when it would be most convenient for them.			

LIFE STAGE IN FAMILY LIFE CYCLE: COHABITATORS				
PARTICIPATING COUPLE 9				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Fego Café	Email	Participants' residence	Beans About Coffee shop
Region in Tshwane	Region 4: Irene	N/A	Region 6: Zwavelpoort	Region 4: Irene
Date	Saturday, 20 August 2016	Thursday, 01 September 2016	Saturday, 17 September 2016	Saturday, 29 October 2016
Time	11:00	N/A	11:00	11:00
Duration of meetings	± 00:30:00	N/A	01:17:20	00:12:39
Justification & reasoning	The first contact session the participants scheduled was a Saturday morning at a coffee shop near friends they would visit after the contact session. The participants sent their personal documentation via email. The participants scheduled contact session two at their residence and contact session three again at a coffee shop. The participants scheduled the contact session on Saturday mornings due to their busy schedules during the week.			

WITHDRAWN FROM STUDY				
PARTICIPATING COUPLE 10				
Data collection process	1 st contact session	Submission of personal documentation	2 nd contact session	3 rd contact session
Type	Information & consent session	FDs & participants' photographs	Semi-structured interview	Semi-structured interview
Location	Coco Bistro Restaurant	N/A	N/A	N/A
Region in Tshwane	Region 6: Erasmuskloof	N/A	N/A	N/A
Date	Thursday, 02 June, 2016	N/A	N/A	N/A
Time	17:00	N/A	N/A	N/A
Duration of meetings	± 00:30:00	N/A	N/A	N/A
Justification & reasoning	The participants met the researcher for the first contact session at a Bistro near their residence after work. The participants agreed to participate in the research and completed the consent forms. However, the participants contacted the researcher to withdraw from the research as they unexpectedly received clearance to immigrate to New Zealand and could not participate further.			

ADDENDUM B:
FOOD DIARY TEMPLATE

Proposed FD template participants emailed to participants.

MEAL 1				
Recipe:	Ingredients:	Amounts, measurements (estimate):	Detailed recipe procedure (exactly as you did it):	Equipment used:
MEAL 2				
Recipe:	Ingredients:	Amounts, measurements (estimate):	Detailed recipe procedure (exactly as you did it):	Equipment used (specify brand where possible):
MEAL 3				
Recipe:	Ingredients:	Amounts, measurements (estimate):	Detailed recipe procedure (exactly as you did it):	Equipment used (specify brand where possible):
MEAL 4				
Recipe:	Ingredients:	Amounts, measurements (estimate):	Detailed recipe procedure (exactly as you did it):	Equipment used (specify brand where possible):
MEAL 5				
Recipe:	Ingredients:	Amounts, measurements (estimate):	Detailed recipe procedure (exactly as you did it):	Equipment used (specify brand where possible):

ADDENDUM C: PERSONAL DOCUMENTATION

FDs and photo-elicitation (participant photographs).
All Afrikaans recipes were directly translated into English.

Young Family No. 1				
Meal 1				
Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Macaroni & Cheese	Milk Water Butter Knorr's™ Mac & Cheese Ham Sweet chilli sauce Cheese, grated Black pepper	None provided	1. Boil milk, water & butter on stove (high heat). 2. Stir until it starts boiling. 3. Add Knorr's™ Mac Cheese & reduce the heat. 4. Stir the mixture for about 8 minutes until the sauce starts to thicken & paste is tender. 5. Cut ham into small cubes & add to mixture. 6. Add Sweet Chili Sauce for extra flavour. 7. Cool down slightly & pour mixture into oven bowl with grated cheese on top. 8. Bake in oven on 180°C for about 5 minutes (until cheese starts melting). 9. Serve with black pepper on top.	Stove Oven bowl Oven

PHOTOGRAPH



Young Family No. 1

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Homemade Pizza	Chicken stir-fry Salt Curry powder Boiling water Garlic Chutney Onions Cheddar cheese	None provided	1. Cook chicken stir-fry on stove. 2. Add chicken, salt & curry powder (mixed with boiled water). 3. Place pizza bases on oven shelf covered with foil. 4. Smear bases with garlic & chutney. 5. Cut onion very fine & cook slightly. 6. Pour onions over pizza bases. 7. Slightly snip up chicken & place on top onions. 8. Grate cheddar cheese & pour over chicken. 9. Bake in oven until cooked (about 15 min).	Stove Foil Oven shelf

PHOTOGRAPH



Young Family No. 1

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Chicken & Salad	Chicken breasts ¹¹ Peri-Peri sauce Tomato Cucumber Feta Avocado Mayonnaise	None provided	1. Defrost frozen chicken breasts. 2. Place in oven for 20-30 minutes at 180°C. 3. Pour Peri-Peri sauce over in between. 4. Make mixed salad consisting of tomato, cucumber, feta & avo (& mayo).	Oven

PHOTOGRAPH



¹¹ The participant could not remember the name for buffalo wings and therefore wrote chicken breasts.

Young Family No. 1

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Hamburgers	Hamburger patties Buns Butter Cheese Onion Tomato Spur™ sauce BBQ sauce	None provided	1. Fry pre-prepared hamburger patties on stove. 2. Cut buns & spread butter. 3. Every burger gets a slice of cheese, onion & tomato. 4. Sauce is placed on each burger (Spur™ sauce & BBQ sauce).	Stove

PHOTOGRAPH



Young Family No. 1

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Beef Chinese & Rice	Jasmine rice Onions Beef Chinese BBQ sauce Peri-Peri sauce Cheese	None provided	1. Cook jasmine rice in steamer. 2. Roast onions in pan until cooked. 3. Roast beef Chinese with onions until cooked. 4. Add BBQ sauce & Peri-Peri sauce. 5. Serve with sprinkled cheese on top.	Steamer

PHOTOGRAPH



Young Family No. 2

Meal 1

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
None provided	White rice Water Game mince Koo™ canned curry vegetables Pattypans Carrots Olive oil Chutney Mayonnaise	None provided.	1. White rice boiled in water, game mince & Koo™ canned curry vegetables. 2. Pattypans & carrots cooked in water & fried in a little olive oil. 3. Together with chutney & mayonnaise.	None provided.

PHOTOGRAPH



Young Family No. 2

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
None provided	Leftover white rice Chicken strips Olive oil Tomatoes Carrots Mushrooms Baby maize Sweet & sour sauce	None provided.	1. Leftover white rice and chicken strips roasted in pan with a little olive oil. 2. With tomatoes, carrot strips, mushrooms & baby maize. 3. Together with a sweet & sour sauce.	Pan

PHOTOGRAPH

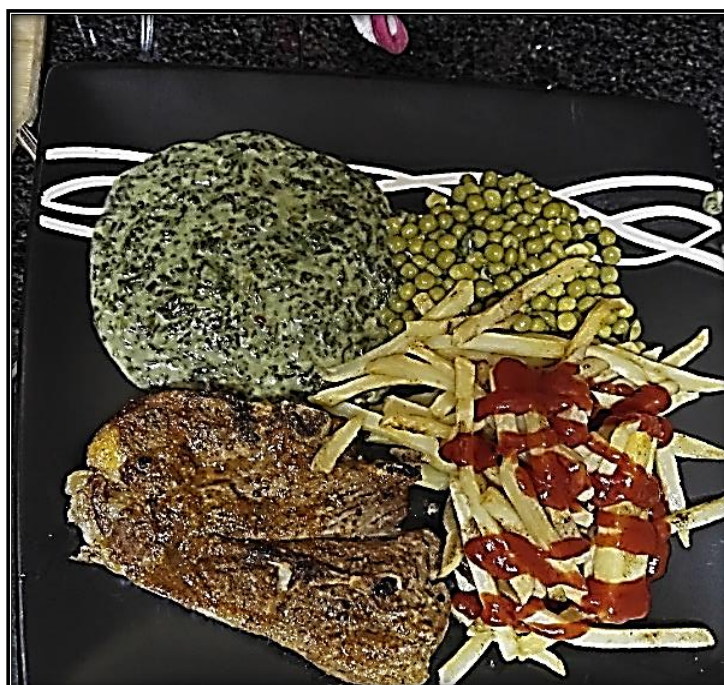


Young Family No. 2

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
None provided	Lamb chops Spices McCain™ oven chips Surfmaid™ tinned peas Creamy Spinach & Feta packet Tomato sauce	None provided.	1. Roasted lamb chops in the air fryer with spices over. 2. McCain™ oven chips with chops made in air fryer. 3. Surfmaid™ peas from can. 4. Creamy Spinach & Feta packet heated in microwave. 5. Tomato Sauce.	Air fryer Microwave

PHOTOGRAPH



Young Family No. 2

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
None provided	I & J™ crumbed hake fish portions Roasted vegetables Potatoes Spur™ pink sauce Butter Salt	None provided	1. I & J™ crumbed hake fish portions & oven-roast veg made in air fryer. 2. Potatoes steamed in microwave. 3. Along with Spur™ pink sauce, butter & salt.	Air fryer Microwave

PHOTOGRAPH



Young Family No. 2

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Steers™ take-away	King & Prince Steers™ Burger: White bun Flame-grilled beef patty Tomato Lettuce Gherkin Onions Mustard sauce Chips Ice cream with chocolate sauce	None provided	1. Steers take-away. 2. King & Prince Steers™ Burger. 3. (White bun, flame grilled beef patty, tomato, lettuce, gherkin, onions, mustard sauce). 4. Chips (deep fried). 5. Ice cream & chocolate sauce for dessert.	None provided

PHOTOGRAPH



Young Family No. 2

Meal 6

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
None provided	Lamb ribs Lemon Maize Peas Potato bake Cheddar cheese Onions	None provided	1. Roasted lamb ribs with lemon on the fire. 2. Along with maize, peas (just as it is). 3. Potato bake with cheddar cheese & onions.	Open fire

PHOTOGRAPH



Young Family No. 3

Meal 1

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Soup	Minestrone vegetable pre-pack mix soup Beef stock & water Chutney Spices Goulash Rolls	1 litre 500g	1. Slow cooked for the day (eight hours). 2. Then blended for thickness. 3. Served with rolls.	Slow cooker

PHOTOGRAPH

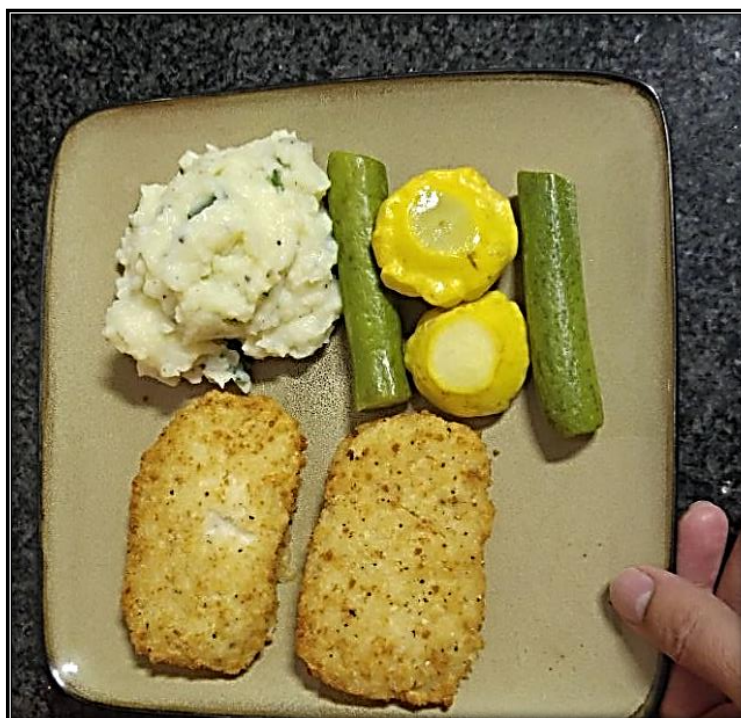


Young Family No. 3

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Fish, mash & steam veg	Fried hake fillets Mash with spring onion Steamed veg	500g	1. Hake was done in the oven. 2. Potatoes being boiled & mashed. 3. Veg steamed.	Oven

PHOTOGRAPH



Young Family No. 3

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Shrimp & Bacon Pasta	Shrimp	400g	1. Pan fry the shrimp & bacon (crispy). 2. Cook pasta & drain. 3. Mix & reheat with tomato puree & other ingredients to cook & thicken sauce.	Pan
	Bacon	250g		
	Cocktail tomatoes			
	Tomato puree	2 tsp		
	Sugar			
	Chutney			
	Sweet white wine			
	Noodles	500g		
	Fresh rocket leaves			

PHOTOGRAPH



Young Family No. 3

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Chicken Schnitzel with Salad & Veg	Woolworths™ chicken schnitzel Greek salad with feta Woolworths™ steam veg Microwaved baby potato	600g	1. Bake chicken in oven & steam veg for 15 minutes. 2. Served with the baby potatoes that has been microwaved.	Oven Microwave

PHOTOGRAPH



Young Family No. 3

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Tuna filled pancakes	Readymade frozen pancakes Tuna Cheese Onions Peppadew™ Greek salad	None provided	1. Readymade frozen pancakes. 2. Tuna filling. 2.1. Tuna, cheese, onions, Peppadew™. 3. Baked in oven. 4. Served with Greek side salad.	Oven

PHOTOGRAPH



Young Family No. 3

Meal 6

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Chicken Fillets with Cream Cheese wrapped in Bacon	Chicken fillets Philadelphia cheese Streaky bacon Cheese Broccoli ¹² Cauliflower Baked potato	None provided	1. Pan fry chicken fillets until brown. 2. Cut open & fill with Philadelphia cheese. 3. Wrap in bacon & oven bake for 30 minutes. 4. Served with fresh steamed veg & baked potato.	Pan Oven

PHOTOGRAPH



¹² Participant ate broccoli before taking the photograph.

Young Couple No. 4

Meal 1

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Curry & Rice	Basmati rice Spice for rice Lean mince Curry powder Mince powder Potatoes Homemade chilli sauce	None provided	1. It was just basmati rice with spice for rice, lean mince, curry powder, mince powder & potatoes. 2. With a little bit of homemade chilli sauce.	None provided

PHOTOGRAPH



Young Couple No. 4

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Penne Pasta with Bacon	Penne pasta Bacon <u>White sauce:</u> Milk Butter Flour Mozzarella cheese White cheese Parsley	None provided	1. This is our favourite to prepare. 2. It is penne pasta with fried bacon. 3. White sauce consisting of milk, butter, flour, mozzarella & white cheese & 4. Finely chopped parsley.	None provided

PHOTOGRAPH



Young Couple No. 4				
Meal 3				
Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
End of Month 'Gourmet' Dish	Oven baked fish Chips	None provided	1. Another end of the month 'gourmet' dish. 2. Very complicated, oven bake fish & chips.	Oven

PHOTOGRAPH



Young Couple No. 4

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Pre-prepared Chicken & Buffalo Wings	Chicken wings Buffalo wings	None provided	1. Our newly discovered favourite. 2. Husband buys the chicken wings & buffalo wings at the butcher that have already been marinated. 3. I just pour them into an oven baking bag & place them in the oven. 4. I was planning to add a salad, but yes, it did not happen!	Oven baking bag Oven

PHOTOGRAPH



Young Couple No. 4

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Oven Bake Chicken Schnitzel with Vegetables	Oven bake chicken schnitzel Vegetables Potatoes Sweet potatoes Olive oil Salt Pepper Paprika Thyme Mozzarella cheese	Not provided	1. This was part of our end of the month food. 2. It is oven baked chicken schnitzel with vegetables steamed in the microwave oven. 3. Then potatoes & sweet potatoes that I mixed in olive oil, salt, pepper, paprika & thyme & then in the oven dish with mozzarella over the top.	Oven Microwave

PHOTOGRAPH



Young Couple No. 5

Meal 1

Recipe	Ingredients	Amounts, measurement s (estimate)	Detailed recipe procedure	Equipment used
<u>Snack for dinner:</u> Rice Crackers with Medium Fat Cream Cheese & Sweet Chilli Sauce <u>Main course:</u> Vetkoek with Minced Meat	Snack for dinner:			None provided
	Rice crackers	None provided	None provided	
	Medium fat cream cheese			
	Sweet chilli sauce			
	Main course:			
	Onion	1	1. Onion & garlic cloves finely chopped & fried in a bit of olive oil.	
	Garlic cloves	2	2. Minced meat was added & roasted to light brown, add salt & pepper to taste.	
	Olive oil	A bit	3. Tinned whole tomatoes & tomato puree are added.	
	Mince meat	500g	4. Meat is cooked for ± 40min.	
	Salt	To taste	5. Meanwhile, the vetkoek was prepared (the dough was purchased from Spar™).	
	Pepper	To taste	6. Sunflower oil was heated in a large pot, break off pieces from the dough & roll into balls as large as palm & press flat a bit.	
	Whole tinned tomatoes	1	7. Bake balls in warm oil to golden brown.	
	Tomato puree	50g	8. Slice cooked vetkoek & place mince inside.	
	Spar™ vetkoek dough		9. Grated cheese (Cheddar) can be spread over the top.	
	Sunflower oil	750ml	10. Other variations for vetkoek were Bovril & cheese & honey & cheese.	
	Cheddar cheese			
	Bovril			
	Honey			
	Beverages:			
	Chardonnay	1 glass		
	Sparkling water	1 glass		
	Milk	1 glass		

PHOTOGRAPH



Young Couple No. 5					
Meal 2					
Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used	
Lamb Chops with Mixed Salad	Main course:			Open fire	
	Lamb chops		1. Lamb chops are marinated in a mixture of olive oil, a tsp of lemon juice, finely chopped fresh thyme & rosemary (to taste), & coarse salt & pepper.		
	Olive oil				
	Lemon juice	1 tsp			
	Fresh thyme	To taste			
	Fresh rosemary	To taste	2. Lamb chops & a thin lamb sausage were roasted on the fire.		
	Coarse salt	To taste	3. Cajun spice is sprinkled over the top for extra taste.		
	Pepper	To taste	4. <u>Mixed salad</u> :		
	Lamb sausage		4.1. Cherry tomatoes, cucumber & Danish feta were cut into pieces & added together.		
	Cajun spice		4.2. Onion rings & olives are sprinkled over the top.		
	<u>Mixed salad</u> :		4.3. Sauce from the olives' bottle was dripped over the salad.		
	Cherry tomatoes				
	Cucumber				
	Danish feta				
	Onion rings				
	Olives				
	Beverages:				
	Chardonnay	1			
	Beer	2			
	Sparkling water	1 glass			
	Milk	1 glass			

PHOTOGRAPH



Young Couple No. 5

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Oven Baked Chicken & Rice Dish	Main course:			Oven dish
	Chicken breasts	6	1. Chicken breasts are placed in an oven dish.	Oven
	Mayonnaise	½ cup	2. On top of the chicken a mixture of mayonnaise & fruit chutney was poured.	Stove
	Fruit chutney	1 cup	3. Enough to cover the chicken.	
	<u>Mixed salad:</u>			
	Cucumber		4. Bake in oven at 200 °C for ± 45 minutes.	
	Green pepper		5. In the meantime, cook rice on the stove.	
	Onion rings		6. <u>Mixed salad:</u>	
	Sundried tomatoes		6.1. Cucumber & green pepper is cut into pieces & mixed together.	
			6.2. Add onion rings & a piece of sundried tomato.	
	Beverages:			
	Sparkling water	1 glass		

PHOTOGRAPH



Young Couple No. 5

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Burgers	Main Course:			Frying pan
	<u>Homemade patties:</u>		1. <u>Homemade patties:</u>	Oven Stove
	Beef mince	800g	1.1. Mix beef mince, egg & spices (origanum, cumin, chili powder, salt & pepper) together to taste.	
	Egg	1	1.2. Form mince balls (palm size) & press flat.	
	<u>Spices:</u>	To taste	1.3. Bake in olive oil in a hot pan on the stove until cooked.	
	Origanum		2. White bread rolls were cut in half & spread with olive oil & baked in the oven at 180 °C for ± 5min.	
	Cumin		3. <u>Burger combinations included the following ingredients:</u>	
	Chilli powder		3.1. Patties	
	Salt		3.2. Cheddar cheese	
	Pepper		3.3. Onion rings	
	Olive oil		3.4. Tomato rings	
	White bread rolls		3.5. Chutney	
	<u>Combinations:</u>			
	Patties			
	Cheddar cheese			
	Onion rings			
	Tomato rings			
	Chutney			
	<u>Beverages:</u>			
	Gin & tonic with lemon peel	2		

PHOTOGRAPH



Young Couple No. 5

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Shepherd's Pie	Main course:			Pot
	Olive oil		1. In a pot, heat some olive oil, add a finely chopped onion & a finely chopped garlic clove.	Oven
	Onion		2. Fry to light brown.	
	Garlic clove		3. Add beef mince & fry until minced meat is light brown.	
	Beef mince	800g	4. Add tomato puree, fresh thyme, salt & pepper (to taste).	
	Tomato puree	50g	5. Cook for ± 45min.	
	Fresh thyme	To taste	6. In the meantime, heat the oven to 180 ° C.	
	Salt & pepper	To taste	7. Meanwhile, place combine mixed vegetables (bought: combination of cut butternut, peppers, baby marrow, onions, cauliflower, small maize, Brussels sprouts) with a bit of olive oil, salt & pepper over, in the oven to bake until tender & cooked.	
	<u>Mixed vegetables:</u>		8. Place peeled & sliced potatoes & some water in the microwave.	
	Butternut		9. Cook for ± 25min.	
	Peppers		10. When the potatoes are tender, add some mixed butter & milk & press flat to make mash potatoes.	
	Baby marrow		11. Place mince in an oven dish & place mash potatoes over the top.	
	Onions		12. Sprinkle some grated cheese (Cheddar), fresh thyme & a bit of paprika powder over it.	
	Cauliflower		13. Bake in oven for ± 15min or until the cheese are crisp & brown.	
	Small maize			
	Brussels sprouts			
	Potatoes	4-5		
	Water			
	Butter			
	Milk			
	Cheddar cheese			
	<u>Beverages:</u>			
	Beer	1		
	Red wine	1 glass		

PHOTOGRAPHS



Young Couple Number 6

Meal 1

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Savoury Mince on Toast (Serves 2) <i>Note: Normally, we will fry & cook the mince on the stove, but we don't have gas at the moment</i>	Mince (extra lean)	200g	1. Wash & dice the potatoes & steam in microwave for 10 minutes.	LG™ Microwave oven (750W)
	Baby potatoes	4	2. Mince garlic.	
	Tomato paste	15ml	3. Place mince & potatoes into a microwave safe bowl & add garlic.	Microwave steamer
	Sweet basil	2ml	4. Microwave on high for 3 minutes, remove & break up the mince with a spatula.	Chef's knife
	Garlic	2 small cloves	5. Add the water, tomato paste, basil, chicken spice, salt & Worcestershire sauce.	Silicon spatula
	Salt	1ml	6. Microwave for 15 minutes, stirring after every 5 min.	Butter knife
	Worcestershire sauce	10ml	7. Toast the bread.	Cutting board
	Water	60ml	8. Butter the toast.	Microwave safe bowl (± 2litre)
	Albany Ultima-Multigrain™ Brown Bread	4 slices	9. Serve a portion of mince on a slice of bread.	Safeway™ pop-up toaster
	Butter	15ml		
PHOTOGRAPH 				
	<u>Homemade chicken spice:</u> Dried basil Dried organum Dried lemon zest Coarse sea salt Black peppercorns Onion flakes Garlic flakes <i>(Amounts specified above are all approximately, no measuring equipment was used)</i>	3ml		

Young Couple Number 6

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
'Avocado Ritz' with Maize ('Corn-on-the-Cob') (Serves 2) Note: <i>Husband doesn't like tuna or maize, therefore he only had toast with avocado.</i> <i>Wife just had Avocado Ritz with maize (see photo)</i>	Tuna Mayonnaise Tomato sauce Salt Black pepper Avocado Maize Toast Butter	1 can 45ml 30ml 2ml 1ml 2 1 2 10ml	1. Wash & steam maize in microwave for 20 minutes. 2. Mix tuna with mayonnaise, tomato sauce, salt & pepper. 3. Peel avocado, divide in two & top with tuna. 4. Toast & butter the bread.	LG™ Microwave oven (750W) Microwave steamer Knife Spoon Mixing bowl Safeway™ pop-up toaster

PHOTOGRAPH



Young Couple Number 6

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Chicken Schnitzel & Steamed Veggies (Serves 2)	Chicken breast	200g	1. Peel the butternut & carrots. 2. Cut the ends off of the green beans & wash. 3. Dice the vegetables & steam for 15 minutes in the microwave on high. 4. Butterfly the chicken breast & divide in half. 5. Tenderise the two halves of the chicken breast with a meat hammer. 6. Break the egg into a bowl & beat. 7. Cover each piece of chicken breast with flour, dip in the egg & cover with crushed Weet-bix™. 8. Place the chicken on an oven pan & bake in the over at 200 degrees Celsius for 15 minutes. 9. Remove the veggies from the microwave, place into a serving dish & stir in the butter.	Silicon spatula
	Weet-bix™	2 brix		Chef's knife
	Flour	20ml		Tablespoon
	Egg	1 large		Vegetable peeler
	<u>Homemade chicken spice:</u>	10ml		Meat tenderiser hammer
	Dried basil			LG™ Microwave oven (750W)
	Dried oreganum			Oven (Telefunken™)
	Dried lemon zest			
	Coarse sea salt			
	Black peppercorns			Microwave steamer
	Onion flakes			
	Garlic flakes			Cutting board
	Carrot	5 medium sized		Serving dish
	Butternut	¼ of medium sized		
	Green beans	1 medium pack		
	Butter	15ml		
	Cumin	3ml		
	Cinnamon	3ml		
	Salt	2ml		
	(Amounts specified above are all approximately, no measuring equipment were used)			



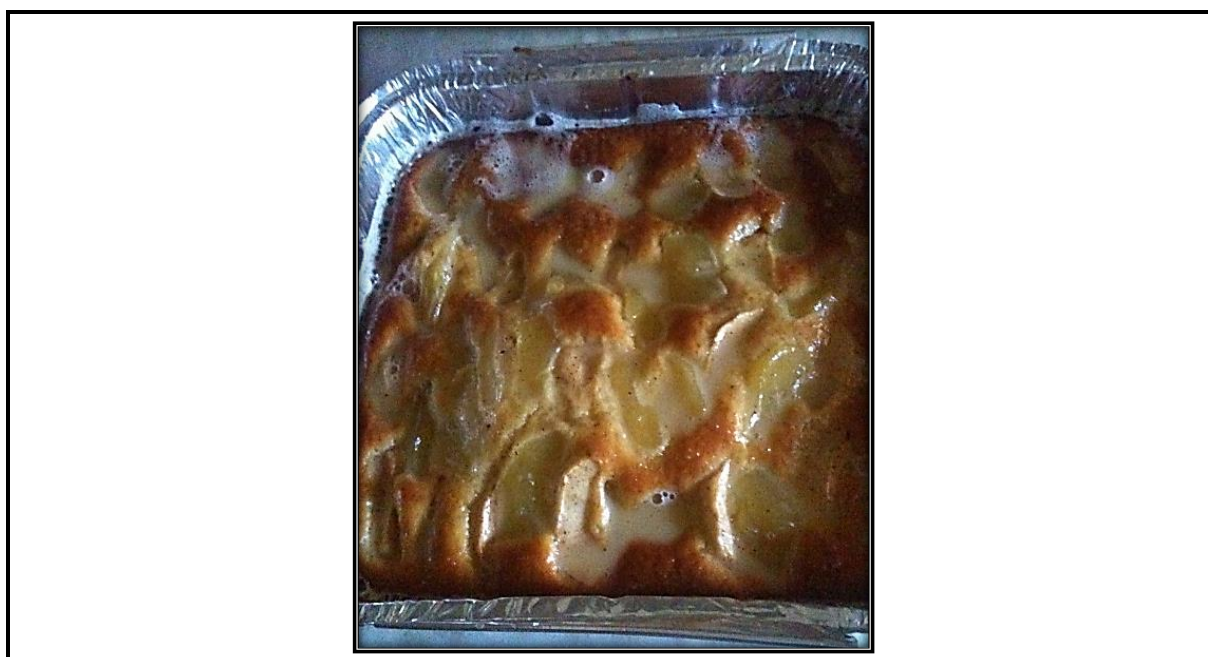
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Young Couple Number 6				
Meal 4				
Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Portuguese Chicken, with Roasted Potatoes & Vegetables (Serves 6) Note: <i>Normally, I will bake the raw vegetables straight in the oven, but because I want to bake them with the chicken at the same time, I steamed them a little to ensure that they are soft.</i>	Chicken pieces <u>Portuguese chicken marinade:</u> White wine Olive oil Salt Cayenne pepper Garlic Bay leaves	12 1 L	1. Marinade chicken overnight. 2. Grease 3 oven dishes. 3. Pre-heat oven to 180 °C. 4. Wash & cut baby potatoes in wedges. 5. Steam potatoes for 5 min in microwave. 6. Place potatoes, garlic, salt, & black pepper in an oven dish. 7. Drizzle with olive oil & add crushed bay leaves. 8. Peel & dice the butternut & carrots. 9. Steam butternut & carrot for 5 minutes in microwave. 10. Cut the ends off of the green beans & the baby marrow; wash & slice. 11. Place carrots, butternut, green beans & baby marrow in an oven dish. 12. Sprinkle with salt & homemade chicken spice. 13. Remove chicken pieces from marinade & place in oven dish. 14. Bake chicken, veggies & potatoes at 180°C for 45 min to 1 hour.	Oven (Telefunken™) LG™ Microwave oven (750W) Microwave steamer 3x oven dishes Knife Cutting board Vegetable peeler Tongs Bowl
	Baby potatoes Salt Pepper Dried bay leaves Olive oil Garlic Butternut Carrots Baby marrow Green beans Olive oil <u>Homemade chicken spice:</u> Dried basil Dried organum Dried lemon zest Coarse sea salt Black peppercorns Onion flakes .. Garlic flakes	12 15ml 5ml 6 30ml 2 cloves 3 medium sized ¼ medium sized 3 big ones ¼ pack 30ml 15ml		PHOTOGRAPH 

Young Couple Number 6				
Meal 4				
Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Apple Tart with Fresh Cream (Serves 6-8) Note: <i>Normally, I will cook the apples & cream sauce on the stove, but we don't have gas at the moment.</i>	Apples Cinnamon Canola oil Eggs Milk Sugar Flour Baking powder <u>Cream sauce:</u> Sugar Cream Extra cream for serving	6 5ml 45ml 3 125ml 125ml 250ml 5ml 125ml 250ml 250ml	1. Peel & core apples; slice apples. 2. Cook apples in a little water in the microwave for 5 minutes. 3. Grease an oven dish. 4. Pre-heat oven to 180 °C. 5. Whisk all the ingredients for the tart together & pour dough in oven dish. 6. Pack cooked apples in dough. 7. Bake at 180 °C for 1 hour. 8. Place ingredients for sauce in a glass measuring jug & microwave until sugar has melted, stirring every 30 seconds. 9. Pour hot sauce over tart immediately when it comes out of the oven. 10. Serve with fresh whipped cream.	Oven (Telefunken™) LG™ Microwave oven (750w) Microwave steamer Knife Mixing bowl Whisk Spatula Measuring jug (1 L) Measuring cups Measuring spoons Oven dish

PHOTOGRAPH



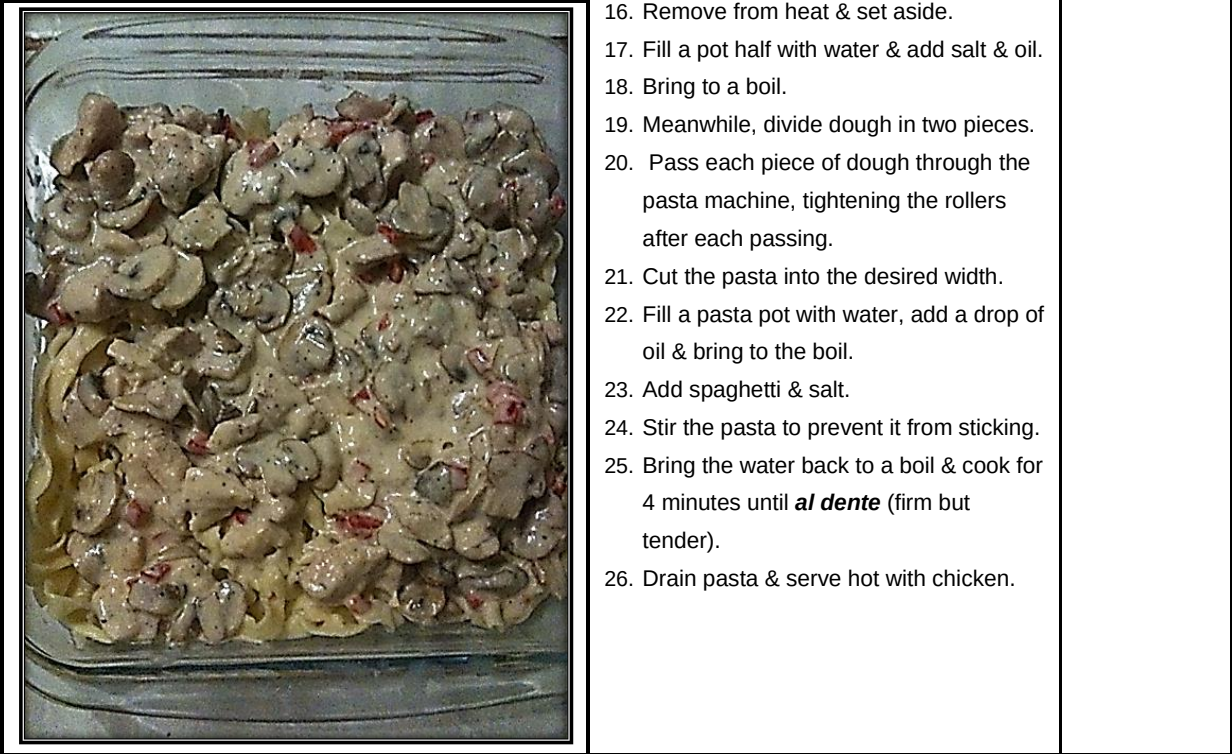
Young Couple Number 6

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used

Chicken Alfredo (Serves 2)	Flour	100g	1. Pour flour & salt in a mixing bowl & make a well in the centre with your fingers.	Mixing bowl
	Egg	1	2. Break egg into centre of the flour & mix the flour with the egg until dough starts to form.	Knife
	Salt	Pinch	3. Place dough on work surface & knead dough until a smooth consistency.	Cutting board
	Olive oil	For frying & cooking the pasta	4. Wrap dough tightly in cling wrap & rest for 30 minutes.	Gas stove (Telefunken™)
	Chicken breast	2	5. Wash & slice mushrooms.	Pot
	Mushroom	200g	6. Wash & small dice red pepper.	Pan
	Red pepper	¼	7. Cut chicken breast in cubes.	Colander
	Flour	15ml	8. Heat oil & stir-fry pepper & mushroom until tender but firm.	Spatula
	Cream	30ml	9. Remove from pan & set aside.	Cling wrap
	Milk	125ml	10. Heat oil in pan & stir-fry chicken until lightly brown.	Pasta machine
	<u>Homemade chicken spice:</u>	15ml	11. Add chicken spice.	
	Dried basil		12. Mix flour with a little milk & mix into a paste.	
	Dried organum		13. Add to chicken & stir.	
	Dried lemon zest		14. Add cream & the rest of the milk & stir.	
	Coarse sea salt			
Black peppercorns				
Onion flakes				
Garlic flakes				

PHOTOGRAPH	15. Lower heat & simmer for 5 min.



1. Pour flour & salt in a mixing bowl & make a well in the centre with your fingers.
2. Break egg into centre of the flour & mix the flour with the egg until dough starts to form.
3. Place dough on work surface & knead dough until a smooth consistency.
4. Wrap dough tightly in cling wrap & rest for 30 minutes.
5. Wash & slice mushrooms.
6. Wash & small dice red pepper.
7. Cut chicken breast in cubes.
8. Heat oil & stir-fry pepper & mushroom until tender but firm.
9. Remove from pan & set aside.
10. Heat oil in pan & stir-fry chicken until lightly brown.
11. Add chicken spice.
12. Mix flour with a little milk & mix into a paste.
13. Add to chicken & stir.
14. Add cream & the rest of the milk & stir.
15. Lower heat & simmer for 5 min.
16. Remove from heat & set aside.
17. Fill a pot half with water & add salt & oil.
18. Bring to a boil.
19. Meanwhile, divide dough in two pieces.
20. Pass each piece of dough through the pasta machine, tightening the rollers after each passing.
21. Cut the pasta into the desired width.
22. Fill a pasta pot with water, add a drop of oil & bring to the boil.
23. Add spaghetti & salt.
24. Stir the pasta to prevent it from sticking.
25. Bring the water back to a boil & cook for 4 minutes until **al dente** (firm but tender).
26. Drain pasta & serve hot with chicken.

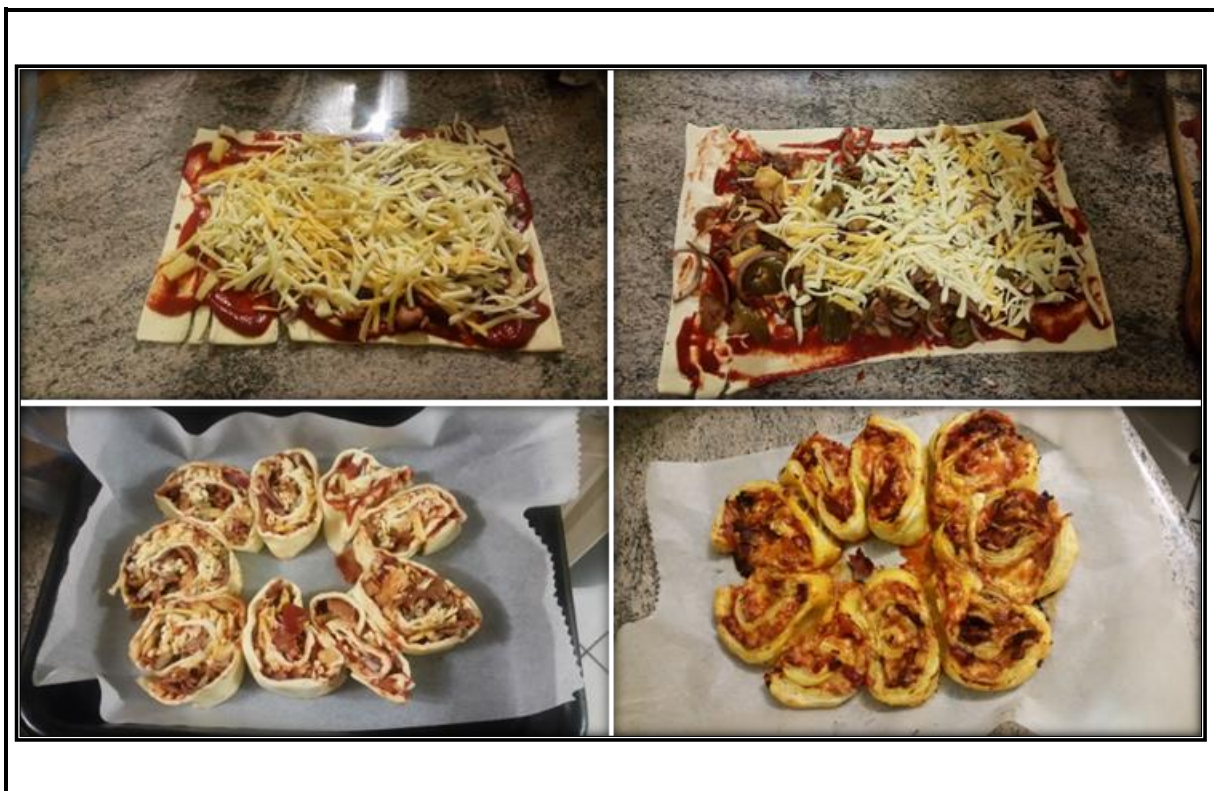
Mixing bowl
Knife
Cutting board
Gas stove
(Telefunken™)
Pot
Pan
Colander
Spatula
Cling wrap
Pasta machine

Young Couple Number 7

Meal 1

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Pastry Pizza (Serves 4)	Pastry dough	1 packet	1. Preheat oven to 180 °C.	Oven
	Tomato paste	250ml	2. Chop bacon, onion & garlic & place in pan on stove (high) until onions & mushrooms are brown.	Chopping board
	Bacon	250g	3. Unroll pastry on flat surface.	Knife
	Onion	1	4. Spread tomato paste evenly.	Wooden spoon
	Garlic	1 clove	5. Add bacon, onion & garlic.	Tablespoon
	Mushrooms, button	7	6. Add jalapeno.	Grater
	Cheddar cheese	125g	7. Add Cheddar & mozzarella cheese, mix on top.	Oven tray
	Mozzarella cheese, grated	125g	8. Roll the pastry & cut into wheels.	Baking sheet
	Jalapeno	2 Tbsp	9. Place on an oven dish & place in the oven.	Frying pan
	Olive oil	25ml	10. Bake for 25 minutes.	Garlic crusher
	Seasoning	pinch	11. Serve & enjoy.	

PHOTOGRAPHS



Young Couple Number 7

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Stuffed Squid (Serves 4)	Bacon	250g	1. Preheat oven to 180 °C.	Oven
	Garlic	1 clove	2. Boil water & cook rice.	Chopping board
	Mushrooms	4	3. Chop bacon, mushrooms & garlic & place in pan on stove & grill until cooked.	Knife
	Carrot	1	4. Chop carrot in small wheels & chop spinach & add to mix in pan.	Wooden spoon
	Squid	4	5. Add pepper paste to the mix along with seasoning.	Tablespoon
	Rice	½ cup	6. Once everything is cooked, mix the rice with bacon mix & add fish sauce.	Oven dish
	Spinach	125g	7. Stuff the squid with mix & be careful not to overstuff or tear.	Frying pan
	Olive oil	1 Tbsp	8. Place on oven dish (cover) & cook for 30 minutes.	Pot
	Pepper paste (Korean)	50g	9. Chop tomatoes & feta & place on plate.	Garlic crusher
	Seasoning	Add to taste	10. Add salad dressing.	
	Tomatoes	3	11. Serve squid & salad.	
	Feta	1 wheel		
	Salad dressing	Add to taste		
	Fish sauce	5 ml		

PHOTOGRAPHS



Young Couple Number 7

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Pasta, Mince & Salad (Serves 4)	Garlic	1 clove	1. Boil water & cook pasta.	Oven
	Mushrooms	5	2. Chop mushrooms, onion, garlic, spinach & maize.	Chopping board
	Onion	1	3. Place mushrooms, onion & garlic in pan on stove (high) & cook until brown.	Knife
	Mince	500g	4. Add mince & seasoning until cooked.	Wooden spoon
	Spinach	200g	5. Add spinach & maize.	Tablespoon
	Olive oil	1 Tbsp	6. Simmer for 20 minutes.	Frying pan
	Seasoning	Add to taste	7. Drain & rinse pasta.	Pot
	Avocado	1	8. Mash one avocado with feta.	Garlic crusher
	Maize	1 fresh	9. Dish up pasta, add mince on top & avocado-feta mix on side.	
	Feta	1 wheel	10. Serve & enjoy.	
	Pasta	½ packet		
	Chilli sauce	10ml		

PHOTOGRAPHS



Young Couple Number 7

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Braai (Serves 2)	Black mushrooms Onions Maize on the cob Sweet potato Lamb chops Cheese Lemon Juice Butter Seasoning Mayonnaise Crushed garlic	4 2 2 1 2 2 slices 20ml 20ml Add to taste 50ml 1 tsp	1. Start the fire. 2. Marinade chops with lemon juice & seasoning. 3. Wrap onions & washed sweet potato in foil. 4. Wash mushrooms & place in dish. 5. Mix crushed garlic & mayonnaise. 6. Place on mushrooms & add ½ slice of cheese on top. 7. Wait for the coals to be ready. 8. Place onions & sweet potato in the coals. 9. Place mushrooms & maize on low heat on the grill until ready. 10. Eat mushrooms as starter. 11. Add more coals & braai chops at high heat. 12. Turn onions & sweet potato on coals. 13. Place chops in braai dish when done. 14. Remove onions & sweet potato from coals & unwrap from foil. 15. Place on plate & add butter to onions & sweet potato. 16. Add chops on plate. 17. Serve & enjoy.	Braai Wood Firelighters Tongs Chopping Knife Braai dish Metal dish Foil

PHOTOGRAPHS



Young Couple Number 7				
Meal 5				
Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Cheesy Meatballs & Wraps (Serves 4)	Garlic	1 clove	1. Preheat oven to 180 °C.	Oven
	Mushrooms	4	2. Chop garlic, onion, bacon & mushrooms & fry in pan on high.	Chopping board
	Onion	1	3. Add brown onion soup & olives.	Knife
	Olives	10	4. Simmer for 20 minutes & stir occasionally.	Wooden spoon
	Jalapeno	2 spoons	5. Empty mince in plastic bowl.	Tablespoon
	Mince	500g	6. Add oats, one egg & seasoning.	Frying pan
	Olive oil	25ml	7. Mix thoroughly.	Plastic dish
	Seasoning	Add to taste	8. Form balls & add a small block of cheese inside.	Oven dish
	Wraps	4	9. Place in oven dish.	Garlic crusher
	Brown onion soup	½ packet	10. Pour the sauce from pan into oven dish (cover).	
	Cheese	100g	11. Place in oven & bake for 30 minutes.	
	Bacon	1 packet	12. When done, place wraps in oven (turn when needed until evenly brown).	
	Egg	1	13. Dish up; serve & enjoy.	
	Oats	100g		

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Cohabiting Couple Number 8

Meal 1

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Chicken Pieces in Oven, Spinach, Fresh Salad Notes: <i>Cooked for 3, lots of left over salad & chicken.</i>	Chicken pieces in oven:			Oven: Bauer™
	<u>Chicken based with:</u>	2 chicken pieces each	1. Chicken was defrosted in microwave then based & pre-cooked in the microwave for only about 10 minutes.	Microwave: Samsung™
	Macadamia oil	To taste	2. Then place into a baking pan into the oven for almost an hour on low heat 100 °C (<i>our oven is a bit broken, cannot set it higher</i>).	
	Paprika	To taste		
	Cayenne pepper	To taste		
	Dried parsley	1 tsp		
	Thyme	1 tsp		
	Rosemary	1 tsp		
	Salt	To taste		
	Pepper	To taste		
	Spinach:			
	Baby Spinach	150g	3. Spinach washed in salt water & spin dried.	
	Salt		4. Cooked in microwave for about 1.5 minutes.	
	Pepper		5. Let stand for 2 minutes & added sour cream, yoghurt & salt & pepper to taste.	
	Sour cream	50ml		
Full cream yoghurt	30ml			
Salad:				
Iceberg salad leaves	3 cups	6. Salad washed in salt water & spin dried.		
Tomatoes	2	7. Tomatoes & cucumber also washed.		
Cucumber				
Feta cheese	2 squares			
Avocado	1			
Lemon juice	To serve		8. Everything cut & added together.	

PHOTOGRAPH



Cohabiting Couple Number 8

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Roasted Chicken & Steamed Vegetables	Chicken pieces in oven:			Steamer: Safeway™
	Whole chicken cooked & split into two meals for 2 people		1. Chicken pieces placed into ovenproof pan & seasoned. 2. Cooked in oven on 150°C (oven broken) for about an hour.	Oven: Bauer™
	<u>Chicken based with:</u>			Stove: Bauer™
	Paprika	1-2 chicken pieces each		
	Paprika	1 tsp		
	Cayenne pepper	1 tsp		
	Dried parsley	1 tsp		
	Chicken spice			
	Salt	To taste		
	Pepper	To taste		
	Steamed vegetables:			
	Baby marrows	500g mixed roasting vegetables from Woolworths™	3. Steamed in a steamer cooker & served with sour cream.	
	Sweet potatoes			
Carrots				
Sour cream	1 tbsp per person, split into two meals for two people			
Pan fried mushrooms:				
Butter	1 tsp	4. All added to pan & cooked for about 5 minutes.		
Mushrooms	250g			
Parsley	½ tsp			
Salt	To taste			
Pepper	To taste			

PHOTOGRAPH



Cohabiting Couple Number 8

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Sweet Potato Cottage Pie & Broccoli	Cottage pie:			Oven:
	Ground beef mince	500g	<u>Cottage pie:</u> 1. Add coconut oil to pan & let it heat up. 2. Chop onion & add to pan along with oregano. 3. When onions start browning add mince. 4. When mince is no longer pink add spices. 5. Add corn flour & let it cook on low with lid on pan. 6. While preparing mince, wash sweet potato to remove most of the skin & place into steamer. 7. Steam until soft right through. 8. Mash sweet potatoes in bowl & add butter. 9. Mash until smooth. 10. Layer cooked mince into bottom of an ovenproof dish & layer sweet potato mash on top. 11. Bake in oven to 150 °C for about 10-20 minutes. 12. Switch grill on for last 3-5 minutes.	Bauer™
	Origanum	1 tsp		Stove:
	Paprika	1 tsp		Bauer™
	Cayenne pepper	1 tsp		Steamer:
	Salt	To taste		Safeway™
	Black pepper	To taste		
	Onion	1		
	Coconut oil	1 Tbsp		
	Corn flour	2 tsps.		
	Sweet potato	2 large		
	Butter	2 tsps.		
	Broccoli:			
Broccoli	100g	13. Steam broccoli in steamer in top above sweet potato.		

PHOTOGRAPH



Cohabiting Couple Number 8

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Braai with Bread, Side Salad & Potato	Bread:			Braai with blitz & charcoal Steamer: Safeway™ Stove: Bauer™ Oven: Bauer™
	Cinnamon bread	1 slice each	1. Fresh baked break.	
	Side salad:			
	Iceberg salad leaves	3 cups	2. Everything sliced or chopped except tomatoes.	
	Sliced red pepper	½ cup		
	Mini maize	½ cup		
	Salad tomatoes	1 cup		
	Braai:			
	Sirloin steak	300g	3. Sirloin marinated in freshly squished lemon juice & spices.	
	Steak chop spices (Robertson's®)	½ tsp		
Fresh squished lemon	½	4. On open fire braai until medium.		
Potato:				
Baby potato	6	5. Baby potatoes were steamed. 6. Garlic was pan fried in butter. 7. Potatoes were then added to pan with garlic.		
Butter	1 tbsp			
Garlic	3 cloves			

PHOTOGRAPH



Cohabiting Couple Number 8

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Fried Zucchini & Boerewors	Baby zucchini	6	1. Herbs added to millet flour.	Microwave: Samsung™ Stove: Bauer™
	Millet flour	¼ cup	2. Zucchini & green patty pans cut & dipped into millet & herb flour mix & then fried in sunflower oil.	
	Thyme	1 tsp.	3. Boerewors pan fried with added water.	
	Dill	1 tsp.	4. Yellow patty pans steamed in the microwave.	
	Parsley	To taste		
	Salt	To taste		
	Sunflower oil	2/3 cup		
	Salad tomatoes	8		
	Green patty pans	2		
	Yellow patty pans	3		

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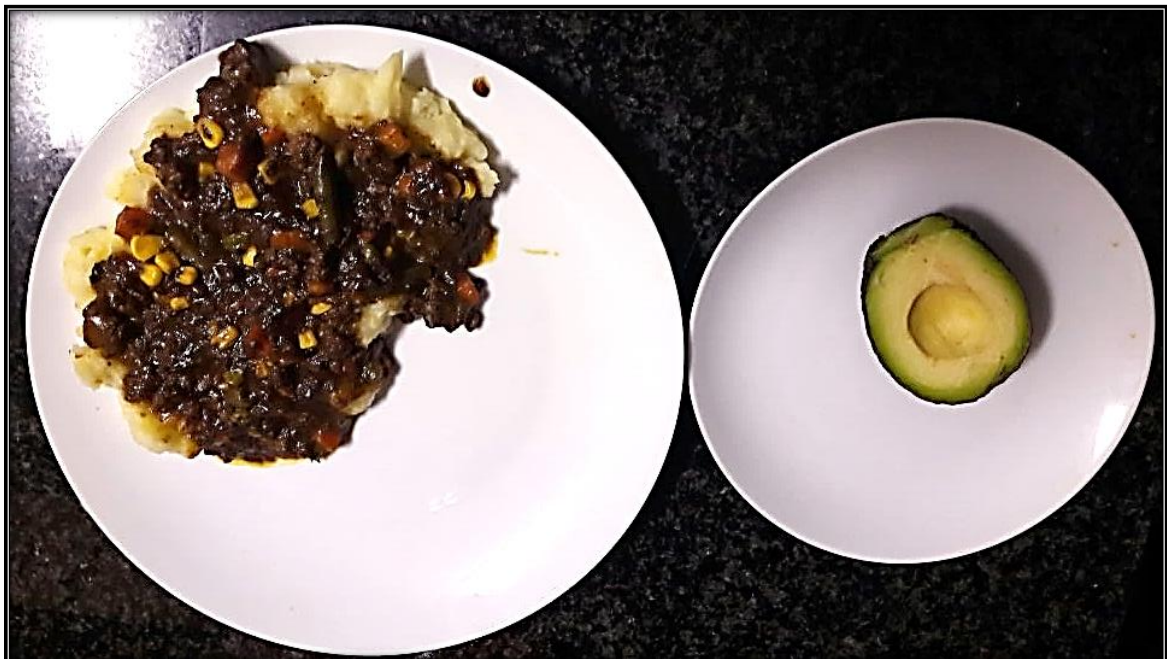


Cohabiting Couple Number 9

Meal 1

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Mince with Mixed Vegetables & Mash	Mince	250g	1. Fry the mince with salt, pepper & masala until cooked.	Pot
	Mixed vegetables	1 cup	2. Place mix veg in & fry until cooked.	Pan
	Potatoes	3	3. Place the brown onion in a cup & mix with water.	Cup
	Salt	Pinch	4. Pour into the mince mixture.	Masher
	Pepper	Pinch	5. Place on low heat & wait 15 min for everything to be cooked.	
	Masala	1 tsp	6. Sprinkle parsley on to finish.	
	Parsley	Pinch	7. Place the potatoes in a pot with water & wait until it is soft.	
	Brown onion soup	½ a packet	8. Mash the potatoes & sprinkle salt & pepper over it.	

PHOTOGRAPH



Cohabiting Couple Number 9

Meal 2

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Fish, Gem Squash, Couscous with Avocado	Fish Parsley Salt Garlic Pepper Gem squash Couscous Tomato Cucumber Red pepper Green pepper Avocado Honey Butter Cinnamon	2 pieces Pinch Pinch 1 tsp Pinch 4 1 cup 1 ¼ ¼ ¼ 1	1. <u>Fish</u> : 1.1. I fried the fish in olive oil in a pan with salt, pepper & parsley. 1.2. When the fish was almost done, I placed the garlic on the fish & waited until fully cooked. 2. <u>Couscous</u> : 2.1. 1 cup of couscous in a bowl with hot water. 2.2. Waited until cooked then chopped the red & green pepper, tomato & the cucumber & mixed it with the cooked couscous. 3. <u>Gem squash</u> : 3.1. Place it in a pot & cooked it until it was soft. 3.2. Took it out of the pot & placed in honey, butter & cinnamon. 4. Avocado on the side with salt & pepper on it.	Pot Pan Spatula

PHOTOGRAPH



Cohabiting Couple Number 9

Meal 3

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Chicken Stir-fry with Rice, Leftover Couscous & Avocado	Chicken breast Stir-fry vegetables (frozen) Basmati rice Avocado Salt Pepper Parsley Olive oil Brown onion Sweet chilli sauce	2 1 cup 1 Pinch Pinch Pinch 1 tsp ½ a packet ¼ cup	1. I diced up the chicken breast & place in a pan with salt, pepper & parsley & olive oil. 2. Fried it until cooked & took it out of the pan. 3. Placed the stir-fry in a pan with olive oil & waited until cooked. 4. When it was cooked, I placed the chicken with the stir-fry. 5. In a separate cup I mixed the brown onion & sweet chilli & mixed it with water. 6. I poured the mixture over the chicken stir-fry. 7. Placed it on low heat & waited until fully cooked. 8. In a separate pot I poured in basmati rice with water & salt & waited until cooked. 9. Placed the rice in the plate with chicken stir-fry on top. 10. On the side leftover couscous & an avocado with salt & pepper.	Pot Pan Cup

PHOTOGRAPH



Cohabiting Couple Number 9

Meal 4

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Rice, Sweet Potato¹³, Chicken & Potato	Chicken	5 pieces	1. First, I fried the chicken in the electric steam pot with salt, pepper & chicken spice.	Electric steam pot (EAG) TM Pot
	Sweet potato	1 packet	2. Then I poured in the brown onion soup with water & placed the potatoes in.	
	Basmati rice	½ cup	3. The chicken was cooked for 30 minutes.	
	Salt	Pinch	4. In a pot I placed half a cup of rice with water & salt.	
	Pepper	Pinch	5. I cooked it for 20 minutes.	
	Chicken spice	Pinch	6. The sweet potato I boiled with salt & one teaspoon of sugar.	
	Brown onion soup	1 packet		
	Potato	1		
	Sugar	1 tsp		

PHOTOGRAPH



¹³ Sweet potato: Term used by the participant for adding sugar to pumpkin.

Cohabiting Couple Number 9

Meal 5

Recipe	Ingredients	Amounts, measurements (estimate)	Detailed recipe procedure	Equipment used
Butter Chicken with Ciabatta Bread	Butter chicken spice from Woolworths™ Ciabatta bread from Woolworths™ Can of diced tomatoes Coconut milk Salt Pepper Chicken breast	1 Packet 1 whole 1 1 2 pieces	1. Fry the butter chicken spice in a pan with a little olive oil. 2. After 5 minutes place the diced tomatoes with the spice & cook until tomatoes are soft. 3. Dice up the chicken & fry with the mixture in the pan. 4. Wait until the chicken is cooked. 5. Sprinkle salt & pepper over. 6. After the chicken is cooked, pour the coconut milk over the mixture & wait for 15 minutes to cook. 7. After 15 minutes pour into bowl & serve with the ciabatta bread.	Pot

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ADDENDUM D:
PHOTO-ELICITATION: STIMULUS RECIPE

Phyllo and feta fig tart with nuts, cinnamon and honey.

Phyllo and Feta Fig Tart with Nuts, Cinnamon and Honey

This is a delicious dessert – serve it with strong coffee.

RECIPE TYPE: Desserts

SERVINGS: 8

PREPARATION TIME: Less than 45 minutes



INGREDIENTS

Main Ingredients:

- 8 sheets PnP phyllo pastry
- 60 ml melted butter, (plus extra for figs)
- 2 discs PnP feta, crumbled
- 80 ml sultanas
- 250 ml PnP mixed nuts, (like walnuts, almonds, hazelnuts and pine nuts), toasted and chopped
- 5 ml PnP ground cinnamon
- 3 extra-large PnP eggs
- 250 ml PnP cream
- 125 ml PnP milk
- 80 ml PnP castor sugar
- 1 pinch vanilla seed paste, or 5ml vanilla extract
- 1 pinch PnP salt

For serving

- 4 fresh figs, quartered
- 1 drizzle honey

METHOD

1. Preheat oven to 180°C.
2. Grease a 25cm quiche dish.
3. Brush phyllo pastry with butter.
4. Ruffle up pastry concertina-style and place in dish.
5. Mix feta, sultanas, nuts and cinnamon, and sprinkle between folds of pastry.
6. Whisk eggs, cream, milk, sugar, vanilla and salt together until well combined. Pour over pastry.
7. Bake for 20 minutes until cream mixture has just set but still has a slight wobble.
8. Heat a knob of butter in a pan
9. Caramelize figs with a drizzle of honey.
10. Top tart with figs and serve.

(Fresh Living Pick N Pay, 2015)

ADDENDUM E:
SEMI-STRUCTURED INTERVIEW QUESTIONS EXAMPLE

Example taken from participating couple number 1, recipe 1.



Maaltyd 1:
Macaroni en Kaas

1. Kook melk, water en botter op stoof (hoë hitte). Roer tot dit begin kook.
2. Gooi *Knorr* se *Mac Cheese* by en verlaag die hitte.
3. Roer die mengsel vir ongeveer 8 min tot sous begin dik word en pasta sag is.
4. Sny ham in klein blokkies en voeg by mengsel.
5. Voeg *Sweet Chili* sous by vir ekstra geur.
6. Koel effe af en gooi mengsel in oond. Bak met gerasperde kaas bo-oor.
7. Bak in oond op 180 grade Celsius vir ongeveer 5 min (tot kaas begin smelt).
8. Bedien met swart peper bo-oor.

Vrae/'Questions':

- Gebruik jy die resep van die *Knorr Mac & Cheese* of maak jy die ete uit jou kop uit? (C)
- Is daar klaar pasta by die *Knorr Mac & Cheese*, of is dit net 'n pakkie sous? (A)
- Skat jy die hoeveelhede of meet/weeg jy dit af? (A; M)
- Wat het jy gebruik om die melk, water en botter af te meet? (Hoe weet jy die hoeveelhede wat jy moet gebruik? (A)
- Watse tipe melk en botter gebruik jy? Hoekom? (A; P)
- In wat het jy die melk, water en botter ingegooi? (A; M)
- Met wat het jy geroer? (M)
- Hoe het die mengsel gelyk toe dit begin kook het? (A; M)
- As jy die hitte verlaag, hoe lyk die mengsel dan? (A; M)
- Roer jy 'consistently' die hele 8 minute? (PI; A)
- Wat se mes gebruik jy as jy die ham sny? (M)
- Waarop sny jy? (A; M)
- Hoeveel 'sweet chilli' sous gooi jy by? (C; A)
- Is dit jou eie 'initiative' om die *sweet chili* by te sit? (C)
- Rasper jy die kaas self of koop jy gerasperde kaas? (M)
- Watter tipe kaas gebruik jy? (P)
- Wat gebruik jy om die kaas te rasper? (M; A)
- Hoe lyk jou oondbak? (M)
- Wanneer skakel jy die oond aan? (A)
- Wat is die oond 'setting'? (A)

(A): Academic knowledge
(P): Perceptual knowledge
(C): Conceptual knowledge
(M): Mechanical skills
(PI): Planning skills

ADDENDUM F:
CONSENT FORM AND INFORMATION PAMPHLET

Example of the consent form and information pamphlet the participants received.

 UNIVERSITEIT VAN PRETORIA UNIVERSITY OF PRETORIA YUNIBESITHI YA PRETORIA Faculty of Natural and Agricultural Sciences			
Consent for Participation in Interview Research			
I volunteer to participate in a research project conducted by Miss Lou��lle Ryan from the University of Pretoria. I understand that the project is designed to gather information about cooking competence of young adults in Tshwane, South Africa. I will be one of approximately 8 to 10 couples taking part in this research.			
1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. 2. I understand that most interviewees will find the discussion interesting and thought provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any questions or to end the interview. 3. Participation involves being interviewed by Miss Lou��lle Ryan. a. The first interview will last approximately 2 hours. Notes will be written during the interview. An audio tape of the interview and subsequent dialogue will be done. If I don't want to be taped, I will not be able to participate in the study. b. The second interview will last approximately 45 - 60 minutes. Notes will be written during the interview. An audio tape of the interview and subsequent dialogue will be done. If I don't want to be taped, I will not be able to participate in the study. 4. I understand that I need to keep record via a food diary and photographs of my dinner preparations for 5 days, thereafter I will send it to the researcher within 8 days, or otherwise arranged with the researcher. 5. I understand that the information gathered by the researcher will be verified to ensure what was recorded and documented are correct. 6. I understand that the researcher will not identify me by name in any reports using information obtained from these interviews, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions. 7. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study. 8. I have been given a copy of this consent form.			
My Signature	Date (1)	My signature	Date (2)
My Printed Name (1)		My Printed Name (2)	
Signature of the Investigator (1)		Signature of the Investigator (2)	

ADDENDUM F: (continued)



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Natural and Agricultural Sciences

INFORMATION PAMPHLET

➤ What can I expect by participating in the research?

The data collection will take place as follows:

- Step 1: First contact session: Information and consent session (1 hour)
- Step 2: Keep a five-day food diary of your dinners and take photographs of the meals
- Step 3: Second contact session: First interview (2 hours)
- Step 4: Third contact session: Second interview for verification (2 hours)

All information will be collected through audio-taping and handwritten notes during the interviews.

➤ First contact session: Information and Consent Session (1 hour)

• What is the research about?

The current study looks into what an average day's cooking entails for South African young adults. There has not been much research done on this topic, globally as well as in South Africa. The research will aim to contribute new information to the South African literature and to create better understanding of young adult couples' cooking.

• Instructions of what you need to do:

- a. Keep a food diary when preparing dinner and take photographs of the end-product for five days.
- b. The food diary needs to contain:
 - i. The detailed recipe procedures,
 - ii. Appliances and
 - iii. Ingredients of the dinners that you prepare.
- c. This information should be sent to the researcher before the next contact session by WhatsApp or e-mail.
- d. Note: There is a template available to complete the data if needed.

• Consent form

Please see attached.

• Obtaining basic information of age, gender and marital status.

• Set-up dates for:

- Handing in the required information.
- Second contact session
- Third contact session

ADDENDUM G:

EXAMPLES OF PARTICIPANTS PERSONAL DOCUMENTATION EMAILED

Examples of how participants sent their personal documentation to the researcher.

 Gmail

Louelle Ryan <louelleryan@gmail.com>

Kossies
5 messages

to: louelle.ryan@gmail.com 3 June 2016 at 17:58

Hier het ons kerrie en rys (jammer dit lyk so deurmekaar het al begin eet toe onthou ons hehe)

Was net basmati rys met spice for rice, lean mince, kerrie poeier, mince poeier en aartappels. Met so biki tuisgemaakte chillie sousie by.

;)



20160524_190902.jpg
4488K

to: louelle.ryan@gmail.com 3 June 2016 at 18:01

Hierdie is ons favourite om te maak.

Dis penne pasta met gebraaide bacon. Wit sous wat bestaan uit melk, botter, meel, mozerella en wit kaas. En fyn gekapte parsley. Sommer nou weer lus vir dit hehe



20160523_193229.jpg
4911K

to: louelle.ryan@gmail.com 3 June 2016 at 18:04

Nog n einde van die maand 'gourmet' dis.

Baie ingewikkelde oven bake vissies en chips hehehe.... :)



20160530_191046.jpg
3517K

to: louelle.ryan@gmail.com 3 June 2016 at 18:05

Laastes en die lekkerste. Ons nuut ondekte favourite.

Dis so lekker ons eet net dit hehe.

koop die chicken wings en buffalo wings by die slaghuis wat klaar ingele is. Ek gooi hul net so in n oven bake sakkie en sit hul in die oond. Ek was van plan om n slaai by te maak.... maar ja didnt happen hehe.

Hoop dit is als reg.

Jameer dat ek jou inbox nou gespam het

;)



IMG-20160601-WA0006.jpg
167K

to: louelle.ryan@gmail.com 3 June 2016 at 18:08

Hierdie was deel van ons einde van die maand kos.

Dis oven bake chicken schnitzel met groente wat in di mikrogolf oond gestoom is. Dan aartappel en sweet patats wat ek gemeng het in olyf olie, sout peper, paprika en tyme en dan in die oind bebak is met mozerella bo-oor.

;)



20160525_184918.jpg
4572K

ADDENDUM G: (continued)

 Louelle Ryan <louelleryan@gmail.com>

Food Diary
6 messages

To: Louelle Ryan <Louelle.ryan@gmail.com>

31 May 2016 at 18:36

Day 1 (het foto ge-whatsapp)

Hi, kyk of ons die template reg verstaan en genoeg info gegee het, laat weet indien ons meer detail moet gee.

xx

 **Food Diary F&L.docx**
19K

To: Louelle Ryan <Louelle.ryan@gmail.com>

1 June 2016 at 19:59

Day 2

Updated Day 1 (Added equipment brand names)
[Quoted text hidden]

 **Food Diary F&L.docx**
20K

To: Louelle Ryan <louelleryan@gmail.com>

3 June 2016 at 20:47

Day 3
[Quoted text hidden]

 **Food Diary F&L.docx**
21K

To: Louelle Ryan <louelleryan@gmail.com>

5 June 2016 at 18:34

Day 4
[Quoted text hidden]

 **Food Diary F&L.docx**
24K

To: Louelle Ryan <louelleryan@gmail.com>

5 June 2016 at 18:38

Skies wou sê, ek het in dag 4 se weergawe, by dag 1 en 3 die chicken spise verander, want ek maak my eie en F het daardie 2 aande kos gemaak en hy het nie geweet wat ek in my chicken spise mengsel sit nie, so ek het dit by gesit vir volledigheid.
[Quoted text hidden]

To: Louelle Ryan <louelleryan@gmail.com>

7 June 2016 at 08:25

Day 5

Louelle, vat hierdie een as die finale weergawe, ek het deur al die dae gegaan en hier en daar nog leemtes ingevul, bv was groente, ons vat dit as automaties maar weet nie goe volledig jou storie moet wees nie, en ek het nog hier en daar equipment bygesit wat ons vergeet het.

As ons nog iets vergeet dan praat ons donderdag. Lekker week :)

[Quoted text hidden]

 **Food Diary F&L.docx**
25K

ADDENDUM H:
LIST OF TRADITIONAL FOOD TERMINOLOGY

Traditional foods marked with a “†” are presented in the list of traditional food
(local and international) terminology.

The terminology is arranged in alphabetical order.

TERMS AND CONCEPTS		
TERM OR CONCEPT	DEFINITION	SOURCES
Alfredo pasta	Pasta prepared with butter, cream and parmesan cheese	(Labensky <i>et al.</i> , 2015:710)
Boerewors	“... A coarse, loose textured beef and pork sausage flavoured with spices such as coriander, cloves, nutmeg and all spice ...” (Smit & Fulton, 1983:47; Van Wyk & Barton, 2007:54)	(Viljoen, 2009:111)
Bolognese sauce	Italian beef tomato sauce served over pasta	(Labensky <i>et al.</i> , 2015:260)
Braai / To braai	A braai is a South African food preparation method “... by which wood or charcoal is burned in an open fire to grill meat ...”, similar to barbeque or grill	(Venter, Jaars, Booyens, Beukes, van Zyl, Josipovic, Hendriks, Laakso, Vakkari, Ruiz-Jimenez, Riekkola Hellén, Hakola & Aaltonen, 2015:181)
Braaivleis	Grilled meat cooked on a braai	(Venter <i>et al.</i> , 2015:181)
Bobotie	“... a South African dish consisting of curried mincemeat with a topping of beaten egg baked to a crust ...”	(Collins English Dictionary, n.d.)
Caldo Verde	Portuguese soup containing potatoes, green vegetables and served with smoked sausages like chouriço	(Merriam-Webster, n.d.)
Caprese salad	Italian salad with fresh mozzarella, tomatoes and basil	(Labensky <i>et al.</i> , 2015:779)
Charcoal / briquettes / braai coals	Both charcoal (“... a porous black form of carbon obtained as a residue when wood or other organic matter is heated in the absence of air ...”) and briquettes (“... a block of compressed organic fuel ...”) are often used for braai fires in South Africa. Also referred to as braai coals.	(Rhodes University, 2010:144,195)

TERMS AND CONCEPTS		
TERM OR CONCEPT	DEFINITION	SOURCES
Chouriço	A Portuguese sausage similar to Spanish chorizo. It is made from pork meat but has less paprika and tastes smokier than a chorizo.	(Taborda, 2020)
Foie gras	“... liver of specially fattened geese ...”	(Labensky <i>et al.</i> , 2015:1167)
Korma	An Indian curry containing meat or vegetables braised with yoghurt, stock and spices such as garam masala to produce a thick sauce	(Atkinson, 2012:8)
Maizena	“... Trademark, chiefly South African cornflour ...”	(Rhodes University, 2010:707)
Margherita pizza	A pizza variation consisting of tomato, basil and mozzarella	(Collins English Dictionary, n.d.)
Pap	“... Afrikaans for stiff maize-meal porridge ...”	(Viljoen, 2009:111)
Quinoa	“... tiny, spherical seeds of a plant native to South America; cooked like grain or ground and used like flour ...”	(Labensky <i>et al.</i> , 2015:1175)
Ragoût	“...a well-seasoned, rich stew containing meat, vegetables and wine ...”	(Labensky <i>et al.</i> , 2015:1175)
Souttert	“ ... a South African tart, made up of eggs, flour, whisked eggs and grated cheese ...” similar to a French quiche, but less rubbery and bouncy, and packed with ingredients.	(Minnaar, 2017)
Vetkoek	Traditional South African deep-fried bread dough balls	(Viljoen, 2009:103)

ADDENDUM I: PARTICIPANTS FOOD DIARY INGREDIENTS

According to the NOVA food group classification system

The researcher categorised the participants FDs by utilising the information provided by EduChange (2018) and searching for the ingredient's classification on the Nutri Score Scan application.

Participants food consumption according to NOVA group and food categories: **protein**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Protein		Beef, goulash. Beef, hamburger patties (butchery). Beef, mince. Beef, mince (extra lean). Beef, mince (lean). Beef, strips. Chicken, breasts. Chicken, buffalo wings. Chicken, pieces. Chicken, stir-fry or strips. Chicken, thighs & drumsticks. Game, mince. Hake, fillets (with skin). Lamb, chops. Lamb, ribs. Shrimp (frozen). Sirloin steak. Squid tubes (frozen).	<i>Boerewors.</i> Lamb, sausage.	Bacon. Bacon, streaky. Tinned, tuna.	Chicken schnitzel, oven bake, (frozen). Chicken schnitzel, ready-to-cook (Woolworths™). Chicken, buffalo wings (vacuum packed marinated). Hake, crumbed, oven bake (frozen). Ham, sandwich (Woolworths™).

Participants food consumption according to NOVA group and food categories: **starch**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Starch		Rice, basmati. Rice, jasmine. Rice, long grain. Rice, white long grain (Tastic™). Pasta, couscous. Pasta, fusilli. Pasta, macaroni. Pasta, penne. Oats. Flour, cake. Flour, millet.		Bread, cinnamon (homemade). Bread, French loaf (Spar™ bakery). Bread, rolls, white (bakery). Maizena (corn flour). Vetkoek dough (Spar™).	Bread, brown, multigrain (packaged). Bread, ciabatta, olive (heat-&-eat). Wraps (packaged). Pizza bases (ready-prepared). Rice crackers. Cereal, Weet-bix™. Dough, puff pastry (Todays™). Flour, self-raising (Snowflake™) .

Participants food consumption according to NOVA group and food categories: **fats**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Fats	Avocado.	Mixed seeds.	Butter (salted). Butter (unsalted). Oil, canola. Oil, macadamia oil. Oil, olive. Oil, olive & grape seed blend. Oil, olive, blend. Oil, olive, extra virgin. Oil, sunflower.	Oil, coconut.	Butter spread (Butro™). Margarine, flora light. Margarine, spread for bread (Rama™). Margarine, Stork™. Margarine, Proactiv™.

Participants food consumption according to food categories: **fruit**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Fruit	Apples.	Lemon juice, fresh.		Olives, (in brine or pickle). Olives, calamata (pickled homemade).	Lemon juice, bottle. Tinned, milk, coconut. Peppadews™, diced (bottled).

Participants food consumption according to food categories: **vegetables**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Vegetables	Baby marrows. Bell pepper, green. Bell pepper, red. Broccoli. Butternut. Carrots. Carrots, baby. Cauliflower. Cucumber. Garlic. Green beans. Lemon, peel (for gin). Lemons. Maize. Maize, mini. Mushrooms. Mushrooms, black. Onions. Patty pans yellow. Patty pans, green. Potatoes. Potatoes, baby. Rocket leaves. Spinach, baby. Spring onion. Sweet potatoes. Tomatoes. Tomatoes, cocktail. Tomatoes, rosa, cherry.	Cucumber, fresh (pre-wash). Gem squash (pre-halved, fresh). Iceberg salad leaves (torn from lettuce head). Maize (frozen). Mixed vegetable minestrone soup mix (fresh vegetables & beans). Mixed vegetables (fresh, pre-cut for steaming). Mixed vegetables (frozen). Mixed vegetables (McCain™ frozen). Mixed vegetables (McCain™ oven roasted mixed vegetables, frozen). Mixed vegetables, cut, roasted, fresh (butternut, peppers, baby marrow, onions, small maize, Brussels sprouts). Mixed vegetables, cut, roasting (carrots, baby marrows, sweet potato). Onions, fresh (purchase without skin). Pumpkin (pre-diced packet, fresh). Salad leaves (mixed packet). Spinach (frozen). Tomatoes, sundried (not in oil).		Garlic, bottled. Garlic, pre-chopped, bottled (Checkers™). Jalapeno strips (bottled). Tinned tomatoes, whole. Tinned, curry vegetables (Koo™). Tinned, peas, (Surf maid™). Tinned, tomatoes, diced (All Gold™). Tomato paste. Tomato puree. Tomato puree, bottle (Woolworths™). Tomato sauce (homemade). Woolworths™ ready-to-heat baby potatoes with fresh garlic & herb butter (microwave).	Caramelised onions (bottle). Creamed spinach & feta, ready-to-heat from frozen packet. Chips, oven bake, frozen (McCain™ - see ingredients list).

Participants food consumption according to food categories: **dairy and eggs**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Dairy & Eggs	Eggs.	Cream, fresh. Milk, fresh, low-fat, extended shelf life. Milk, full cream. UHT. Milk, pasteurised.		Cheese, feta. Cheese, feta, Danish. Cheese, mozzarella. Sour cream (Dew Fresh™, no preservatives or additives).	Cheese (variety leftover from platter). Cheese, cheddar. Cheese, cheddar, white. Cheese, cream cheese, medium fat. Cheese, cream, Philadelphia. Cheese, Gouda. Cheese, Parmesan, crumbled packed. Cheese, sliced, processed. Yoghurt, cultured, double cream. Take-away: Steers™ ice cream. Sour cream (Woolworths™).

Participants food consumption according to food categories: **sugar**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Sugar			Sugar. Honey.		Take-away: Steers™ chocolate sauce (for ice cream).

Participants food consumption according to food categories: **seasoning**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Seasoning		Butter chicken spice blend (Woolworths™).		Curry powder. Curry powder, medium (Rajah™).	Aromat™. Braai-salt. Cajun spice (Ina Paarman's™). Chicken spice (Robertson's®). Chop spice. Orange pepper spice. Rosemary & olive (Ina Paarman's™). Spice for rice (Robertson's®). Steak chop spices.

Participants food consumption according to food categories: **instant mixes and cupboard ingredients**

Food items	Group 1: unprocessed foods	Group 1: Minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Instant mixes & cupboard ingredients					Baking powder. Beef stock cubes. Instant powder mix: Bolognese pasta sauce (Royco™). Instant powder mix: brown onion soup (Knorr™). Instant powder mix: potato bake Instant powder: Bisto™ brown onion. Instant sauce, black pepper (Knorr™). Mac & cheese pasta & sauce (Knorr™).

Participants food consumption according to food categories: **alcohol**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Alcohol				Wine, red. Wine, sweet white. Wine, white. Wine, white, (chardonnay). Beer.	Gin & tonic.

Participants food consumption according to food categories: **condiments**

Food items	Group 1: unprocessed foods	Group 1: minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Condiments				Chilli sauce (homemade).	Beefy Bovril™ meat & vegetable extract. Chilli sauce. Chutney. Chutney, No Name™ Chutney, Mrs Balls™ Fish sauce. Mayonnaise (Crosse & Blackwell™). Mayonnaise (Nola™ reduced oil salad cream). Perinnaise (Nando's™). Peri-peri sauce. Salad dressing. Spur™ BBQ sauce. Spur™ Durky sauce. Spur™ French fry & salad dressing. Sweet & sour sauce with pineapple. Sweet chilli sauce. Tomato sauce. Vinegar, balsamic. Worcestershire sauce.

Participants food consumption according to food categories: **take-aways**

Food items	Group 1: unprocesse d foods	Group 1: Minimal processed	Group 2: processed culinary ingredients	Group 3: processed foods	Group 4: UPFs
Take-away					Take-away: King Steers™ burger. Take-away: Steers™ chips. Take-away: Steers™ ice cream & chocolate sauce.

ADDENDUM J: RESEARCH OUTPUTS

The research outputs for this study included a poster presentation at the 22nd Biennial International South African Association for Food Science and Technology (SAAFoST) Congress and Exhibition on the development of a conceptual framework to gain insight into the cooking competence of young white adult couples residing in Tshwane, South Africa.



Development of a conceptual framework to gain insight into the cooking competence of young white adult couples, residing in Tshwane, South Africa

Miss Louëlle Ryan (louelle.ryan@up.ac.za)
 Supervisor: Dr G.E. du Rand (Gerrie.DuRand@up.ac.za)
 Co-Supervisor: Dr A.T. Viljoen (Annemarie.Viljoen@up.ac.za)
 Department of Consumer Science, Faculty of Natural & Agricultural Sciences



INTRODUCTION

A decline in cooking competence has become a global concern and young people in particular, do not seem to engage in cooking food anymore, this results in their food intake to be considered unhealthy. This can be attributed to factors such as the lack of knowledge and skills regarding cooking and healthy eating. The debate regarding the construct of cooking competence, created uncertainty around its conceptualisation and operationalisation. For the purpose of this qualitative study, a conceptual framework concerning cooking competence was developed.

METHODOLOGY

- A theoretical framework (Figure 1) was compiled from which the conceptual framework (Figure 2) was developed as a visual representation of the research process. Qualitative data was collected through observation, semi-structured interviews, visual ethnography through private documents (food diaries), stimulus techniques and audio-visual materials (photographs).
- The conceptual framework guided this study into exploring and describing the current cooking knowledge and cooking skills of these couples, according to their cooking competence dimensions.
- This was done by means of the qualitative computer data analysis program *Atlas.ti* that assisted in sorting and analysing the data according to the cooking competence dimensions, which formed the themes of the research findings.

Theoretical Framework

COOKING COMPETENCE	DIMENSIONS	DESCRIPTION: (Desjardins & Kawartha, 2013; Wagner et al., 2011; Begley & Gallegos, 2010; Short, 2003)
Cooking knowledge	Perceptual	- Ability to: - Understand recipe instructions. - Work with ingredients. - Judge and group ingredients according to: - Appearance. - Taste. - Colour. - Textures. - Select food with limited resources. - Accessibility to food with limited resources.
	Academic	- Knowledge about: - Food: - Nutrition. - Health requirements. - Safety. - Characteristics. - Origins. - Where to find information (incl. food labeling). - Understanding the impact of cooking processes. - Understanding the impact that cooking techniques will have on food. - Reason for basic cooking processes. - Insight into the temporal or timing of cooking tasks. - Menu-planning. - Awareness of food trends and fashion.
Cooking skills	Mechanical	- Actual food preparation techniques: - Cutting (active activities). - Grating (active activities). - Steaming (passive activities). - Knowledge of basis food produce and cooking with it. - Ability to make use of kitchen equipment and appliances. - Appropriateness in selecting utensils and appliances according to food preparation activity.
	Conceptual	- Ability to: - Visualise the end product. - Improvise or create by adapting and substituting recipe ingredients. - Reproduce recipes without following instructions. - Select food item according to food preparation skill.
	Planning	- Be able to visualise and put together an appealing meal. - Organisational skills and experience: - Budgeting. - Buying and - Storing ingredients. - Available time for food preparation. - Multi-tasking: - Time management while cooking. - Performing multiple meal preparation activities simultaneously. - Ability to schedule activities prior to, and during meal preparation.

RESULTS AND DISCUSSION

- Exploring the cooking competence of these participants, provided insight and understanding into their food practices, which gave an explication and better understanding of their eating and lifestyle practices.
- A number of themes emerged in addition to those given in the original theoretical framework.

Convenience Limitations Psycho-Social factors	- Time saving - Easier and quicker food preparation - Time availability - Budget (finances) - Availability of cooking equipment - Cooking confidence - Feeling healthy - Receptiveness to obtain skills and knowledge - Inter-personal relationships

Conceptual Framework

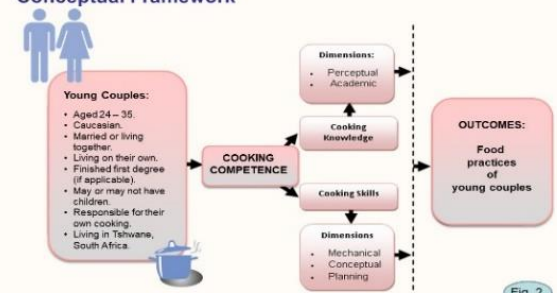
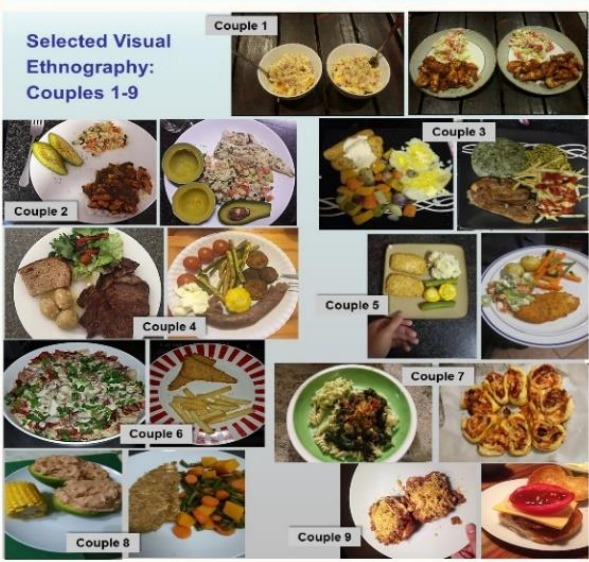


Fig. 2

Selected Visual Ethnography: Couples 1-9



CONCLUSION

- The themes that emerged in addition to the original theoretical framework regarding cooking competence indicated that time and budget constraints, together with psycho-social factors, contribute to the extent to which a couple's food practices could be regarded as healthy or not.
- Healthy food practices are not only related to cooking competence (cooking knowledge and skills), but also to the ability to be able to adapt and manage the constraints posed by time, budget and psycho-social factors.

REFERENCES

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WAGNER, J., VAN HAN, HAN, A., HEDENSTEDT, J., PHILLIPS, J., PHAM, C., MONTGOMERY, P., JACKSON, D., LAJTHA, C., LAJTHA, K. & OLIVER, P. 2011. Towards a pervasive kitchen infrastructure for measuring cooking competence. *Pervasive Computing Technologies for Healthcare (PervasiveHealth)* 2011 5th International Conference on, 2011, IEEE, 107-114.

The financial assistance of the National Research Foundation (NRF) towards this research is hereby acknowledged (Grant no 83743).

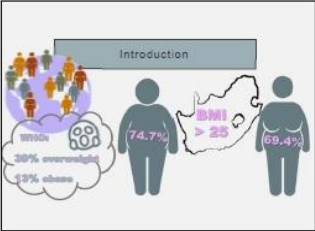
The study was presented at the Seventh International Conference on Food Studies in Rome, Italy.



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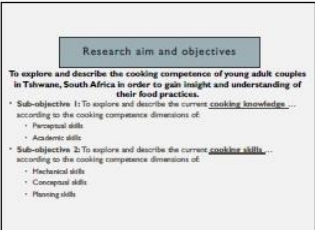
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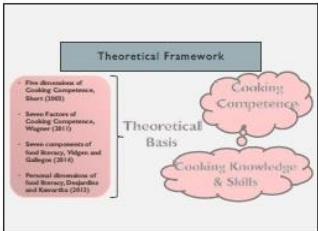
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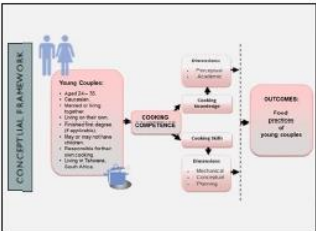
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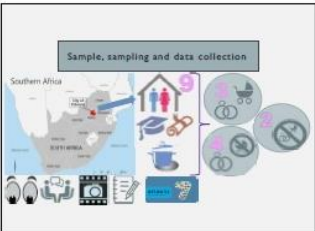
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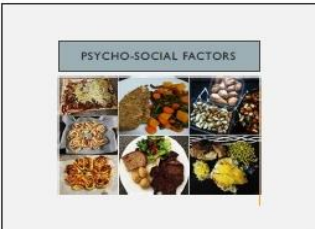
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The published work of the study was presented as a qualitative study on the cooking competence of young adult couples residing in Tshwane, South Africa, at the 13th International South African Association of Family Ecology and Consumer Science (SAAFECS) conference.

TM



DAY 5: FRIDAY, 9 MARCH 2018			
07:30 – 8:00	Registration: Veranda Dorian		
	Venue: Dorian 1		
08:00 – 08:15	Opening and Welcome: Prof E Kempen, SAAFECS President		
	Venue: Dorian 1 Theme: Education/Teaching & Learning Session Chair: Ms A Du Toit	Venue: Dorian 2 Theme: Consumer Behaviour & Decision Making Session Chair: Mrs N Le Roux	Venue: Dorian 3 Student Session: Theme Consumer Behaviour & Decision-Making Session Chair: Mrs L Wyma
8:15 – 8:45	Teachers' perceptions on violent conflicts among high school pupils in the Manzini Region of Swaziland <i>Dr BP Makhanya, Ms NP Sibozo – University of Swaziland</i>	Demographic differences in consumers' personal values: An application of the LOV in a consumer complaint behaviour context <i>Ms MJ De Klerk, Dr S Donoghue, Prof F Steffens – University of Pretoria</i>	Nature and natural textual claims are cues used to mislead consumers: A comparative content analysis of green advertisements <i>Mr OA Oja – Central University of Technology, Prof RW De Lange – Tshwane University of Technology</i>
8:45 – 9:15	A framework to enhance consumer science graduates' employability skills <i>Mrs M Du Preez – North-West University, Dr LJ Van der Merwe, Dr SB Swart – University of the Free State</i>	Urban consumers' decision-making styles during the selection of household equipment <i>Mrs N Le Roux, Prof D Van der Merwe – North-West University</i>	Subjective and objective consumer knowledge of GM food in South Africa <i>Miss I Marx, Mrs L Wyma, Mrs E Botha – North-West University, Prof CD Viljoen – University of the Free State</i>
9:15 – 9:45	Benchmarking the South African Consumer Studies curriculum with the curricula of similar subjects in Lesotho and Swaziland: room for improvement <i>Ms A Du Toit – North-West University, Mrs MAM Mafaesa – Ministry of Education and Training, Mrs BM Pheto-Moeti – Lesotho College of Education</i>		A qualitative study on the cooking competence of young adult couples, residing in Tshwane, South Africa <i>Miss L Ryan, Dr GE du Rand, Dr AT Viljoen – University of Pretoria</i>
9:45 – 10:15	Improving teaching and learning at a Clothing class of a university of technology <i>Miss SG Sizakele – Mangosuthu University of Technology</i>		Different shades of green consumers: cultivating the green consumer by embracing diversity into a comprehensive segmentation model for South Africa <i>MS H Dreyer – North-West University</i>
10:15 – 10:45	Refreshments		

A QUALITATIVE STUDY ON THE COOKING COMPETENCE OF YOUNG ADULT COUPLES, RESIDING IN TSHWANE, SOUTH AFRICA

Miss L. Ryan, Dr GE du Rand, Dr AT Viljoen – University of Pretoria

Keywords:

Cooking Competence; Cooking Skills; Cooking Knowledge

Introduction and Problem:

The decline of cooking competence has become a global concern (Hartmann, Dohle & Siegrist, 2013; Ball & Brown, 2012; Thomas & Irwin, 2011). Young people in particular do not seem to cook and their food intake is generally considered to be unhealthy (Ball & Brown, 2012; Larson, Perry, Story & Neumark-Sztainer, 2006). This can be attributed to lifestyle-related factors such as the rise in consumption of convenience and fast foods; financial and time constraints; sedentary lifestyles; and the lack of knowledge and skills regarding cooking and healthy eating (Vidgen & Gallegos, 2014; Hartmann *et al.*, 2013).

Unhealthy eating contributes to overweight and obesity (MacKay, 2011) and is linked to the increase in diet-related noncommunicable diseases (NCDs) and a decrease in health (Vidgen & Gallegos, 2014). Since 1980, the obesity statistics have almost doubled worldwide and by 2008 over half a billion people globally suffered from obesity (World Health Organization, 2012). Overweight and obesity is also a considerable health problem in South Africa. Recent figures indicate that 74.7% of white men and 69.4% of white women in South Africa have a Body Mass Index (BMI) of over 25 (NDOH, Stats SA, SAMRC & ICF, 2017:45). An unhealthy lifestyle that results in weight gain is also associated with the decline in cooking competence (Hartmann *et al.*, 2013; Van der Horst, Brunner & Siegrist, 2010).

Current research substantiates the importance and need to pay attention to people's cooking skills (McDowell, McMahon-Beattie & Burns, 2015; ICN2, 2014) as part of the solution to curb the rise in NCD's. There is also substantial research that focussed on the importance of cooking confidence, food neophobia and cooking interventions. Published literature focused more on pre-adolescents, adolescents, university or college student and the elderly (Garcia, Vargas, Iam, Smith & Parrett, 2013; Wagner, Kennel, Rose, Pennywitt, Miller, Holloman, Battista-Hesse, Murray & Gunther, 2013). Very little research is available pertaining to cooking competence of young adult couples.

The lack of research on cooking competence also applies to South Africa. Although there is much debate regarding the definition of cooking competence and the related concepts. For the purpose of this study, it is defined as "The ability or skill required to master the basic academic, perceptual, mechanical, conceptual and planning dimensions of food preparation" (Wagner *et al.*, 2011; Short, 2003). The theoretical basis, concepts and framework concerning cooking competence has been compiled from the five dimensions of cooking competence by Short (2003); the seven factors of cooking competence by Wagner (2011); the seven components of food literacy by Vidgen and Gallegos (2014) and the personal dimensions of food literacy by Desjardins and Kwartha (2013). These dimensions were compiled (see Table 1) and cooking competence was conceptualised as cooking knowledge and cooking skills. Cooking knowledge relates to the perceptual and academic dimensions and cooking skills relates to the mechanical, conceptual and planning dimensions.

This, however, has not yet been determined in South Africa. Therefore, it is not clear what is in actual fact happening in the South African setting. As a result, it is not known if the food practices of young adult couples are related to their cooking competence.

Objectives:

The main objective of the study is to explore and describe the current cooking competence of white young couples living in Tshwane, South Africa. There are two sub-objectives. The first is to explore and describe the current cooking knowledge of these young couples according to the cooking competence dimensions of perceptual and academic skills. The second will be to explore and describe their current cooking skills according to the cooking competence dimensions of mechanical skills, conceptual skills and planning skills. Exploring the cooking competence of the study group, is assumed to provide insight and understanding into their food practices.

Methodology:

A theoretical framework (Table 1) was compiled from which a conceptual framework (Figure 1) was developed as a visual representation of the research process. Qualitative data was collected through observation, semi-structured interviews and visual ethnography by means of private documents (food diaries), stimulus techniques and audio-visual materials (photographs) (Creswell, 2014:191).

The conceptual framework guided the study into exploring and describing the current cooking knowledge and cooking skills of these couples, according to their cooking competence dimensions. This was done by means of the qualitative computer data analysis program *Atlas.ti* that assisted in sorting and analysing the data according to the cooking competence dimensions, which formed the themes of the research findings. Some of the preliminary findings will be presented.

TABLE 1: COOKING COMPETENCE DIMENSIONS (Desjardins & Kwartha, 2013; Wagner *et al.*, 2011; Begley & Gallegos, 2010; Short, 2003)

COOKING COMPETENCE	DIMENSIONS	DESCRIPTION:
Cooking knowledge	Perceptual	- Ability to: - Understand recipe instructions. - Work with ingredients. - Judge and group ingredients according to: - Appearance. - Taste. - Colour. - Textures. - Select food with limited resources. - Accessibility to food with limited resources.
	Academic	- Knowledge about: - Food: - Nutrition. - Health requirements. - Safety. - Characteristics. - Origins. - Where to find information (incl. Food labelling). - Understanding the impact of cooking processes. - Understanding the impact that cooking techniques will have on food. - Reason for basic cooking processes. - Insight into the temporal or timing of cooking tasks. - Menu-planning. - Awareness of food trends and fashion.
Cooking skills	Mechanical	- Actual food preparation techniques: - Cutting (active activities). - Grating (active activities). - Steaming (passive activities). - Knowledge of basic food produce and cooking with it. - Ability to make use of kitchen equipment and appliances. - Appropriateness in selecting utensils and appliances according to food preparation activity.
	Conceptual	- Ability to: - Visualise the end product. - Improvise or creative by adapting and substituting recipe ingredients. - To reproduce recipes without following instructions. - Selecting food item according to food preparation skill.
	Planning	- Be able to visualise an appealing meal to put together. - Organizational skills and experience: - Budgeting. - Buying and - Storing ingredients - Available time for food preparation. - Multi-tasking: - Time management while cooking. - Performing multiple meal preparation activities simultaneously. - Ability to schedule activities prior to, and during meal preparation.

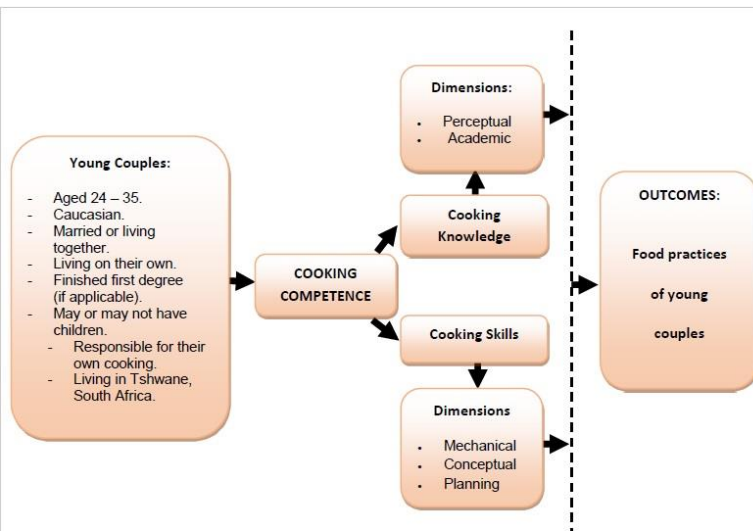


FIGURE 1: THE COOKING COMPETENCE FRAMEWORK OF THE YOUNG ADULT COUPLE RESIDING IN TSHWANE, SOUTH AFRICA

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The study contributed to the Global Challenges Research Fund (GCRF) workshop on production, management, and use of food composition data to support AfroFoods and presented as a poster on the cooking competence of young adults, Tshwane, South Africa, as unobtrusive data through observation, interviews and visual ethnography (food diaries and photo-elicitation).

Global Challenges Research Fund workshop on Production, Management and Use of Food Composition Data to support AFROFOODS

University of Pretoria 5th - 9th February 2018

Cooking Competence of Young Adults, Tshwane, SA

Unobtrusive Data through Observation, Interviews, Visual Ethnography (Food Diaries & Photo-elicitation)

**Miss Lou  lle Ryan; Supervisor: Prof. G.E. du Rand; Co-Supervisor: Dr. A.T. Viljoen
Department of Consumer & Food Sciences: Faculty of Natural & Agricultural Sciences: University of Pretoria**

Department of Consumer and Food Sciences

General information

The Departments of Consumer and Food Sciences merged November 2017 and is now known as the Department of Consumer and Food Sciences. Our research focus is specifically on local and indigenous food produce. There is a lack of information regarding local foods, nutritional information and the food consumption patterns of the urban South African consumer. The Department is addressing some of these aspects.

What are the aims of your organization/department?

Postgraduate students in the department work on local foods such as African leafy vegetables and crocodile, these projects also contribute to the undergraduate subjects such as recipe development. Our research focus areas are on Smart Foods in an attempt to use local foods/ingredients in newly developed food products to improve the nutritional intake of the urban population. There is limited information on what the local African consumer eats especially the modification of traditional foods. We study culinary practices of the modern urban consumer in terms of the ingredients used, preparation techniques, seasoning and flavouring and how they present and consume food. Further research is also done on generating local foods that are more affordable to the consumer. Our professors specialize in local foods (Prof G.E. du Rand), the nutritional intake and the eating and culinary practices of local cultures (Dr A.T. Viljoen) and the sensory aspects of African food produce (Prof. R. de Kock) to name but a few.

How are you funded?

Financial assistance of the National Research Foundation (NRF) towards this research is hereby acknowledged (Grant no 93743).

What food composition data have you produced or published?

My data contributes indirectly to food composition data. I am in the process of analyzing qualitative data for the purpose of exploring the cooking competence of young adults, that provides insight and understanding into their food practices, which gives explication and better understanding of their eating and lifestyle practices.

Future plans and Challenges

Future challenge include the ability to obtain the cooking competence data on a larger scale and not only to obtain insight, but also be able to develop a scale to measure the cooking competence of young adults in South Africa.

Current work

What food composition work are you doing?

I am currently busy with my Master studies where the purpose is to explore and describe the cooking competence in terms of the cooking knowledge and skills of young adult couples residing in Tshwane South Africa. Qualitative data was collected through observation, semi-structured interviews, visual ethnography through private documents (food diaries), stimulus techniques and audio-visual materials (photo-elicitation).

What foods and nutrients are you producing data for?

Data obtained contributes indirectly to food composition data.

Are you analyzing foods?

The data is currently analyzed by means of the qualitative computer data analysis program *Atlas.ti* that assists in sorting and analyzing the data according to the cooking competence dimensions and themes as part of the research findings.

Are you using data from other sources or calculating data?

No

How is the data published

The data will be published as part of my Master dissertation. The preliminary findings have been presented as a poster presentation at the 22nd Biennial International SAAFoST Congress and Exhibition, September 2017 and as a paper presentation at the 7th International Conference on Food Studies, Rome, October 2017. A paper presentation will be delivered at the 3rd International SAAFECS conference in March 2018.

Outcomes

I am interested in the analytical methods to how effectively analyze my own research data. Also to gain knowledge regarding local and cultural food data and to contribute to the course content and study material of various food and nutrition subjects.



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ADDENDUM K:
LANGUAGE EDITING, PROOFREADING AND TECHNICAL EDITING

Language editing, proofreading and technical editing confirmation letters.



Think Digital Limited t/a Grad Coach
409 Beverley Commercial Centre
87-105 Chatham Road South
Tsim Sha Tsui
Hong Kong

Date: 16 November 2022

Re: Confirmation of language editing and proofreading

To whom it may concern

This letter serves to confirm that Lou  lle Ryan has contracted our language editing and proofreading services for their research project titled: Cooking competence of white young adults, residing in Tshwane, South Africa. The scope of such services is outlined on our website:
<https://gradcoach.com/dissertation-thesis-editing-services/>.

Should you require any further information, please feel free to contact us using the details found in this letter.

Kind regards

A handwritten signature in black ink, appearing to read 'ER', followed by a horizontal line.

Dr Eunice Rautenbach

Language Services Manager – Grad Coach

Page 1 of 1

Think Digital Limited t/a Grad Coach | Registration Number: 2904310
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TECHNICAL EDITING LETTER



Cartocom Cartographic Solutions CC
CK 2004/036325/23

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20 February 2023

TECHNICAL EDITING OF DISSERTATION

Cooking competence of white young adults residing in Tshwane, South Africa by L Ryan

I, Ingrid Booysen, hereby acknowledge to have technically edited Louelle Ryan's Master's in Consumer and Food Sciences, at the University of Pretoria.

The process involved broadly a pass for grammar and consistency in spelling, structure, readability, and adherence to relevant style guides. It also included proofreading, and suggestions to rewrite selected paragraphs for clarity reasons. Consistency of specialised terminology was checked and improvements in the structure (levels of headings) were suggested. The verifying of all of the above took place after the document's content was approved by the supervisor and co-supervisor.

Graphic and cartographic design skills (for tables, figures and maps), creating or improving visual content to enhance the communication of the message, were also implemented.

SUMMARY OF WORK: 2018 - FEB 2023

- **As Technical Editor**
 - 11 x Master's and PhDs (University of Pretoria, University of South Africa & Sefako Makgatho Health Science University)
 - 2 x Reports (University of Pretoria)
 - 3 x Journal Articles (University of Pretoria, University of South Africa & Sefako Makgatho Health Science University)
- **As Geographer**
 - Chapter content contribution by Prof G du Rand & Dr H Fisher, University of Pretoria)
- **As Graphic Designer**
 - 3 x creation and design of conceptual models (University of Pretoria)
 - 3 x Academic posters & PowerPoint presentations
 - 15 x figures for Journal articles (University of South Africa)
- **As Cartographer**
 - 18 x creating original maps from text descriptions. (University of Pretoria & University of South Africa)
 - 7 x maps for Protea Bookshop & Publishing

Ingrid Booysen

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ADDENDUM L:

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