

The development, standardisation and acceptability of the traditional Tsonga-Shangaan dishes, *Xigugu* and *Xiendla hi vomu* for use in ethnic restaurants

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The development, standardisation and acceptability of the traditional Tsonga-Shangaan dishes, *Xigugu* and *Xiendla hi vomu* for use in ethnic restaurants

by

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**Script submitted in partial fulfilment of the requirements for
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**Department of Consumer Science
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**Study Leader: Dr AT Viljoen
Co-Study Leader: Dr GE du Rand**



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This work is dedicated to my late brother Sipho, my Dad, my Mom and also to my daughter!



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Declaration

I, **Molly Thembi Malaza**, hereby declare that the dissertation for the **Master's Degree in Consumer Science** at the University of Pretoria, submitted by me, has not previously been submitted for a degree at this or any other university and that it is my own work in design and execution and that all reference material contained herein has been duly acknowledged.

MOLLY THEMBI MALAZA

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Abstract

The development, standardisation and acceptability of the traditional Tsonga-Shangaan dishes, *Xigugu* and *Xiendla hi vomu* for use in ethnic restaurants

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Department: Consumer Science
Degree: Master's Degree in Consumer Science

The recent increase in the number of tourists interested in cultural and food tourism has meant that more authentic traditional foods ought to be on offer at cultural villages and ethnic restaurants. Shangaan cultural village is an establishment where tourists can experience the Tsonga-Shangaan ethnic culture in South Africa. It is well known that when people visit such establishments, they primarily want to experience the cuisine of the culture or cultures of the ethnic groups presented to them.

With the limited information available on the food habits of South African population groups generally it is impossible to know and explain why certain foods are chosen and accepted. One of the problems about traditional dishes is that their preparation methods have mostly been shared by word of mouth, and not as documented recipes. Yet it is important that when people visit cultural villages depicting certain population groups they receive information about the group's eating habits. A need therefore arises for the development and standardisation of recipes for use in cultural villages and restaurants specialising in traditional cooking.

The study was conducted two phases. The first goal was to **develop** and **standardise** recipes for the two traditional Tsonga-Shangaan dishes, *xigugu* and *xiendla hi vomu* for inclusion in the menu of ethnic restaurants. The **second goal** was to determine their **acceptability**, by leisure tourists visiting a cultural village where the restaurant is situated. Phase I followed the principles of **action research** to develop and standardise the recipes. This was done as a cyclic process in three stages, recipe verification, product evaluation and quantity adjustment, was implemented. The second phase of the study was **exploratory-descriptive** in nature. The overall purpose of this phase was to gain comprehensive insight into the acceptability of the two traditional dishes at the Shangana cultural village, by analysing and interpreting the results of this study.

A quantitative research approach was adopted for this empirical study with a questionnaire as the main research instrument. Although quick and easy to complete and relevant to the topic, a time constraint was experienced in its completion, because most tourists were in tour groups and had to follow a set programme. However, reliability of the collected data could be attributed to the accuracy and precision of information supplied by the respondents.

From the results of the survey it was clear that the tourists liked the two dishes very much. Most of the respondents who were more accepting of the two dishes were those who ate cereal and legume dishes frequently. The Tsonga and Venda ethnic groups were more accepting of the *xigugu* and *xiendla hi vomu* than the other ethnic groups.

Overall, the findings confirmed that the sensory attributes, appearance, taste, flavour and texture of the food were considered very important in the acceptability and consumption of *xigugu* and *xiendla hi vomu* as did the inclusion of the two dishes as menu items. This was evident when those who had never eaten such food before, began to actually enjoy it.

Keywords: *Xigugu*, *Xiendla hi vomu*, recipe development, recipe standardisation, sensory evaluation, acceptability.



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Chapter 1

THE STUDY IN PERSPECTIVE

1.1 BACKGROUND AND JUSTIFICATION

Local foods and dishes using local products are becoming very popular with tourists as well as the interested food consumer both globally and locally. As local and foreign tourists are progressively paying more attention to other peoples' cuisines and lifestyles, it is important that local foods and cultural dishes are presented in restaurants and cultural villages where tourists are most likely to partake in and experience the authentic cuisine of another country (George, 2001:234; Sparks, Wildman & Bowen, 2001; Ilbery, Kneafsey, Bowler & Clark, 2003: 210; Hashimoto & Telfer, 2006; Allen & Hinrichs, 2007: 145; Clark & Chabrel, 2007; Woodland & Acott, 2007). A study by Kleynhans (2003: 13) identified that tourists who visit cultural villages in South Africa want a complete authentic cultural experience. Such an authentic experience requires the inclusion of traditional dishes in which local food products are used. In South Africa there are thirteen ethnic groups, and each has interesting dishes as part of their traditional cuisine. These dishes need to be introduced to others. One way of doing this is through serving them in cultural restaurants and cultural villages.

Cuisine can be viewed as part of culture; therefore, a cultural experience should also include food. Moreover, it is noted that tourists' expectations, awareness and interest in cuisine and dining experiences when visiting a destination has increased. This can be largely be attributed to more travelling experiences, which in turn have stimulated people's willingness to try different foods (Long, 1998; Kleynhans, 2003: 2; Boyne, Hall & Williams, 2003; Selwood, 2003: 112). This means there is an increased demand for authentic offerings as tourists seek to experience a country's foods and beverages, its diverse people and the way they celebrate their festivals (Okumus, Okumus & McKercher, 2007).

According to Long (1998) food tourism is a sensory experience utilising all the senses making it central to the tourism experience. Food is seldom the key reason for visiting a destination and most often it is considered as part of the overall destination experience (Boyne, *et al.*, 2003; Long, 2003: 200; Selwood, 2003: 113; Wolf, 2004: 98; Kivela & Crofts, 2006; Comprehensive Culinary Travel Survey, 2007: 2). It is however becoming one of the most important attractions, as tourists search for new and authentic experiences and alternative forms of tourism (Boyne, *et al.*, 2003; Selwood, 2003:113, Henderson, 2004). It is one of the offerings of a destination that can enhance existing tourism products, as it fits the definition of being a blend of individual products, services and experience opportunities. Food tourism is a mixture of natural features, culture, services, infrastructure, access, and attitudes toward tourists and uniqueness. It enhances the total experience of the destination even further as it is the only product that can be experienced using all the human senses, thus deepening the tourism experience even more (Du Rand & Heath, 2006).

Several trends have been identified in the international food industry, one of which that is significant for this study is the growth of the South African tourism industry in that there is a growing demand for the experiences of the natural environment, local cultures, customs/traditions and lifestyles in their original live settings (Kleynhans, 2003: 2). Local and regional food holds great potential to contribute to sustainable competitiveness at a destination (Travel Industry Association (TIA), 2007: 3; Smith & Costello, 2009). The contribution of food to sustainable tourism and the marketing of destinations have both received very little attention globally, as well as in South Africa (Du Rand & Heath, 2006).

Food tourism can be regarded as a form of niche or alternative tourism. Escalating competition and a change in what a tourist wants in terms of destination experience contribute to the uniqueness (Du Rand & Heath, 2006). Local and regional products therefore become an important means of selling the identity and culture of a destination. This enables food producers to add value to their products by creating a tourism experience around the raw materials of a region (Meethan, 2001: 116; Quan & Wang, 2003; Yeoman, Brass & McMahon-Beatie 2006). Food is a reflection of the culture of a country and its people and is therefore the ideal product to offer as an attraction at a destination.

Moreover it offers many possibilities of being used as a good marketing tool (Cohen, 2002; Hall & Sharples, 2003: 210; Long, 2003: 212; Cohen & Avieli, 2004). South Africa, with its nine provinces and 55 tourism regions, although rich in culinary resources and opportunities, has yet to capitalise on its food tourism potential (Du Rand & Heath, 2006).

South Africa's culinary heritage needs to be captured and preserved. Providing more traditional dishes to tourists in cultural villages and restaurants as well as selling them as ready-prepared meals in the retail environment would help in sustaining and showcasing the culinary heritage of South Africa's different cultural groups (Hall & Lew, 1998: 43). Offering such a culinary experience is, however, problematic as most of these recipes, are all small-scale (household) recipes except for those found in the publication by Coetzee and Heydenreich (1994: 65). This book provides recipes of dishes used by black South Africans in general, without referring to a specific cultural or ethnic group. Junod (1962: 211) referred briefly to the limited culinary habits of the Thonga (Tsonga-Shangaan). The study by Malaza, (2000) on the food habits of the rural and urban Tsonga-Shangaan indicated that many of the Tsonga-Shangaan traditional dishes are still consumed frequently.

Cultural tourism is of growing interest to leisure tourists both nationally and internationally (George, 2001: 235). It can be described as travelling to experience the places and activities that authentically represent the stories and evidence of people's' past. This includes traditions/lifestyles, food, dance, music, architecture, arts and crafts, heritage sites and geographical landscape features (Steele-Prohaska, s.a.: 5). Southern Africa has much authentic culture that is rated highly amongst international tourists. The South African tourist authorities have recognised the importance of this market as it is not only one of the main reasons why international tourists visit the country, but is also viewed as a way of exchanging knowledge about cultures with other countries (George, 2001: 235).

Cultural villages and cultural restaurants are known to be places where a person can experience traditional cuisine and participate in an authentic eating experience. Local and foreign tourists are provided with traditional meals of the ethnic or cultural group being portrayed. Cultural villages are popular venues and tourism attractions. They are often the only contact that the local and foreign tourists have with the

various South African cultural groups (Bennett, Jooste & Strydom, 2005: 160; Goeldner & Ritchie, 2009: 120).

There is therefore, a need to develop and standardise traditional indigenous recipes, and to make these dishes available in cultural villages as meals for both the local population and foreign tourists. At present, Western-oriented dishes are provided in cultural villages. These do not reflect the culinary heritage of South Africa (Kleynhans, 2003: 4). Recipes and information on the cuisine of the black South African population are limited. The few contemporary publications on the culinary heritage of South African focus on recipes for small-scale preparation, and limited attention is given to the development and publication of recipes that can be used for larger quantities as would be required in a restaurant of similar food provision operation.

Recipe development and standardisation are important steps for quality assurance. In addition, they assure food product control. They enable a person to predict the quality, yield, the portion size and cost of the finished product (Spears & Gregoire, 2010: 211). The theory supporting recipe development and standardisation stipulates that recipes should be reproducible, economical, concise, interesting, pleasing to the senses and easy to prepare.

When customers enjoy the food they eat at a restaurant, hotel or cultural village, they want to repeat the experience upon returning at some later date. Customers expect the food quality to be as good as the quality they experienced previously on a most recent visit. A foodservice operation that does not duplicate the same food quality every time the product is prepared and served disappoints its customers (Orr, 2000: 8; Reed & Schuster, 2002). The use of standardised recipes is one way of ensuring consistent quality and quantities of a recipe each time it is prepared.

Customers expect the best quality of food that their money can buy, and competition demands that the foodservice operation meets those expectations. By standardising recipes, a foodservice operation is able to meet customers' demands and remain competitive in the industry. To set a standard means to adapt food quality to a level of excellence. The standardisation of recipes is one way of obtaining this high standard that customers have come to expect (Orr, 2000: 8; Reed & Schuster, 2002).

It is particularly important when using dishes to showcase the culinary heritage to foreign tourists.

1.2 PROBLEM STATEMENT

Traditional recipes are often shared by word of mouth and therefore do not have accurate measurements and quantities. All South African ethnic groups have a rich culinary heritage that has not been extensively explored. The Tsonga-Shangaan cuisine for example has many interesting dishes similar to those of other South African ethnic groups which can be prepared with ease at home, in restaurants and at cultural villages. These dishes are excellent examples of local foods that can be developed and promoted for serving to South African and foreign tourists.

There is a need for new and interesting dishes to be offered as menu items in various foodservice operations. The inclusion of traditional, dishes using local foods to provide variety reinforces the need for recipe development and standardisation of traditional recipes (Mitchell & Hall, 2003: 117; Long, 2004a: 190). Cultural villages are establishments which provide food for the local population and international tourists, and therefore they play a major role in the use of local foods in the promotion of South Africa's culinary heritage. Methods to achieve this, in this context, could be by making authentic traditional foods and dishes available on the menu at such venues (Morris & Buller, 2003; Long, 2004b: 163; Maxey, 2007: 45; Goeldner & Ritchie, 2009: 120). The acceptability of these indigenous dishes should also be determined.

There is, thus a need to capture, develop and standardise recipes based on traditional fare that can be used for producing the large quantities that are required for use in restaurants and cultural villages that are visited by tourists thereby reflecting the unique culinary heritage of South Africa.

When the gaps regarding the relationship between the food served and its contribution to the cultural experience were recognised, the managers of Shangana and Thokozela Leisure management were approached and asked whether the

research project could be undertaken at their site. The aim of the research from the researcher's point of view was discussed and clarified. The gaps were determined by observing what dishes were on the menu presented at the cultural village. The researcher saw a great opportunity to introduce the two dishes as they were not part of the menu at Shangana.

1.3 AIM AND OBJECTIVES

This study aims to develop and standardise two traditional Tsonga-Shangaan dishes (*xigugu* and *xiendla hi vomu*) for use in ethnic restaurants and to determine the acceptability of these developed and standardised dishes for tourists visiting such a restaurant.

Specific objectives and sub-objectives were formulated for each of the phases of the study.

For phase I the following objective was formulated:

- ❖ To develop and standardise the selected Tsonga-Shangaan dishes namely, *xigugu* and *xiendla hi vomu* for large scale food production.

The following objective and sub-objectives guided the second phase:

- ❖ To determine and describe the acceptability of the standardised dishes *xigugu* and *xiendla hi vomu* when served to tourists at Shangana cultural village.
- ❖ To determine the acceptability of *xigugu* in terms of the sensory attributes of appearance, taste and texture when served to tourists at Shangana.
- ❖ To determine the acceptability of *xiendla hi vomu* in terms of the sensory attributes of appearance, taste and texture when served to tourists at Shangana.
- ❖ To determine the overall acceptability of *xigugu* and *xiendla hi vomu*.

- ❖ To determine the intention of consumption of *xigugu* and *xiendla hi vomu* at cultural villages such as Shangana.

1.4 APPROACH TO THE STUDY

The study was conducted in two phases. In phase I of the study development and standardisation of the two traditional Tsonga-Shangaan dishes (*xigugu* and *xiendla hi vomu*) took place through the process of action research. An exploratory-descriptive research approach was followed in phase II to determine the acceptability of the two dishes. A quantitative research design and research techniques were employed. A structured questionnaire with open and closed-ended questions was used to determine the acceptability of the standardised dishes.

1.5 STUDY AREA AND THE TSONGA-SHANGAAN CULTURAL GROUP

This study focuses on two traditional dishes of the Tsonga-Shangaan people, one of the smallest population groups in South Africa representing only 5,6 % of its population. Originally, the Tsonga-Shangaan group was formed by two main groups, the Thonga and the Shangaan (Junod, 1962: 14; Kriel & Hartman, 1991: 16). The Tsonga are said to have originated in Mozambique and are related to the Tsonga that live there now. As they moved westwards, they not only brought along their own cuisine with them but also adopted the cuisine from the Shangaan and the Nguni population groups they met up within South Africa. Thus the Tsonga-Shangaan cuisine developed and became part of the culinary heritage of South Africa. Although the Tsonga-Shangaan people now live all over South Africa, the Tsonga-Shangaan people mainly reside in Gazankulu, (see the map Figure1.1) which is situated in the Limpopo province. A small percentage of this group, also settled in Gauteng province, mainly in the Pretoria and Johannesburg regions.

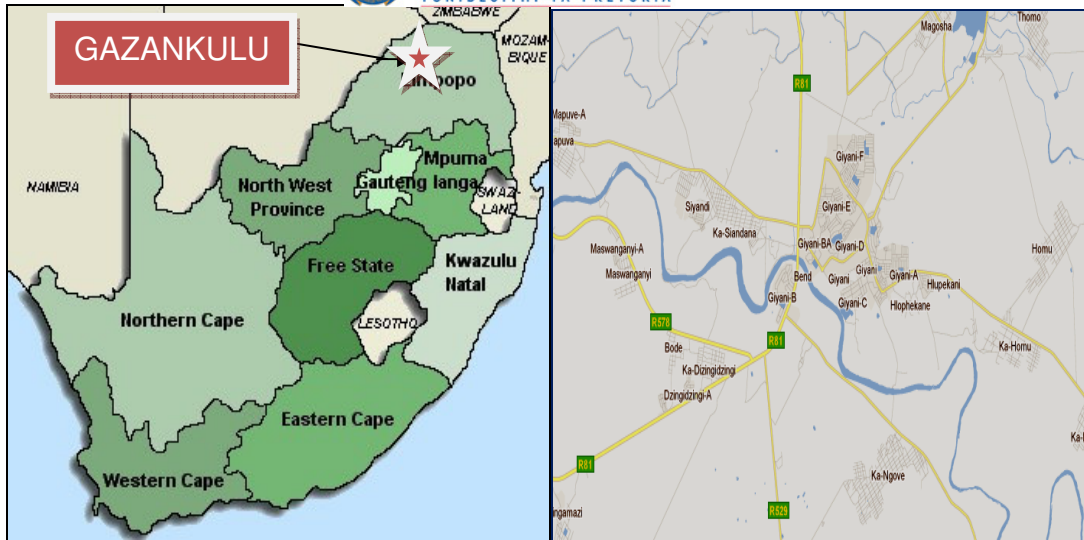


FIGURE 1.1: MAP, SHOWING THE LOCATION OF GAZANKULU (LIMPOPO PROVINCE) WITH ITS CITIES, TOWNS, VILLAGES AND ROADS

Shangana is a cultural village chosen for the study. It is just 5km from the small town of Hazyview, in the province of Mpumalanga, one of South Africa’s nine provinces (see Figure 1.2). It is a cluster of traditional villages midway between the Blyde River Canyon and the southern Kruger National Park. Residents of these villages invite guests to share in the way of life of the Tsonga-Shangaan people. Shangana was created and built by local people, the (Mapulana community), and they take great pride in preserving the rich heritage of the Tsonga-Shangaan people as an example of Africa’s great cultural diversity. Shangana is a place where tourists (local and international) can experience the authentic culture of the Tsonga-Shangaan population group of South Africa. This cultural village also offers conference facilities to corporate tourists, and hosts other functions such as weddings and banquets. Tourists are taken on midday and evening guided tours to each of the different tribal homesteads where they are exposed to the Tsonga-Shangaans’ traditions and customs. Cultural villages in South Africa (such as Shangana), unfortunately, do not meet the requirements of a single complete cultural culinary experience as the cultural dishes tend to be prepared with or mixed with Western-oriented foods. The culinary experiences, therefore, are not always based upon an authentic and cultural specific cuisine (Bennett, *et al.*, 2005: 120; Goeldner & Ritchie, 2009: 8; Sims, 2009).

It was deemed appropriate to conduct the second phase of the study at a cultural village. Shangana provided the perfect setting in which to test consumer acceptability of the two developed recipes as both local and foreign tourists visit these villages. Shangana cultural village was ideal as consumer sensory test setting where it could be done in a real life situation.

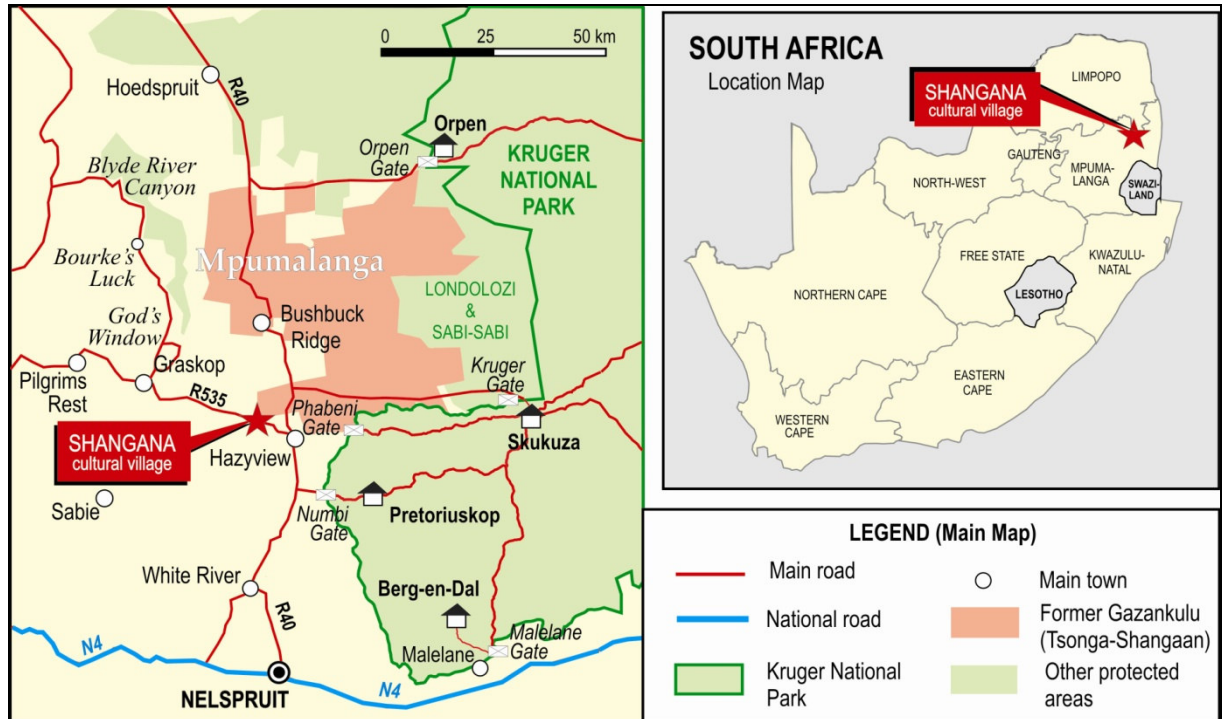


FIGURE 1.2: MAP, SHOWING THE LOCATION OF SHANGANA CULTURAL VILLAGE IN HAZYVIEW (MPUMALANGA)

1.6 DELIMITATIONS

The following delimitations were set out for the study:

- ❖ The study only focused on the development and standardisation of the two mentioned Tsonga-Shangaan dishes and did not include marketing or selling of the products.
- ❖ The consumer sensory evaluation focused only on tourists who visited the Shangana cultural village.

- ❖ The consumer sensory evaluation focused only on tourists who were 18 years and older and who could express themselves easily in English.
- ❖ The consumer sensory evaluation included only those tourists who consume legumes, nuts and cereals and excluded those who were allergic to legumes, nuts and cereals.

1.7 OUTLINE OF THE RESEARCH REPORT

The written text of the research report is presented in six chapters following the outline given in Figure 1.3.

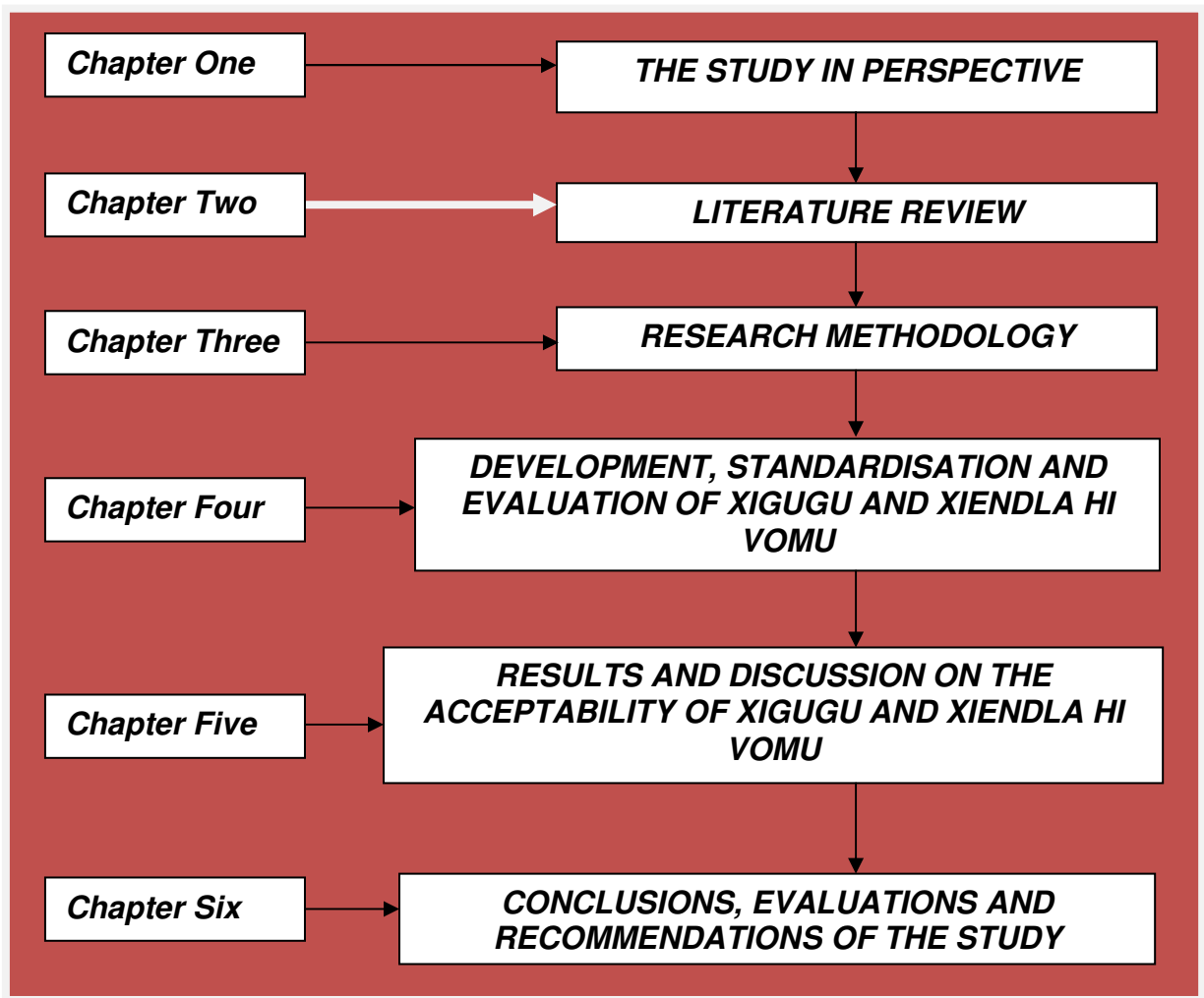


FIGURE 1.3: AN EXPOSITION OF THE STUDY

An outline of these chapters is provided below:

Chapter 2: Literature Review

Thorough descriptions of the most important concepts as contained in the research question are presented. This chapter formed the basis of the framework that embodies the main concepts of the study.

Chapter 3: Research Methodology

This chapter describes the plan according to which the research was executed. The research design, choice of participants, data collection techniques and procedure, data sources and analysis are described in this chapter. Measurements put in place to increase the quality of the data and to curb research errors also receive attention.

Chapter 4: Development, Standardisation and Evaluation of Xigugu and Xiendla hi vomu

This chapter gives an overview of the recipe development and standardisation process and also presents the phase with the findings of the process of recipe development, standardisation and evaluation. Adjustments to quantities of ingredients and methods are justified and described

Chapter 5: Results and Discussion on the Acceptability of Xigugu and Xiendla hi vomu

In this chapter a profile of the participants is presented. The respective objectives are discussed according to the findings obtained from the information supplied by the research participants.

Chapter 6: Conclusions, Recommendations and Evaluations of the Study

This chapter draws conclusions from the findings of the study. Suggestions and recommendations for future research are offered. Finally, an evaluation of the study is given in terms of its reliability and validity.

1.8 SUMMARY

This first chapter has given a perspective against its background and justification of the study. The study objectives, the study area and ethnic group concerned, the approach to the study and its delimitations were specified. Finally, an outline of the ensuing chapters of the study was presented.

In Chapter 2 a review of the literature relevant to the study and the conceptualisation of the main concepts are presented.

Chapter 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter focuses on the literature review where the main concepts of this study are conceptualised and explicated. In order to address the relevant aspects related to this study, the literature review will be organised in four parts. The first theme addressed will focus on cuisine with specific application to the Tsonga-Shangaan; the second theme on the introduction and description of *xigugu* and *xiendla hi vomu*; the third theme will be on the recipe development and standardisation process and the fourth and final theme in this chapter relates to the measurement of food acceptability leading to food acceptability.

2.2 CUISINE

Cuisine is derived from the French word *cuisine* which means culinary art or cooking. It is a specific set of cooking instructions, practices and methods, often associated with a specific culture, place or country of origin. It refers to methods of food preparation and presentation that expresses the aesthetic, social and nutritional ideals of people or a culture (Fieldhouse, 1995: 52; Rozin, 2000: 112; Worobey, Tepper & Karanek, 2006: 208; Rozin, 2007: 20). It is the way different cultural groups select and use ingredients in preparing food. It is culture that prescribes which food may be eaten together and which and how the different types of foods should be processed, cooked, flavoured, and served or presented. It influences the way new food items are incorporated in the diet (Meiselman, 1996:72; Meiselman, 2006: 90; Rozin, 2007: 20). Each of these components of cuisine is briefly discussed.



2.2.1 Choice of ingredients

All cultures make selections of basic food items which are largely shaped by geography, in other words what is locally available. Choices of ingredients whether of animal or plant foods, are usually preserved. The selection of basic foods depends on a wide variety of factors such as availability; environmental variables like, climate, soil and precipitation; ease of production; cost of importation; nutritional benefits; palatability; and religious or social sanctions (Rozin, 2005; Meiselman, 2006: 91; Rozin, 2006: 15; Rozin, 2007: 20).

2.2.2 Methods of preparation

These are the ways in which people in any culture change their basic foods to make it edible. Each and every culture select their cooking techniques based on environmental factors such as the kind and availability of fuel, the nature of the ingredients to be processed and technology (Meiselman, 2000; Rozin, 2000: 26; Rozin, 2007: 20). Basic preparation methods are classified in three categories namely:

- (i) processes that change the physical size, shape, or mass of the food. This includes techniques such as chopping or slicing;
- (ii) processes that alter the water content of foods, by adding or removing liquid, also including drying, soaking, smoking or marinating; and
- (iii) processes that change foods chemically such as roasting, baking, boiling, frying and preservation methods such as fermentation (Meiselman, 2000; Rozin, 2000: 27; Rozin, 2007: 20).

2.2.3 Flavourings and seasonings

Flavour in food can be achieved by the taste of cooked food in addition to the other flavours provided by the foodstuffs themselves and the cooking techniques by which they are prepared. Flavour is a complex phenomenon involving the interaction between the four basic taste systems, namely the receptors for sweet, sour, salty and bitter; and the pain receptors stimulated by temperature; together with irritants such

as peppers and ginger which people use to flavour food (Meiselman, 2000; Rozin, 2000: 27; Rozin, 2006: 17).

2.3 TSONGA-SHANGAAN CUISINE

Every culture prepares food, and at the same time has its authentic cuisine. The authenticity of the ethnic/regional food can be described as the food consumed by the population or inhabitants of a specific country, when they still had traditional lifestyles (Kuznesof, Tregear & Moxey, 1997; Fandos & Flavian, 2006; Espejel, Fandos & Flavian, 2007). Authentic food links the traditions and heritage and the characteristics of a specific region where the people originally lived.

Elements that contribute to an understanding of the factors that make food authentic relate to recipe ingredients, method of cooking and flavourings which are unique to an area or population (Kuznesof *et al.*, 1997; Fandos, *et al.*, 2006; Espejel, *et al.*, 2007). The Tsonga-Shangaan people consume a variety of foods. They usually prepare their food using different ingredients with all the dishes they cook. For example legumes are considered the most basic ingredients for relishes and meat dishes. Maize also is the staple food of the Tsonga-Shangaan people.

The meal pattern, meal composition, food preferences are discussed briefly to give one an idea what the Tsonga-Shangaan people eat, how many meals per day and what combination of food do they eat.

2.3.1 Contemporary mealtime characteristics of the Tsonga-Shangaan cuisine

The meal pattern, meal composition and food preferences are discussed briefly to give an idea of what the Tsonga-Shangaan people eat, how many meals they partake in per day and what combination of foods they eat.

Meal Pattern

The study by Malaza (2000) on the food habits of rural and urban Tsonga-Shangaan people revealed that in modern times they enjoy three meals a day with snacks in-between. The first meal of the day is served in the early morning (between eight and ten o'clock). The second meal of the day is served in the afternoon (between one and three o'clock). Supper is the third meal of the day and consist of the same dishes as the midday luncheon, but is more substantial (Malaza, 2000; Viljoen & Gericke, 2001). This pattern is accompanied by a fairly set routine as far as the type of food eaten is concerned. Cereal and relish dishes are consumed as the main meal on weekdays but meal composition differs from what is eaten over weekends

Meal Composition

A study done by Malaza (2000); Viljoen and Gericke (2001) indicated that cereal and relish dishes are consumed as the main meal on weekdays. A different eating pattern on weekdays and weekends was indicated of different ethnic/cultural groups.

Breakfast consisted of soft maize porridge or ready to eat breakfast cereal with milk and sugar and bread with jam, butter, peanut butter with tea or coffee. Lunch consisted of the left over from the supper or the same food eaten for supper will be prepared. In some instances bread with jam, butter, peanut butter, polony, eggs and cheese with atchaar and homemade fried chips are consumed with tea or coffee. Supper: usually consisted of a cereal and meat dish with some green leafy vegetables.

Over weekends, the meal pattern and meal composition for breakfast is similar to the one prepared during the week. Sometimes food like bacon, Viennas sausages, eggs and meat sausages are a preferred option for a change. Lunch on Saturdays usually does not differ from the weekday meal. On Sundays, lunch is the main meal, and includes a meat dish, generally chicken with starch dishes (rice, mealie rice, potatoes) and a variety of vegetables and salads. Jelly and custard or canned fruit with custard or a special pudding are served for dessert.

Food Preferences

Food and beverage preferences are rather specific. The staple food of Tsonga-Shangaan people is maize which is the basis of a variety of cereal products such as samp, rice, mealie rice with fresh maize being most preferred. Bread (mainly brown) is eaten at breakfast and at lunch by school going children. Vetkoeks (deep fried yeast-dough cakes) are enjoyed as a treat especially during winter. Meat, in various forms, is eaten daily and beef, mutton, chicken, boerewors (traditional spiced South African sausage), minced meat, chicken feet, hearts, gizzards, necks, ox offal, liver, kidneys, ox or sheep head, tongue and tail are all popular (Malaza, 2000; Viljoen & Gericke, 2001).

Vegetables and fruits are consumed but in fairly small quantities. The most preferred are cabbage, leafy green vegetables and legumes because they are also used as a relish or to extend the meat dish. Potatoes, onions, tomatoes, carrots, varieties of pumpkins, sweet potatoes and beetroot are some of the most widely eaten vegetables. Fresh fruit is very popular because fruit trees are grown in the peoples' own yards in Limpopo. From the variety of fruits consumed, mangoes, apples, bananas, peaches, avocados and oranges are the most popular. On Sundays and special occasions, canned fruit salad is served as a dessert with custard, pudding, jelly or on its own. Flavourings are added to all cooked dishes (Malaza, 2000; Viljoen & Gericke, 2001).

Tea is the most consumed beverage because it is quick and easy to prepare. Depending on affordability, sweetened squashes (Oros, Sweetos, Wild Island) are generally important thirst quenchers. Cold drinks are less consumed because they are too expensive for the people to drink every day. Mageu a slightly fermented soft maize porridge, is drunk to take away the hunger. Milk and its products such as yoghurt and sour milk are consumed almost daily (Malaza, 2000; Viljoen & Gericke, 2001).

A national cuisine is what is, or what is thought of as, the normal or typical food of a country (Fieldhouse, 1995: 53). There are four universal components of cuisine, namely, (1) the choice of ingredients, (2) methods of preparation, (3) seasonings and flavourings that define the main dishes and (4) rules governing the use of food

(Fieldhouse, 1995: 52; Rozin, 2000: 112; Worobey, *et al.*, 2006: 208; Rozin, 2007: 20). These components of cuisine will be discussed in details in terms of the Tsonga-Shangaan cuisine.

2.3.2 Choice of ingredients used in the Tsonga-Shangaan Cuisine

The Tsonga-Shangaan people consume a variety of foods. They usually prepare their food using different ingredients with some being basic to all the dishes they cook. For example, legumes are considered the most basic ingredients for relishes and meat dishes. Maize is the staple food of the Tsonga-Shangaan people.

2.3.2.1 Cereal grains used in the Tsonga-Shangaan cuisine

Maize is the single most important cereal eaten in Africa. Only maize will be discussed in this study as it is the staple grain of most African people and the main ingredient in both *xigugu* and *xiendla hi vomu*.

Maize

Maize, (*Zea mays*), is also known as *mielies* (Afrikaans); *lefela* (Pedi); *chibahwe*, *poone* (Sotho); *godhi* (Shona); *mavhele* (Venda); *umbila* (Zulu). It is the single most important staple grain cereal eaten by millions of southern Africans from different ethnic groups (Quin, 1959; Van Wyk & Gericke, 2000). It is commonly known that white maize is more popular than yellow maize in South Africa even though the latter is very high in Vitamin A (Quin, 1959: 211; Van Wyk & Gericke, 2000: 5). In preparing the two dishes (*xigugu* and *xiendla hi vomu*) maize is the main cereal. See maize (Figure 2.1).



FIGURE 2.1: MAIZE

Maize as part of the Tsonga-Shangaan cuisine

As the most important staple grain, maize meal is used to make plain soft, stiff and crumbly porridges. It is usually mixed with water and allowed to ferment in order to prepare either soft or stiff sour porridges (Malaza, 2000). In African cuisine, maize meal porridge is combined with vegetables such as pumpkin (*tshopi*) and legumes such as cowpeas, peanuts and jugo beans. Maize is eaten grilled or roasted on a grid or open fire; it is also boiled whole and eaten on its own.

2.3.2.2 Legumes used in the Tsonga-Shangaan cuisine

Three varieties of leguminosae play an important role in the culinary art of the Tsonga-Shangaan namely: the groundnuts/peanuts (*timanga*), jugo beans (*tindluwa*) and cowpeas (*tinyawa*). They are usually used as a substitute for meat or are added to meat or vegetables dishes to make a rich filling relish or stew.

Legumes are important foods in many parts of the world. They provide protein, vitamins and minerals. Legumes such as peanuts, cowpeas and jugo beans, are dried seeds from plants which belong to the leguminous family (Network for the

Genetic Improvement of Cowpea, 2008: 14; Stephens, 2008: 10; Thomas Jefferson Agricultural Institute, 2008: 7).

As a group, legumes contain approximately twice as much protein as cereals and per portion, about half as much protein as lean meat (Network for the Genetic Improvement of Cowpea, 2008: 14; Stephens, 2008: 10; Thomas Jefferson Agricultural Institute, 2008: 7). Legumes are a good source of amino acids such as, isoleucine, leucine, phenylalanine, threonine, and valine and they are also very high in lysine which is lacking in cereals. This makes legumes a good supplement for cereals. Cereals, on the other hand, complement legumes by providing sulphur containing amino acids methionine and cystine (Network for the Genetic Improvement of Cowpea, 2008: 14; Stephens, 2008: 10; Thomas Jefferson Agricultural Institute, 2008: 7).

Peanuts

Peanuts (*arachis hypogea*), (Figure 2.2) (groundnut; *grondbootjie* in Afrikaans; *timanga* in Tsonga-Shangaan) are considered an exotic nut similar to the African groundnut which it has replaced in many rural parts of Africa (Van Wyk & Gericke, 2000: 6). The pods that contain peanuts mature under the ground within a fibrous woody shell. The plant is a low, branching, annual vine. In autumn, the vines are loosened from the soil with a plough and the pods are allowed to partially dry before they are harvested (Van Wyk & Gericke, 2000: 6).



FIGURE 2.2: PEANUTS REVEALING SEEDS WITH THEIR BROWN SEED COAT

Peanuts are cooked before they are eaten because they are very unpalatable when eaten raw. They are either roasted or fried (Van Wyk & Gericke, 2000: 8).

Peanuts as part of the Tsonga-Shangaan cuisine

Peanuts are usually eaten whole, roasted as a snack. Ground peanuts are added to green leafy vegetables (*morogo*) as a relish. They are also added to meat, especially dried meat to extend the dish. Grounded peanuts are mixed with maize, cowpeas, jugo beans in *xiendla hi vomu* and they can also be roasted, ground and used with roasted, ground maize to prepare *xigugu*.

Jugo beans

The jugo bean (*Vigna subterranean*) is also known as the Bambara groundnut or African groundnut in English. In other South African languages it is known as *jugoboon* (Afrikaans); *ditloo-marapo* (Sotho); *izidlubu* (Zulu); *tindluwa* (Tsonga-Shangaan). It is a truly African crop plant and regarded as an annual herb with divided leaves on slender leaf stalks. After fertilisation its pale yellow flowers curl down and grow downwards into the ground, so that the fruit develops below the ground. The fruit of the bean is a rounded, single seeded or two seeded pod. In southern Africa, a variety of cultivars, differing mainly in the colour of the seed is found: black, spotted, yellow-brown, red, purple or cream (Haasbroek & Swanevelder, 1996; Van Wyk & Gericke, 2000: 8; Stephens, 2008: 12). See Figure 2.3.

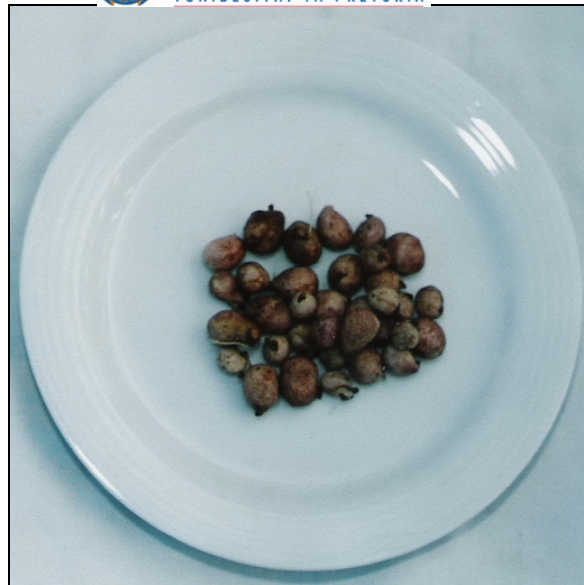


FIGURE 2.3: JUGO BEANS

The jugo bean is indigenous to Africa and is widely cultivated all over the tropical parts of the continent. The beans are mainly grown as source of protein and not for oil production. Immature beans are usually eaten raw or cooked, while ripe ones are often pounded into flour, or soaked and then cooked or roasted in oil (Haasbroek & Swanevelder, 1996; Stephens, 2008: 12). There are many different traditional recipes for preparing dishes from the cooked, pounded or crushed beans. Quin (1959: 211), Junod (1962:211) and Van Wyk & Gericke (2000: 9), mention that a popular way of preparing jugo beans is cooking the ripe bean with their pods in heavily salted water. The soft cooked bean with a high satiety value is popularly eaten as a rich snack.

Jugo beans are often served as a substitute for meat by the Tsonga-Shangaan people and the ripe beans are known to have a high nutritive value (Van Wyk & Gericke, 2000: 9).

Jugo beans as part of the Tsonga-Shangaan cuisine

Jugo beans are also added to green leafy vegetables (*morogo*), in stews, or they are cooked whole and eaten on their own or with other cereals as a meat substitute. They are mixed with maize, cowpeas and peanuts in *xiendla hi vomu* and are used in

the preparation of *tihove*, a dish made from whole grain beans mixed with samp. Jugo beans are often used as meat extenders or substitutes in relishes.

Cowpeas

Cowpea, (*Vigna unguiculata*), is also known as *dinawa* (Sotho, Tswana); *munawa* (Venda); *akkerbone* (Afrikaans); *tinyawa* (Tsonga-Shangaan), is an indigenous African legume which is considered to be an important commercial legume, usually cultivated for its seeds. In southern Africa, the dried cowpeas are a favourite food and commonly form part of other relishes or side-dishes. The leaves and young pods are very popular as green vegetables and are used fresh or dried. (Figure 2.4).



FIGURE 2.4: DRIED COWPEAS

The cowpea is rich in protein (23%), fat (1,3%), fibre (1,8%), water content of (8-9%) and digestible carbohydrates (67%), its energy content is nearly equal to that of cereal grains. Combined with cereals in the diet, the lysine-rich cowpea complements the lysine-poor cereals, while the cereals supply the sulphur containing amino acids needed for a balanced amino acid intake (Haasbroek & Swanevelder, 1996; Network for the Genetic Improvement of Cowpea, 2008: 15; Stephens, 2008: 13; Thomas Jefferson Agricultural Institute, 2008: 11).

Cowpeas as part of the Tsonga-Shangaan cuisine

Cowpeas are added to cooked green leafy vegetable (*morogo*) and used in stews. They are cooked whole, eaten on their own or with other cereals as a substitute for meat. They are mixed with maize, jugo beans and peanuts in *xiendla hi vomu*. They are used in the preparation of *tihove*, a dish made from whole beans mixed with samp. They also serve as meat extenders or substitutes in relishes.

2.3.3 Methods of preparation used in the Tsonga-Shangaan cuisine

Different preparation methods were and still are used to transform food in a way to make it eatable. They usually cut, shred or chop their leafy vegetables in order to cook them by boiling, stewing or simmering. Legumes are usually dried and therefore they mostly soak them before preparing them.

The Tsonga-Shangaan people like their legumes whole or grounded. They would usually add grounded peanuts and other legumes to their meat and leafy vegetables to make them thick and tasty. Before they are cooked with other ingredients, legumes are soaked overnight to make them tender. Peanuts are dried and fried and eaten as snacks. Legumes are sometimes prepared whole by boiling them in water and then eaten on their own (Junod, 1962: 212; Malaza, 2000).

When it comes to cereals, especially maize, they are usually ground to a meal for the preparation of different porridges (soft, crumbly, stiff or fermented) and beer. Usually these porridges are prepared by the boiling and simmering as the main methods of cooking. The Tsonga-Shangaan people boil maize on the cob until soft before eating it. It is also grilled on an open fire. Maize is often dried to prolong its shelf life in order to use it when preparing dishes such as *xigugu* (Junod, 1962: 213; Malaza, 2000).

2.3.4 Flavourings and Seasonings used in the Tsonga-Shangaan cuisine

Cereal dishes especially maize dishes are prepared without any flavouring especially porridges as well as grilled maize on the cob which is naturally flavoursome because of the grilling process (Junod, 1962: 212; Malaza, 2000).

To season and flavour food, salt is the main substance used for meat and vegetables. Most dishes prepared from legumes are seasoned moderately because they are naturally salty especially peanuts. For dishes like *xigugu* and *xiendla hi vomu* peanuts are usually used to flavour the dishes. It was noted that finely ground peanuts were primarily used to season leafy vegetables instead of salt (Junod, 1962:213; Malaza, 2000). Spices that were previously unfamiliar like curry powder, pepper, cinnamon, ginger, mustard, cayenne pepper, chilli powder, nutmeg, turmeric are now frequently used in food preparation (Viljoen & Gericke, 2001).

In the next section the Tsonga-Shangaan dishes, *xigugu* and *xiendla hi vomu* as part of the Tsonga-Shangaan cuisine will be discussed and described in detail as the second theme of the literature review.

2.4 DESCRIPTION OF *XIGUGU* AND *XIENDLA HI VOMU*

Xigugu and *xiendla hi vomu* are two popular and tasty dishes representative of the Tsonga-Shangaan cuisine. These dishes were selected because they are unique, easy to prepare and are popular amongst the Tsonga-Shangaan people especially at traditional gatherings. People from any religious background can consume both these dishes, as they do not contain any ingredients or substances, which may not be eaten for religious reasons.

According to experts who helped during the standardisation process, the expected sensory characteristics of *xigugu* are as follows: the colour of *xigugu* should be golden brown from the roasted then finely grinded peanuts and maize meal. The texture should be compact, not crumbly or falling apart and it should be slightly moist. This dish should have a salty taste and be crunchy and have a nutty flavour. (Figure 2.5)

Xigugu is a dish prepared from coarsely ground maize kernels, which are roasted, then mixed with whole roasted peanuts. Traditionally both were ground using a wooden mortar and a wooden pestle. Salt and sugar are added for taste (Malaza, 2000; Basemzansi, 2004:88). *Xigugu* has a compact texture and it is usually served

as a snack between meals to children and adults. This dish is versatile, as it can be served on its own or can be used to make cakes. The dish can also be made into a crunchy snack or served with ice cream as a dessert, or used as an ingredient in other dishes. It has a good keeping quality and is very economical to prepare. These factors all contribute to the suitability of *xigugu* as a dish for variety of situations where it can be eaten and purchased (Malaza, 2000; Basemzansi, 2004:88).



FIGURE 2.5: XIGUGU

Xiendla hi vomu, is a dish prepared from whole legumes such as cowpeas and or jugo beans, peanuts and maize kernels. The legumes are soaked overnight but the maize kernels are cooked fresh with ground peanuts added. It is prepared by boiling the other legumes in water with a little bit of oil added to prevent them from burning. The cooking time is roughly 3 to 4 hours. Salt is then added for taste (Malaza, 2000; Basemzansi, 2004:67). (See Figure 2.6).



FIGURE 2.6: XIENDLA HI VOMU

Traditionally, *xiendla hi vomu* was served only to special guests, such as the in-laws, parents or people who occupy a high rank in the community. It was regarded as a prestigious dish, usually served during the evening meal, with meat, vegetables or on its own because it is rich and filling. *Xiendla hi vomu* was selected for the study because it is an interesting combination of sweet and salty tastes, and the colour and the texture of the dish is very appealing.

The beans and maize kernels in *xiendla hi vomu* (*tshidzimba* – in Venda; *isienta nga vomu* – in iSiswati) should retain their shape. The colour of the dish should be that of peanuts and cow peas combined with a yellow colour of the maize. The texture should be soft and tender and the dish should have a sweet and salty taste.

In the third theme of the literature review attention is given to the process of recipe development and standardisation.

2.5 RECIPE DEVELOPMENT AND STANDARDISATION

Recipe development and standardisation are important steps in quality development and the quality of the product. It ensures food product control and enables one to predict the quality, yield, portion size and cost of the finished product (Spears & Gregoire, 2010: 211). The theory supporting recipe development and

standardisation stipulates that the recipes should be reproducible, easy to prepare, concise, interesting, pleasing to the senses and economical, (Hullah, 1984: 54).

A recipe should be reproducible, meaning the recipe should be written in such a way that it can be prepared repeatedly with consistent results. It should be easy to prepare and have the minimum number of steps, arranged in a logical sequence in order to produce appropriate final results. The ingredients should be in the easiest possible unit or measure. A recipe should be concise, it should be brief and straight to the point without sacrificing what it should be. It should be interesting, in other words it must have a specific appeal, be unique and should add variety to the menu. When preparing a recipe, it should be pleasing to the human senses that, is the sensory attributes should be appropriate in terms of the dish prepared. It should have a stimulating and satisfying aroma and flavour with an appropriate combination of texture and mouth-feel. The recipe should be pleasing to look at and to eat and lastly when a recipe is prepared, it should be economical. This means that when preparing the recipe, the person who is using it should not only be able to afford to have all the ingredients needed in monetary terms, but also have the time, skills, knowledge, labour, electricity or another source of energy and equipment to prepare the recipe (Hullah, 1984: 54).

A recipe is defined as a written record of the ingredients and preparation steps needed to make a particular dish (Orr, 2000: 12; Reed & Schuster, 2002). Recipes are meant to provide instructions for preparation. They are considered to be a powerful tool to improve efficiency and management, as well as to increase profit in a food- service organisation. Standardised recipes are tailored to suit the needs of an individual foodservice organisation (Orr, 2000: 12; Reed & Schuster, 2002).

Customers expect the best quality of food that their money can buy, and competition demands that the foodservice operation meet these expectations. To set a standard means to adapt food quality to a maximum degree of excellence. The standardising of recipes is one way of obtaining the level of excellence that customers come to expect (Orr 2000: 12; Reed & Schuster, 2002). When customers enjoy the food they eat at a restaurant, hotel, ethnic restaurant (an eatery where traditional/cultural foods are served and or sold) or cultural village, they want to repeat the pleasant experience when they return. Customers expect the food quality to be as good as

the quality they experienced previously. A foodservice operation that does not provide the same food quality every time the product is made and served disappoints its customers (Orr 2000:13; Reed & Schuster, 2002). The advantages of using standardised recipes are as follows: to ensure consistent quality and quantity; to monitor the efficiency of the cook's work and reduce costs by eliminating waste; and to allow staff to answer customers' questions accurately and honestly (Orr 2000: 13; Reed & Schuster, 2002).

In the context of this study, when people visit a restaurant or cultural village they would expect the best quality according with what the experience is costing them and it is of the utmost importance that their expectations are met. This can only be achieved by developing and standardising the recipes of the dishes which are prepared for them.

Recipe development is the process of creating a new recipe or adapting an existing household recipe by using sound scientific techniques according to the objectives set by the particular foodservice operation. This involves the creation of a new unique recipe for the specific foodservice operation through the process of preparation, evaluation and adjustment until the specified requirements are achieved (Swanepoel, Loubser & Visser, 1982: 1-12).

Recipe standardisation is the process of tailoring a recipe to suit a specific foodservice operation. Standardisation requires repeated testing to ensure that the product meets the standards of quality and quantity that have been set (Spears & Gregoire, 2010: 210). A recipe is regarded as standardised when the "well established formulation" of quantities and proportions of ingredients as well as the procedures of combining them constantly produces a highly acceptable product and yield and a given number of portions of a particular size (Swanepoel *et al.*, 1982: 2).

Spears and Gregoire, (2010: 211) describe the recipe standardisation process as a cyclic process of three phases:

- (1) recipe verification;
- (2) product evaluation; and
- (3) quantity adjustment.

The three phases, as proposed by Spears and Gregoire, (2010: 211) are outlined (Figure 2.7) and discussed.

The first phase in recipe standardisation is recipe verification that entails four steps that need to be completed before a product is evaluated. The first step is to review the recipe components such as: the recipe title, recipe category, ingredients, weight of each ingredient, preparation methods, cooking temperature and time, portion size, recipe yield and equipment to be used. The second step involves the preparation of and evaluation of the recipe. The third step is to verify the recipe yield. The fourth step deals with recording any changes to the recipe, if any occurred during its preparation.

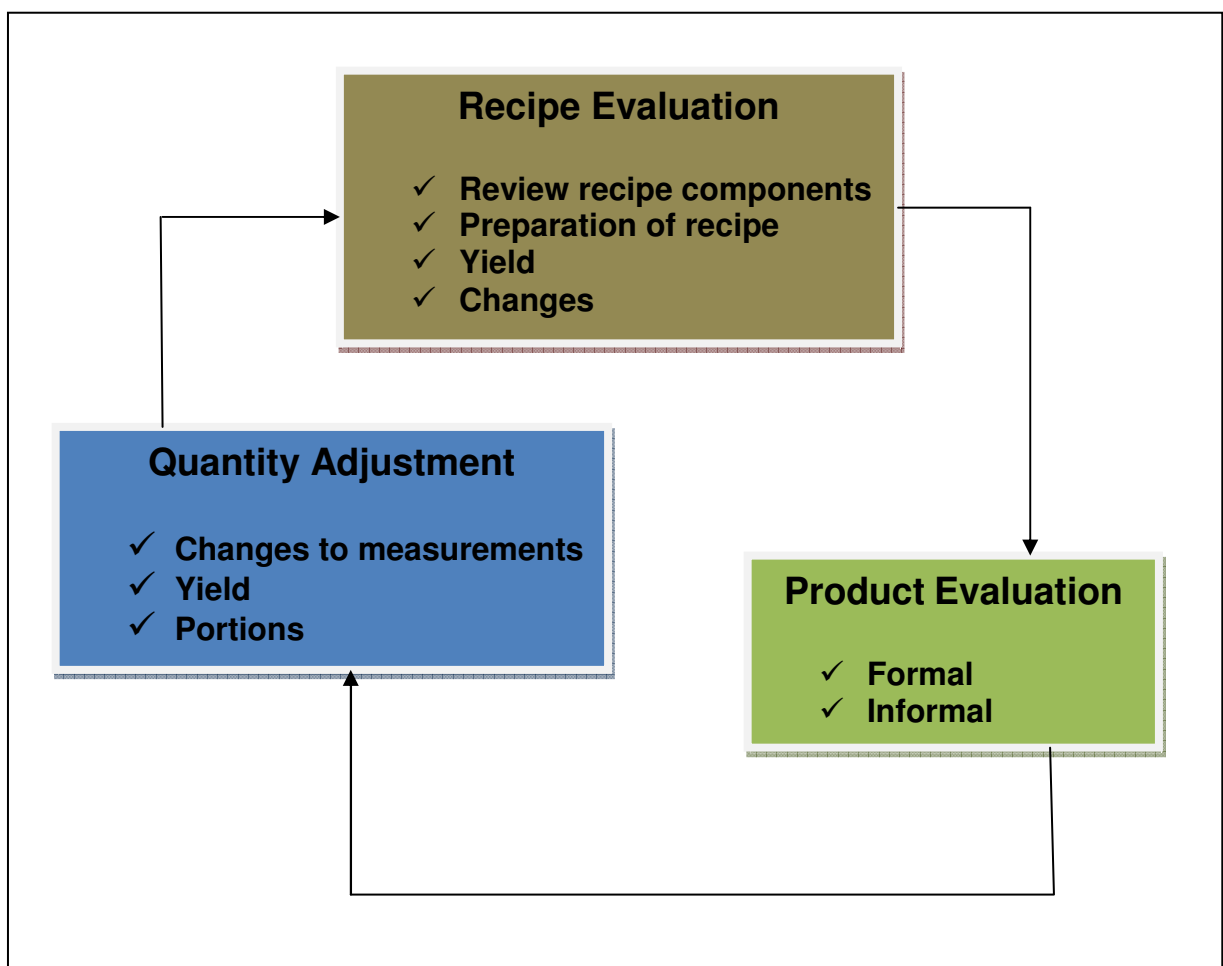


FIGURE 2.7: RECIPE STANDARDISATION CYCLE (Spears & Gregoire, 2010: 211)

The second phase, product evaluation is an integral part of the standardisation process. During evaluation the acceptability of the prepared recipe is determined. Two types of evaluation procedures are usually implemented, namely informal and formal evaluation. Informal evaluation takes place during the standardisation process and the formal evaluation takes place during consumer evaluation to determine the level of acceptability of the product/recipe/dish.

During informal evaluation the focus is on the sensory characteristics of the product. When the appearance, taste, flavour and texture of the product have been evaluated, the ease of acquisition, availability of ingredients, the cost of the dish, and other aspects such as the labour required, the time to prepare the dish as well as the availability of required equipment and skills of employees have to be carefully considered.

The second type of evaluation, namely the formal evaluation is performed after the completion of the standardisation process of the dish or product. This evaluation focuses on how acceptable the dish or product is to the target clientele. Members of the target clientele are then approached and requested to evaluate the dish or product to determine how acceptable they find it (Spears & Gregoire, 2010: 211-213).

Quantity adjustment is the third phase of the standardisation process and there are three methods that are used for the quantity adjustment of recipes. These are the factor method, the percentage method and the use of direct reading measurement tables. This step usually takes place after the first informal product evaluation. Adjustment to ingredients and preparation methods will also be dealt with at this stage (Spears & Gregoire, 2010: 211-213). The factor method is implemented whereby the desired yield of a recipe to be adjusted is divided by the known yield to obtain the basic factor. The procedure of enlargement is to increase the number of portions from 10 to 20 to 40 to 100. The quantities of the ingredients are first to be calculated and the recipes would be prepared.

The fourth and final theme of the literature review pays attention to food acceptability, the factors influencing it and its measurement.

2.6 FOOD ACCEPTABILITY

Food acceptability is an experience or feature characterised by a positive attitude when a food product is purchased or consumed. (Land, 1988: 476; Meiselman, Hirsch & Popper, 1988: 78; Meiselman, 1996: 74; Meiselman, 2000; Rozin, 2000: 30). It is an indication of the attitude toward a degree of liking a food and can be directly measured on a hedonic scale. It is the way that people show, through verbal and nonverbal behaviour, the degree of pleasure or displeasure, which they may be experiencing with a particular food product (Cardello, 1994: 25; Cardello, 1996: 7; Cardello, Schutz, Snow & Lesher, 2000, Meiselman, 2007: 88).

2.6.1 Factors Influencing Food Acceptability

It is important to understand the factors that contribute to a person's acceptance of certain foods and the rejection of others, in order to cater for consumers' needs. Figure 2.8 outlines the three groups of factors which influence food acceptability (Shepherd and Raats, 2006: 48; Randall & Sanjur, 1981).

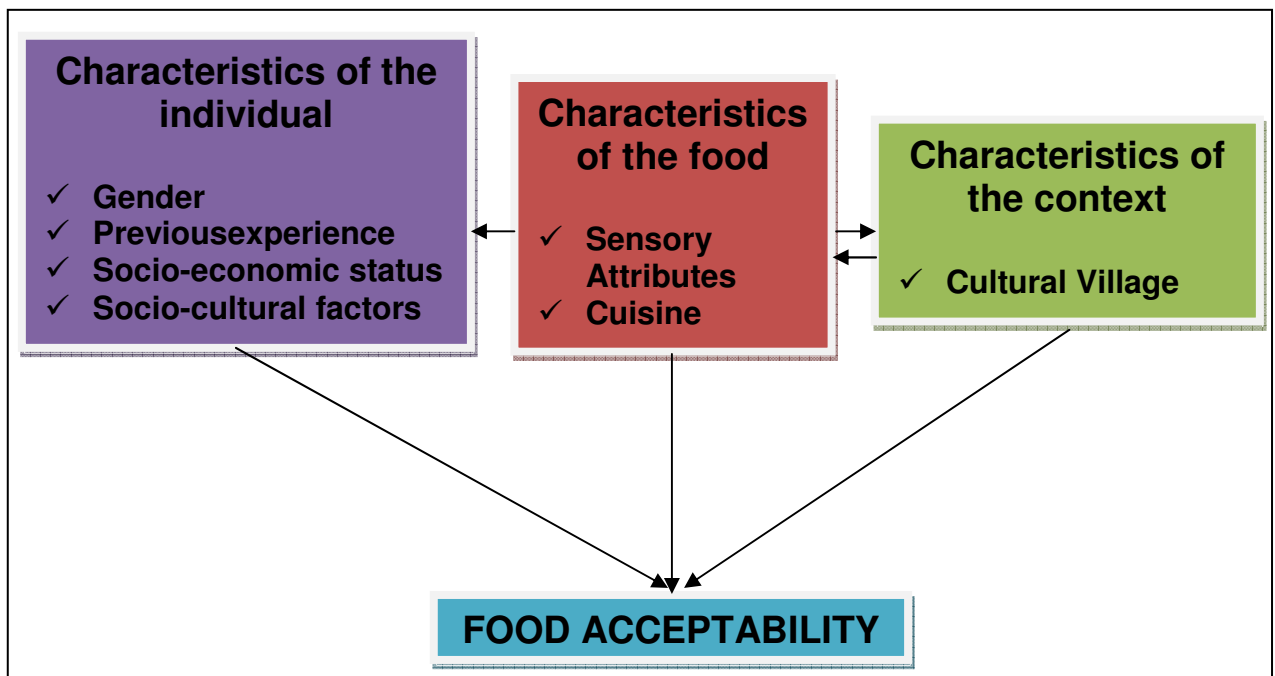


FIGURE 2.8: FACTORS INFLUENCING FOOD ACCEPTABILITY (Adapted from Sobal, Bisogni, Devine & Jastran 2006: 132; Shepherd and Raats 2006: 50)

The first group of factors to be dealt with concerns, the characteristics of the individual. The second group of factors deal with the nature of the food referring to the cuisine and sensory attributes of the food; and the third group of factors is the environment which refers to the different situations in which the food could be consumed. These factors will now be dealt with in detail.

2.6.1.1 Characteristics of the Individual

People have different preferences in terms of the food they eat. There are certain factors which play a role concerning an individual's acceptability of food. The factors that will be dealt with are gender, previous experience, socio-economic status and socio-cultural factors (Connors, Bisogni, Sobal & Devine, 2001; Sobal *et al.*, 2006: 132).

Gender

Gender seems to influence food choice and acceptability. Men and women have different food preferences (Nestle, Wing, Birch, Disogra, Drewnowski, Middleton, Sigman-Grant, Sobal, Winston & Economos, 1998; Mennell, Murcott & Van Otterloo, 1992; Bryant, De Walt, Courtney & Schwartz, 2003: 204). Each gender attaches a different importance to its food choice. Raats, Daillant-Spinnler, Deliza and MacFie, (1995: 227) state that males rate taste as being the most important determinant of food choice followed by nutrition, whilst the women rate nutrition as being most important followed by taste. Men are also not inclined to try different or new foods, while females are more willing to try new or strange foods. Therefore it is important to determine the gender profile of the participants so as to determine whether the majority of people will try authentic (culturally new) food or not. Men and women differ significantly regarding the degree of influence of concern about health. Women are usually more health conscious than men, eating healthily is their motto. Also people from different ethnic groups said that health also plays an important role in influencing their food choice and acceptability (Fieldhouse, 1995: 48; Falk, Bisogni, & Sobal, 1996; Furst, Connors, Bisogni, Sobal & Falk, 1996; Bock, Read, Bruhn, Auld, Gabel, Laurizen, Lee, McNulty, Meidros, Newman, Nitzke, Ortiz, Schutz & Sheenan, 1998).

Because they are regarded as healthy and as having little fat, legumes would be a good choice for women consumers in all contexts (Meiselman, 2000; Rozin, 2005). Women play an important role in influencing the choice of food among men. Therefore, male tourists who are taking along their spouses or partners could be influenced by their women counterparts (Raats *et al.*, 1995: 228). In this study, both men and women would have the opportunity to experience the Tsonga-Shangaan dishes at Shangana cultural village or restaurant in Mpumalanga.

Previous experience

Food perceptions are connected to a person's previous experience with food (Falk *et al.*, 1996; Furst *et al.*, 1996). All individuals are exposed to a certain cuisine and distinctive foods within their culture. This exposure, together with their "appropriate" sensory qualities, or the prohibition of certain foods, tends to influence the individual's food choice and acceptability (Falk *et al.*, 1996; Furst *et al.*, 1996). Past experience with food from other cultures will determine the tourist's willingness to experiment with new or different cuisines.

When visiting other countries, tourists come with their own values and expectations about what is good or desirable for them to eat. Those who have previous experience of cultural villages might want to experience the authentic traditional foods of a particular region and know what to expect. Therefore, when a food is not what they expect it to be, they might refuse to eat it except when it is a totally new dish or recipe (Orr, 2000 14; Reed & Schuster, 2002).

Individuals will interact differently depending upon the degree to which they may be susceptible to changes in different environments due to previous experience. This will ultimately influence the degree of satisfaction (Kleynhans, 2003: 15). For example, when a people choose to eat in a cultural village, they may want to eat authentic food typical of the ethnic group being represented and not Western foods.

Whipple and Thach (1988) reported that people with prior experience had more moderate expectations and reported greater satisfaction than people without previous experience. Previous experience, according to Whipple and Thach (1988) affects expectations for the next purchase, as it sets criteria or standards according

to which the current or future experience will be evaluated. Falk *et al.* (1996) and Furst *et al.* (1996) substantiates the above statements, as she states that food perceptions can be viewed as the outcome of previous real food experiences. Therefore, ideas and information acquired through past experience, such as trying different food, also affects people's approach towards the food (Furst *et al.*, 1996).

According to McIlveen and Chestnutt (1999); Connors *et al.* (2001) and Sobal *et al.* (2006: 134) there is an increase in tourists' expectations, awareness and interest in cuisine. They substantiate this view when they state that people's tastes, needs and expectations are continually changing and becoming more complex and adventurous, as people search for novelty and excitement. The increased interest can be explained by means of the following:

- (1) the perception that there is an increase in people's travelling experiences, which in turn has increased their willingness to try different foods; and
- (2) multiculturalism (Sparks *et al.*, 2001; King, Webber & Meiselman, 2004; Hirsch, Kramer & Meiselman, 2005).

Socio-economic status

It is usually true that a person with a low income will be more careful when it comes to buying foods than a person with a medium or high income (Falk *et al.*, 1995; Furst *et al.*, 1996; Bock *et al.*, 1998). Money is an important tangible resource because it affects the scope and nature of food choice decisions. It is important that the dishes should be affordable to both low and high-income tourists to enable them to experience the cultural cuisine of the country generally and the specific ethnic group visited.

Socio-cultural factors

Food has a number of meanings and associations. This is evident from our daily experience and social interactions. Food can be used to express friendship and it can also be used as a symbol of social status and prestige (Fieldhouse, 1995: 78; Rozin, 2000: 30; Rozin, 2006: 16). People use food to express respect, for smoothing social relations and for showing concern.

Culture can be described as the sum total of what an individual acquires from his society, those beliefs, customs, artistic norms, food habits, and crafts which come as a legacy from the past, conveyed through formal or informal education (Cowan, Dembour & Wilson, 2001; Bryant, *et al.*, 2003; Reed, McIlveen-Farley & Srugnell, 2003). According to Taylor (1995: 7), culture is the whole of society that unites the arts and laws, behaviours and morals. As previously mentioned, food is an aspect of culture. Therefore, cultural experiences should also include food issues. Culture changes and develops with changes in social and economic structures, with the trends typical of every society. New customs and norms do not replace older ones, but are imposed. They enrich and complicate the food environment (Bergier, 1987:304).

Cultural norms have an impact on both the expectations of tourists and their perceptions of food as culture tends to impact on insight, problem solving and cognition, and often leads to differences in satisfaction levels for a single product amongst different global customers (Rozin, 2007: 20). It can be said that culture, rather than biological conditioning and taste (Fieldhouse, 1995: 200) plays an important role not only as an underlying determinant for what one views as acceptable food, but also for what is appropriate or not (Fieldhouse, 1995: 80).

Long (1998) states that some cultures for whatever reason will be more open to new culinary experiences than others. Therefore, culture will also influence an individual's willingness to try different foods.

Traditions could have a powerful influence on what we eat, what we prefer and what we like. Every culture has traditions relating to the portion, content, duration and context of meals (Rozin, 1996: 19; Rozin, 2000: 31; Rozin, 2005). These traditions and norms may have a surprising amount of control over what food is chosen and consumed, and therefore, in this study, they will influence what the customer satisfaction would be regarding the Shangana meal experience.

Individuals, according to Messer (1984) and Furst *et al.* (1996) learn to accept or reject, like or dislike, prefer or avoid food according to tastes that are transmitted to them as part of a cultural cuisine, as a result of trial and error in the past. Some people learn to accept and even like strong tastes such as chilli pepper because they

experience the sensation as pleasant and associate it with a positive social act of eating (Meilgaard, Civille & Carr, 2007:7).

2.6.1.2 Characteristics of the food

Food is very important to tourists' and is often the major reason attracting people to certain food service establishments such as cultural villages and restaurants. Besides satisfying the physiological needs, it offers pleasure and entertainment and also serves a social purpose in terms of gatherings and getting together (Kahn & Wansink, 2004; Meilgaard, *et al.*, 2007: 7).

Preparation methods, choice of ingredients, seasonings and flavourings and rules regarding the use of food can influence the perception people may have of it. Sensory attributes and cuisine will be discussed as important food characteristics.

Sensory attributes

The chemical and physical properties of food are perceived by a person in terms of different sensory attributes such as the food's appearance, taste, flavour and texture. Within a particular culture there is usually a significant degree of consensus on the appropriateness of particular sensory attributes of foods, although there could be substantial differences between individuals. These differences will partly lead to differences in food acceptance, preference and choice (Shepherd & Sparks, 1994: 49; Hoban, 1999; Civille & Setsam, 2003; Altman, 2004).

Individuals learn to accept or reject, like or dislike, prefer or avoid food according to taste preferences that are transmitted to them as part of their cultural cuisine (Messer, 1984; Furst *et al.*, 1996: 257; Altman, 2004; Lawless, Schlake, Smythe, Lim, Yang, Chapman & Bolton, 2004; Stone & Sidel, 2004: 66; Rozin, 2007: 4). Some people learn to accept and even like strong tastes such as chilli pepper because they experience the sensation as pleasant and associate it with positive social interactions. Tastes and acceptable food combinations are learnt early in life (Lawless *et al.*, 2004; Stone & Sidel, 2004: 66). Therefore, familiarity is another important factor influencing food choice and acceptability. On the other hand, people

desire variety in their diet and, therefore, new foods have to be developed and opportunities created to sample these new or other foods.

Sensory attributes, which correspond with the desired food items, are some of the first factors to influence food patterns and behaviour. Sensory stimuli and perception are highly individualistic for biological and other reasons (Guinard & Mazzucchelli, 1996; Rozin, 1996: 89; Meilgaard *et al.*, 2007: 8). Senses such as sight, touch and smell play important roles in one's initial reaction to foods but taste is ultimately what is important in a food product. Taste keeps a person wanting to come back try the product again or deters them from doing so. Sensory attributes and perceptions play a major role in the acceptance of a food product (Messer, 1984; Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, 2004: 67).

Taste and flavour seem to be the main sensory attributes by which people choose and accept a particular food. Apart from taste, the texture, odour and appearance of the food are also inclusive dimensions of sensory perceptions (Messer, 1984: 218; Cardello, 1994: 67; Cardello, 1996: 255; Furst, *et al.*, 1996: 157).

Appearance

Appearance means the outward look of something. Appearance plays an important role in the acceptability of foods. It may encourage or discourage a person to purchase or consume a product. The presentation of food is important to a consumer's acceptability of food. Past experience and environmental conditions determine foods to have certain colours (Guinard & Mazzucchelli, 1996: 214; Rozin, 1996: 89; Meilgaard *et al.*, 2007: 9).

The appearance of food, especially if it is unfamiliar to the people, is therefore an important factor in creating expectations with regard to the meal experience. It is often said that one eats with one's eyes first. If the food looks good, we think it will taste good. Therefore the appearance of a food product will determine one's initial reaction to the food (Meilgaard *et al.*, 2007: 9).

Taste

As tastes and acceptable food combinations are learnt early in life, according to the literature cited (Messer, 1984: 218; Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, 2004: 68; Meilgaard *et al.*, 2007:10) it was found that later on familiarity is an important factor influencing food choice and acceptability. People do desire variety in their diet, and therefore, new foods have to be developed and sampled with the possibility that they may not be accepted. The sensory attributes and perceptions play a major role in the acceptance of a food product (Messer, 1984: 218; Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, 2004: 68; Meilgaard *et al.*, 2007:10).

According to Furst *et al.* (1996: 157) and Meilgaard *et al.* (2007:12) sensory perceptions are driven mostly by taste and vary widely among individuals. Taste and flavour seem to be the main sensory attribute by which people choose and accept a particular food. A consumer may also select fresh produce on the basis of colour or smell. The sensory attributes, which correspond to these food characteristics, are some of the first factors to influence food patterns and behaviour (Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, 2004: 69; Meilgaard *et al.*, 2007: 12).

Taste is also a highly individual aspect because fundamental taste preferences may be a result of biological factors, which account for innate preferences for sweet tastes and aversion for bitter tastes. However, it is not only consumers' biological aspects that influence their sense of taste, but the environmental and cultural influences as well. People from different regions and cultural backgrounds have different tastes as they are conditioned to accept the tastes of foods which are introduced to them and eaten in that region and culture (Cardello, 1994: 65; Cardello *et al.*, 2000).

Cardello (1994: 65) and Cardello *et al.* (2000) state that the context in which taste is experienced is critical to the degree of pleasantness or unpleasantness that they elicit. No taste can be said to elicit invariably pleasant or unpleasant sensations, without consideration of the context in which they are presented or the expectations that the context creates.

Cardello (1994: 65) and Cardello *et al.* (2000) suggest that tastes also diverge, as people become increasingly educated and affluent. Past experiences have

conditioned us to expect that certain food items will look and taste in a specific way, and any deviation may be off-putting and the product will not be chosen or purchased due to the dissatisfaction it generates (Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, 2004: 70; Meilgaard *et al.*, 2007: 13). Sensory perceptions are driven mostly by taste and vary widely among individuals (Furst *et al.*, 1996: 257; Meilgaard *et al.*, 2007: 13).

Flavour

According to Altman (2004); Lawless *et al.* (2004); Stone & Sidel, (2004: 70); and Meilgaard *et al.* (2007: 17), flavour is a primitive sense and more highly developed and complex than taste, and plays an important role in food acceptance. Flavour is what imparts to something a peculiar smell or taste. Many people also use their sense of smell in the purchase of fresh products such as fruit, vegetables or meat. These items may be rejected because they do not smell right. The aroma of food can also entice a person to purchase a product and even stimulate an appetite.

Although one cannot recall a smell from past experience, smells often conjure up vivid memories (Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, (2004: 71); Meilgaard *et al.*, 2007: 17). These memories can be influential in the choice (due to pleasant memories) or rejection (due to unpleasant memories) of food products, as well as the evaluation of the product as satisfactory or unsatisfactory. These memories will influence the perception or assessment of the meal experience directly, as the people will create expectations regarding the food after having visited the same cultural village or having had a similar experience elsewhere (Rozin, 2000)

Texture

Texture is a sensory manifestation of structure and mechanical properties of food. The universal textural characteristics are crisp or crunchy, tender, smooth, creamy, firm and juicy. Certain characteristics such as hard and soft may be right for some products in some circumstances and not in others and disliked in other products under other circumstances. Others like slimy, greasy, sticky, soggy, lumpy, tough and stringy are generally disliked and are connected with poor quality and improper

food preparation (Cardello, 1994: 68; Cardello *et al.*, 2000; Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, 2004: 67; Meilgaard *et al.*, 2007: 8).

The sense of touch is important particularly in the purchasing of fresh products. A person relies on touch to indicate how ripe fruits and vegetables are or how solid a head of cabbage is (Meilgaard *et al.*, 2007:10).

People in every culture or tradition perceive food differently in terms of the sensory attributes. Some people may be used to spicy food; others may enjoy their porridge soft instead of stiff. Cultures differ in terms of what they eat, how and when they eat and prepare their food. When people are familiar with the food served to them they would easily accept it which is not the case when the food, including preparation methods, flavourings and serving style are unfamiliar.

2.6.1.3 Characteristics of the context

The context in which people indulge in food influences the acceptability of it because there is usually interaction between the food, the environment and the individual who consumes the food. Cultural villages are said to host “cultural restaurants” where mainly traditional dishes of a particular tribe or culture are served (Meiselman, 2000; Rozin, 2000: 33; Kahn & Wansink, 2004; King *et al.*, 2004; Edwards & Meiselman, 2005; Hirsch *et al.*, 2005; Meiselman, 2006: 91).

Tourists may have a chance to experience the cuisine of a particular group of people living in the destination country fully because at places specialising in a unique cuisine people involved with the preparation of traditional food can provide the tourists with the history of the dishes and offer information about the culinary heritage of the local inhabitants.

Context

In this study context will refer to the situation where food is used and will include the physical surroundings and social climate of the setting (Kahn & Wansink, 2004; King *et al.*, 2004; Edwards & Meiselman, 2005; Hirsch *et al.*, 2005; Meiselman, 2007: 70). The concept can also refer to the eating environment or situation. Context also

relates to time, place, circumstances, manner, and who consumes what food or how it is eaten (Kahn & Wansink, 2004; King *et al.*, 2004; Edwards & Meiselman, 2005; Hirsch *et al.*, 2005).

Cultural restaurants (this could also include cafes and snack bars), are places where people eat and drink and could experience or experiment with different foods. They usually provide food for consumers, including visiting tourists and visitors (both local and international) who want something to eat. Cultural restaurants can play a role promoting the different cuisines of a country. It is important that indigenous traditional dishes be served at these establishments because they are also visited by people from other countries and cultures (Kahn & Wansink, 2004; King *et al.*, 2004; Bennett, *et al.*, 2005: 156; Edwards & Meiselman, 2005; Hirsch *et al.*, 2005).

The availability of food products is another aspect that determines the degree of choice to which the consumer is exposed (Furst *et al.*, 1996:254; King *et al.*, 2004; Kahn & Wansink, 2004). If a product is not available in the retail business or on a menu, no one will even look for it or have any interest in it. Consumers buy and eat only what is available to them. When food products such as legumes and cereal products are available, consumers may have a choice to buy, taste and even accept them. This choice is also determined by how knowledgeable consumers are about the products (King *et al.*, 2004; Edwards & Meiselman, 2005; Hirsch *et al.*, 2005).

Meiselman (1996: 78), King *et al.* (2004), Kahn & Wansink, (2004) and Meiselman (2007: 71) are of the opinion that the eating situation (the physical environment and social climate) contributes to the acceptance of food and thus needs to be taken into account when the acceptability of food is measured. Situational or environmental factors, such as the place and context of consumption of ethnic regional food, serve to enhance the perception of authenticity of ethnic regional food (Kuznesof, *et al.*, 1997; Kahn & Wansink, 2004; King *et al.*, 2004).

According to Bell and Meiselman (1995:120), Meiselman (1996: 82), Kahn & Wansink, (2004), King *et al.* (2004) and Meiselman (2007: 71) the eating environment is the physical and social surroundings of the actual eating situation, which is also the context of the eating experience.

The physical environment or context of the meal experience can also be referred to as location. These scholars also state that expectations are situation-dependent. As tourists engage in the destination choice process that would automatically include the eating situation as well, they form and bring with them certain expectations about the destination. The context (food being presented and eaten) may be established either by factors that are physically and concurrently present with the food (Kleynhans, 2003: 18). With this reasoning, foods are considered acceptable or not whether they comply with the consumer's expectations or not.

The contribution of different environments or situational factors in food acceptance should also be taken into account (Meiselman, 1996: 79; Meiselman, 2000). A cultural village can contribute to a tourist's experience through connection to the host culture by means of the host culture's culinary food ways or practices. This substantiates the perception that a cultural-specific menu and food dishes, as well as efficient service would contribute to a larger overall cultural experience of Shangaana for tourists. People respond to more than the tangible product or service being offered. The place and its environment are more influential than the product itself, and therefore setting and location should be taken into account too. As mentioned before, each individual comes to a particular service establishment with a goal or purpose as well as certain expectations relating to these goals (Bitner, 1990; Bitner, 1992) and these needs have to be met according to the purpose and expectations.

2.7 MEASUREMENT OF FOOD ACCEPTABILITY

Food acceptability can be measured by conducting a sensory evaluation test where a hedonic rating scale or preference ranking test could be used (Lawless & Klein, 1991: 2-8 & 18; Schutz, 1994: 115; Lawless & Heymann, 1999: 28; Stone & Sidel, 2004: 19-84). Hedonic rating scales are used to indicate the degree of like or dislike, using numbers, words or facial expressions and body language. These are used to get the extent of liking the food, the sensory attributes and consumption patterns of individuals (Malaza, 2000; Bitner, 1990; Bitner, 1992; Mbhenyane, Venter, Vorster & Steyn, 2005: 34).

Sensory evaluation can be described as the scientific discipline used to evoke, measure, analyse and interpret reactions to those characteristics of foods and materials as they are perceived by the human sense of sight, smell, taste, touch and hearing (Cardello, 1996: 28; Cardello *et al.*, 2000; Stone & Sidel, 2004: 12). Sensory evaluation is an essential step in ingredient testing, product formulation, quality assessment and the measurement of consumer acceptance. It can also provide qualitative information about both the sensory properties of food products and consumer acceptance of the same food product (Altman, 2004; Lawless *et al.*, 2004; Stone & Sidel, 2004: 17).

Sensory evaluation is used to determine whether consumers like a product (acceptance), whether they prefer one products to others (preference), and or whether they intend to consume a product regularly (Altman, 2004; Lawless *et al.*, 2004).

Sensory attributes and perceptions play a major role in the acceptance of a food product (Cardello, 1994: 67; Guinard & Mazzucchelli, 1996). According to Furst *et al.* (1996) sensory perceptions are driven mostly by taste and vary widely among individuals. Taste and flavour seem to be the main sensory attributes by which people choose and accept a particular food. Apart from taste, the texture, smell and appearance of the food are also inclusive dimensions of sensory perceptions (Cardello, 1996: 29; Furst *et al.*, 1996; Rozin, 1996: 89).

When a product is frequently selected and eaten regularly, it usually indicates that it is accepted (Land, 1988: 477), especially when it is eaten with pleasure and satisfaction. In recent studies (Malaza, 2000; Mbhenyane *et al.*, 2005) it was found that the black South African population, in both rural and urban areas, frequently consume traditional dishes prepared from indigenous legumes and cereals. The consumption and frequency of preparation is, however, dependent on the availability of these indigenous ingredients.

2.8 SUMMARY

This chapter has given an overview of the following aspects: the theory of cuisine; the Tsonga-Shangaan cuisine; components of the cuisine in terms of the basic ingredients; method of preparation; flavourings and seasonings which the Tsonga-Shangaan used in the preparation of the dishes. The two dishes *xigugu* and *xiendla hi vomu* were described in terms of the sensory attributes they should have. The recipe development and the standardisation process were briefly outlined and food acceptability was discussed together with the factors influencing it and its measurement. The next chapter will focus on the methodology of the study.

Chapter 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter presents the research design according to which the research was executed. The study was conducted in two phases. Phase I dealt with the development and standardisation of the two Tsonga-Shangaan recipes for *xigugu* and *xiendla hi vomu* for use in cultural/ethnic restaurants. In Phase II the acceptability of these two dishes for customers was determined. After explaining the research design, the study objectives and the methodology of each phase are dealt with followed by the conceptualisation and operationalisation of the main concepts. The sampling procedure, data collection and analysis techniques too are addressed.

3.2 CONCEPTUAL FRAMEWORK

The recipe development and standardisation is indicated as phase I in the upper section of Figure 3.1, with the lower section of the framework representing the second phase which entails the determining of the acceptability of *xigugu* and *xiendla hi vomu* when prepared according to the standardised recipes in the context of a cultural village setting.

The conceptual framework outlines the main concepts which were discussed for phase I and phase II. In phase I which was about the development and standardisation process, the Tsonga-Shangaan dishes *xigugu* and *xiendla hi vomu* were developed and standardised following the three stages:

- (1) recipe verification;
- (2) product evaluation; and

(3) quantity adjustment.

The two dishes were standardised for 100 portions.

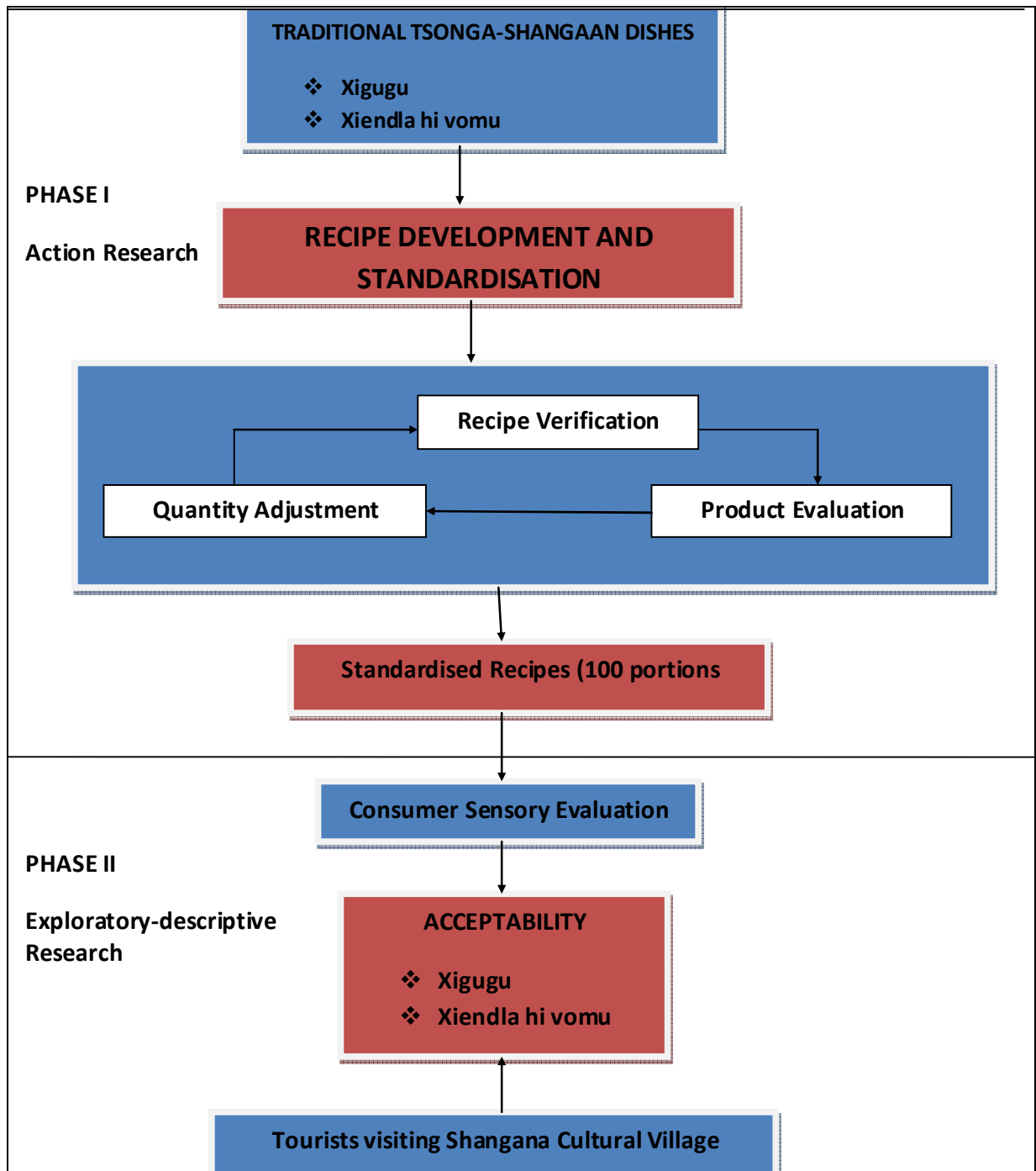


FIGURE 3.1: CONCEPTUAL FRAMEWORK

In phase II, the standardised recipes were evaluated using the consumer sensory test (hedonic 5-point scale) to determine the acceptability level of *xigugu* and *xiendla hi vomu* by the tourists at Shangana cultural village.

3.3 RESEARCH DESIGN

Each of the two phases of the study depicted in Figure 3.1 required a specific research design. The recipe development and standardisation process can be compared to problem solving as it follows similar steps of assessment, adjustment and re-assessment. An action research approach was selected as the most appropriate for phase I. In the second phase, where the acceptability of the standardised recipes was determined by consulting both local and foreign tourist within the context of a cultural/ethnic restaurant, an exploratory and descriptive research design was applied. A quantitative research approach was suitable for the purpose for this work as it emphasises variables in the description and analysis of human behaviour (Babbie & Mouton, 2001: 49). This study is classified as an empirical study.

3.3.1 Phase I: Action research

According to Coughlan and Coughlan, (2002: 222) action research is a research design whereby a scientific approach is followed in order to resolve a problem. The challenge in this study was to develop and standardise two traditional Tsonga-Shangaan recipes for use as authentic dishes in cultural restaurants where they would be produced in large quantities. This method of conducting the research was used because it leads people to take action. In the study people were involved during the tasting of the products and they also gave their inputs on how to improve the products during the standardisation and development phase. Action research is a practical form of research aimed at a specific problem with limited control over the independent variables (Walliman, 2005: 122).

It is also iterative in that the trials were repeated, with new planning based on the lessons learned through reflection of previous experience and action. Action research

is participatory because needs to involve the people who are likely to be affected by the change. This allows the understanding to be widely shared and the change to be pursued with commitment.

Action research comprises interactive cycles of gathering data, giving feedback to the researcher, analysing feedback data, planning the next action, taking action and evaluating again. It is both a sequence of events and an approach to problem solving. Through the process of constant monitoring and evaluation the conclusion from the findings can be applied immediately and further monitored (Walliman, 2005: 121).

3.3.1.1 Objective

The objective for the first phase was to develop and standardise the selected Tsonga-Shangaan dishes *xigugu* and *xiendla hi vomu* for cultural/ethnic restaurants.

3.3.1.2 Conceptualisation

Recipe development and standardisation was conceptualised in Chapter 2, (see 2.4).

3.3.1.3 Operationalisation

The development and standardisation of a recipe consists of the three steps specified by Spears and Gregoire, (2010: 211) as recipe verification, product evaluation and quantity adjustment. These three steps were followed in this study. The procedures on how to enlarge a household recipe for large scale as given by Swanepoel, *et al.* (1982: 1-12), and Payne-Palacio and Theis (2009: 269), and were followed. The recipe development and standardisation process continued until the products were of good quality.

A recipe is regarded as standardised when the “well established formulation” of quantities and proportions of ingredients as well as the procedures of combining them constantly produces a highly acceptable product and yield and a given number of portions of a particular size (Swanepoel *et al.*, 1992: 2). This also implies that the same acceptable sensory attributes of appearance, taste, flavour and texture should

be obtained each time the recipe is produced. The recipes should be without defects, meaning that a consistent quality should be ensured. It should also conform to the characteristics of the original recipe and meet the requirements and specifications set in order to be considered reliable (Hullah, 1984: 56).

3.3.1.4 The origin of *xigugu* and *xiendla hi vomu*

The recipes were given orally to the researcher by Tsonga-Shangaan ladies from Giyani in Limpopo. These ladies were thoroughly enculturated within the Tsonga-Shangaan society and were familiar with their cuisine. The recipes were given to the researcher verbally as these ladies had little schooling and were not able to read and write. These recipes were chosen because they were economical, easy to prepare and were prepared from traditional legumes and cereals. These dishes could be consumed by anybody who enjoyed legumes and cereals and were also suitable for consumption by people from all cultural and religious groups, meaning they suited a variety of cultural palates.

Xigugu was prepared by roasting the dry maize kernels and peanuts, which were then ground. The maize kernels were first sifted before they were mixed with peanuts for a compact texture. Salt was added for taste. *Xiendla hi vomu* was prepared by soaking the cowpeas overnight and cooking them the following day with fresh maize kernels off the cob, ground peanuts and salt. (See Chapter 4 for more details).

3.3.1.5 Recipe standardisation cycle

The recipe standardisation cycle (Figure 2.7 in Chapter 2) was followed and as the first step, the recipe verification was done.

(i) Recipe Verification The researcher prepared and reviewed the existing Tsonga-Shangaan household recipes prepared for household use in order to adjust the quantities and/or preparation methods to obtain products that were authentic and similar to the traditional dishes in terms of appearance, taste, flavour, texture, portion size and yield. The two household recipes of *xigugu* and *xiendla hi vomu* were

standardised until the required desired recognised characteristics (For details see 2.3) were obtained.

(ii) Product Evaluation (Informal) When the evaluation process started and the quantities of the ingredients stipulated in the household recipes were increased, twenty-five students and personnel from the University of Pretoria who were familiar with the dishes were asked to be involved with the sensory evaluation of the dishes throughout the process of the development and standardisation.

The recipe evaluation card (see Addendum A) was used to capture data on the quantity, yield, changes and acceptability and suggestions were also recorded during the evaluation process. Apart from this it served as record of the suggested changes that took place with each increase in quantity enlargement and/or repetition. The ladies also commented and their comments and researcher's were recorded on the recipe evaluation card (see Addendum A). The Sensory Evaluation Card (see Addendum B) was used for the evaluation of the sensory attributes of the dishes after preparation where by the 5-point hedonic scale was used to rate the characteristics of each dish from 1 which indicated dislike extremely to 5 which indicated like extremely.

(iii) Quantity Adjustments Standardisation and testing of the recipes were repeated until the required sensory criteria for each dish was, met and a consistent quality and yield was repeatedly obtained each time they were prepared. The standardisation process was done three times for each enlargement and this took three weeks.

From the beginning and during the development and standardisation process ingredients from the same batch were used to ensure consistency in dishes every time. The methods of preparation were standardised and the same cooking utensils were used during the preparation period.

The household and the standardised household recipe as well as the first enlargement of 10 and 20 portions were prepared in the experimental food laboratory at the Department of Consumer Science, University of Pretoria. The second and

third enlargements of the recipes were prepared in the large scale laboratory of the Department.

The recipes had to be adjusted in terms of equipment, yield, portions, timing and temperature. For the household recipe and the standardised household recipe, smaller modern equipment were used, smaller yields and portions were prepared requiring shorter cooking times as compared to larger recipes which required larger equipment.

The quantities of the recipes were enlarged from 10 to 20 to 40 and 100 portions during the standardisation and development process after each enlargement. The two recipes were evaluated to determine acceptability as described above during informal product evaluation.

3.3.2 Phase II: The Exploratory-Descriptive research

The second phase of the study was exploratory-descriptive in nature. In this phase the standardised dishes were prepared and formally evaluated for consumer acceptability in the cultural village. In exploratory-descriptive research the objective or purpose according to Mouton (1996:101) is to give a broad description of what is investigated. In this study a comprehensive insight into the acceptability of the two dishes at the Shangana cultural village is given. It also describes the results of the standardised consumer sensory evaluation tests that were conducted to determine the acceptability of the two standardised dishes.

Various reasons why exploratory research is undertaken are given by Babbie and Mouton (2001: 79) and Churchill and Lacobucci, (2002: 233). Apart from explicating the central concept of acceptability, the other reason was to gain an understanding of the leisure tourists' willingness or not to consume the traditional food offered at the cultural village. Descriptive research, according to Veal (1997: 3) is very common in the leisure and tourism area, partly because leisure and tourism are relatively new fields of study.

3.3.2.1 Objective

The aim of the second phase of the study was to determine the acceptability of the two standardised dishes with the following sub-objectives:

3.3.2.2 Sub-Objectives

- ❖ To determine the acceptability of *xigugu* in terms of the sensory attributes of appearance, taste and texture when served to tourists at Shangana Cultural Village;
- ❖ To determine the acceptability of *xiendla hi vomu* in terms of the sensory attributes of appearance, taste and texture when served to tourists at Shangana Cultural Village;
- ❖ To determine and describe the overall acceptability of *xigugu and xiendla hi vomu*; and
- ❖ To determine the intention of consumption of *xigugu and xiendla hi vomu* at cultural villages such as Shangana.

3.3.2.3 Conceptualisation

Consumer sensory evaluation and acceptability were conceptualised in Chapter 2 (See 2.5).

3.3.2.4 Operationalisation

A questionnaire was compiled according to Kivela, Inbakaran and Reece (1999) and Kivela, and Crofts (2006) in order to identify the aspects that were applicable to determine food choice and acceptability, within the framework of the objectives of the study.

The questionnaire was divided into the following three sections and these sections contained both closed-ended and the open-ended questions. See Table 3.1.

Section A, to determine the respondents' experiences, expectations, demographics, previous experience of the tourists, choice and overall acceptability and purchase intention of *xigugu* and *xiendla hi vomu* served to them. These questions were used as a proxy for repurchase/ consumption intentions, as they are an indirect indication of the tourists' satisfaction with the food (Babbie & Mouton, 2001: 233). The majority of the questions required the respondents to choose one aspect amongst different options or to give a yes or no answer.

Section B and **Section C**, of the questionnaire was in the form of a hedonic score card intended to determine the acceptability of the dishes from the respondents. For the second phase of the study, the acceptability of the dishes (*xigugu* and *xiendla hi vomu*) was determined by using standardised consumer sensory evaluation techniques to evaluate the following characteristics of the dishes namely, appearance (colour), texture, taste and the overall acceptability. A five point hedonic rating scale was used where 1 on the scale indicated extremely dislike and 5 extremely like. It was considered to be the most appropriate rating scale to assess the degree and liking of individual sensory attributes and to measure the overall product acceptance (Lawless & Klein, 1991: 18; Meilgaard, *et al.*, 2007: 13; Stone & Sidel, 2004: 84; Lawless & Heymann, 1999: 28). (See Addendum D for the scale used to determine the acceptability and overall acceptability of the dishes).

TABLE 3.1 COMPOSITION OF THE QUESTIONNAIRE

| Section of the questionnaire | Concepts measured |
|--|---|
| Section A: Questions 1-6 Questions 7-11 | Demographics of the respondents Previous experience of the respondents |
| Section B: Questions 12-13 | The sensory attributes in the acceptance of <i>xiendla hi vomu</i> and comments |
| Section C: Questions 14-15 | The sensory attributes in the acceptance of <i>xigugu</i> and comments |

The questionnaire was compiled in such a way that it did not take too long to complete. The questionnaire was structured in such a way that tourists found it easy to complete. This was an important consideration as time was important for the tourists who visited Shangana. They were mostly on planned tours, which operate within a predetermined schedule and followed a set programme.

3.3.2.5 Pilot Testing

The questionnaire was pilot tested to ensure that all aspects of the questionnaire such as wording of the questions, question sequencing and layout was clear. The estimated response time was also determined (Veal, 1997: 195). The pilot test was done in January 2008 at Shangana. The respondents for the pilot study were 15 tourists visiting Shangana from China, England, America, South Africa and Italy.

3.3.2.6 Sampling

The unit of analysis for the consumer sensory evaluations were individual tourists from various cultural groups, foreign and local, who visited the Shangana cultural village. Only participants who volunteered to take part in the study, who were 18 years and older and could understand and express themselves in English were considered. Before the evaluation of the dishes, the volunteers were required to fill in consent forms (See Addendum I).

In accordance to the guidelines given for consumer sensory evaluation at least 50 participants are needed (Lawless & Heymann, 1998: 29). Non-probability sampling was used, employing a convenient sampling selection method. According to Veal (1997: 146) questionnaire surveys usually involve substantial number of subjects ranging from 50 to 60 to thousands. For the study, 100 tourists completed the questionnaire for *xigugu* and *xiendla hi vomu* at the same session. This meets the requirements for consumer sensory evaluation. The sample of 100 which participated in the study provided a sizeable and representative sample of the target population tourists. This is a prerequisite for the generalisation of the findings based on responses of tourists who visited Shangana.

According to Babbie and Mouton, (2001: 166) members of the subset should be easily identified. The tourists visiting Shangana were mostly part of tourist groups visiting this cultural village. All the visitors to Shangana were tourists who wanted to learn about the different cultures depicted at this cultural village.

3.3.2.7 Data collection procedure

To gather the background information regarding the set up at Shangana, a guided tour was undertaken to observe what the tourists experience when they visited Shangana. An interview was arranged with the manager of Shangana to gain additional information.

Shangana has three touring and dining sessions (morning, midday and evening), 365 days a year. Only tourists attending the lunch or dinner sessions were considered for the study. For this study, 100 tourists who were willing to participate were selected for the study. Data collection took place during the second quarter of 2008, which was considered an appropriate time because tourists from all over the globe tend to visit Shangana during this time of the year. As the numbers of visitors vary everyday, no fixed number per day could be determined. The number of tourists per session normally varies from 15 to 120 people depending on the bookings that Shangana receives. The average number of tourists per session varied between 20 and 60.

The population of visitors that visited Shangana during March 2008-June 2009 were approximately 14 400 people who were all leisure tourists and it was estimated that 1 200 tourists visit Shangana every month. The tourists included English speaking as well as non-English speaking people. The management estimated that approximately 66% of the population of tourists who visit Shangana are able to speak English.

The two dishes were prepared in the Shangana kitchen following the preparation instructions for hundred portion recipes. All the ingredients were weighed and measured and the two Tsonga-Shangaan ladies who assisted the researcher in phase I prepared the dishes to be served to the tourists.

The researcher first introduced herself to the tourists before the food was served. The aim was to tell them about the purpose of the research and that the information gathered would be confidential. After the introduction by the researcher, questionnaires were distributed to the tourists. They were asked to first taste the two dishes before eating the other foods to get their real responses without the other foods influencing their taste sensitivity and responses.

The samples of *xigugu* and *xiendla hi vomu* were presented in wooden bowls together with the other menu items. The tourists served themselves in enamel plates. The tasting took place outside the restaurant in the 'boma' area where there were 'lapas'. A 'boma' is an open area where people can sit around a fire. It contains several 'lapas' which are thatch roofed areas where people can eat.

The data was collected from March to June 2008. The data was gathered throughout the week to ensure that the time of the week did not influence the data. To reduce the possible sources of error during data collection by means of the questionnaire, the following precautions were taken: A cover letter and a consent form were given together with the questionnaires to emphasise the purpose of the survey. In an effort to motivate the respondents to answer questions seriously and truthfully, the researcher's affiliation was stated and respondents were informed that confidentiality and anonymity were guaranteed. This contributed to the reliability of the study.

3.3.2.8 Data Analysis

After collecting the data, respondents' scores were computed for frequency analysis and descriptive statistics were performed using the software SAS®1 version 8.2 main frame computer operating system VM/cms at the University of Pretoria. The statistical services of the University of Pretoria, calculated the frequencies and means according to the frequency procedures after the coded data were cleaned. Quantitative research approaches were used to analyse the data.

Descriptive statistics were used to analyse data for **Section A, B** and **C** as they are concerned with organising and summarising the data at hand, to render it more comprehensible data set (Mouton, 1996: 163; Bless, Higson-Smith & Kagee, 2006: 120). Descriptive statistics were used to describe the objectives set by the study, specifically with regard to the different geographical areas (Africa, Europe, Asia, and America) from where the tourists originated. It included tables, graphs, frequency and percentage distributions which reflected the findings of the research (See Chapter 4 and 5). Descriptive statistics is a general term for methods of summarizing and tabulating data that make their features more transparent. Good examples are calculating means and variables and presenting them in tables, graphs and charts.

3.4 ETHICS

The research ethics guidelines as stated by Babbie and Mouton (2001: 254) were followed in this study. The proposal of the study was submitted to the Consumer Science research committee who are experts in Consumer Science. It was also submitted to the Ethics Committee of the Faculty of Natural and Agricultural Sciences at the University of Pretoria for approval. The proposal was orally presented to the research committee as well. The research was then conducted in accordance with the approved research proposal.

Only respondents who expressed their willingness to participate were included in the study. Respondents were guaranteed confidentiality and anonymity. They were also assured that the information gathered would be dealt with impersonally and would not harm them in any way.

3.5 SUMMARY

This study was conducted in two phases namely Phase I, the action research which dealt with the development and standardisation of the two dishes, *xigugu* and *xiendla hi vomu* following the three steps outline by Spears and Gregoire (2010: 211) namely recipe verification, recipe evaluation and quantity adjustment and Phase II, the exploratory-descriptive research which was done to determine the acceptability of these dishes using the 5-point hedonic scale. This chapter outlined the research methodology. The research methods reflected included describing the sample, the sample size of the respondents, data collection techniques and the administering of the data collection instruments. Techniques regarding the analysis of the data were highlighted because data analysis has a direct bearing on the interpretation and outcome of the study.

The next chapter will focus on the development and standardisation of *xigugu* and *xiendla hi vomu* and the interpretation of the discussion of the process.

Chapter 4

RESULTS AND DISCUSSION ON THE RECIPE DEVELOPMENT AND STANDARDISATION

4.1 INTRODUCTION

This chapter describes the procedures on how two authentic Tsonga-Shangaan dishes *xigugu* and *xiendla hi vomu* were developed and standardised for large-scale food service units such as ethnic restaurants and cultural villages.

Standardised recipes enable one to predict and control the quality, quantity and portion cost of the final product. It ensures that consistency in product quality and quantity is achieved. It helps to save time, prevent wastage and eliminates guesswork as well as minimise error. Recipe development, according to Swanepoel *et al.* (1992: 2-12) can be achieved through testing, evaluation and adjusting. This ensures that a recipe becomes standardised to meet the specific requirements of the specific foodservice operation.

Household recipes of *xigugu* and *xiendla hi vomu* were developed and standardised in phase I according to the procedures described in Chapter 3. (See 3.3.1.5 to 3.3.1.7). These recipes were enlarged and standardised up to 100 portions and each enlargement was repeated three times. (See Figure 4.1 for the process followed).

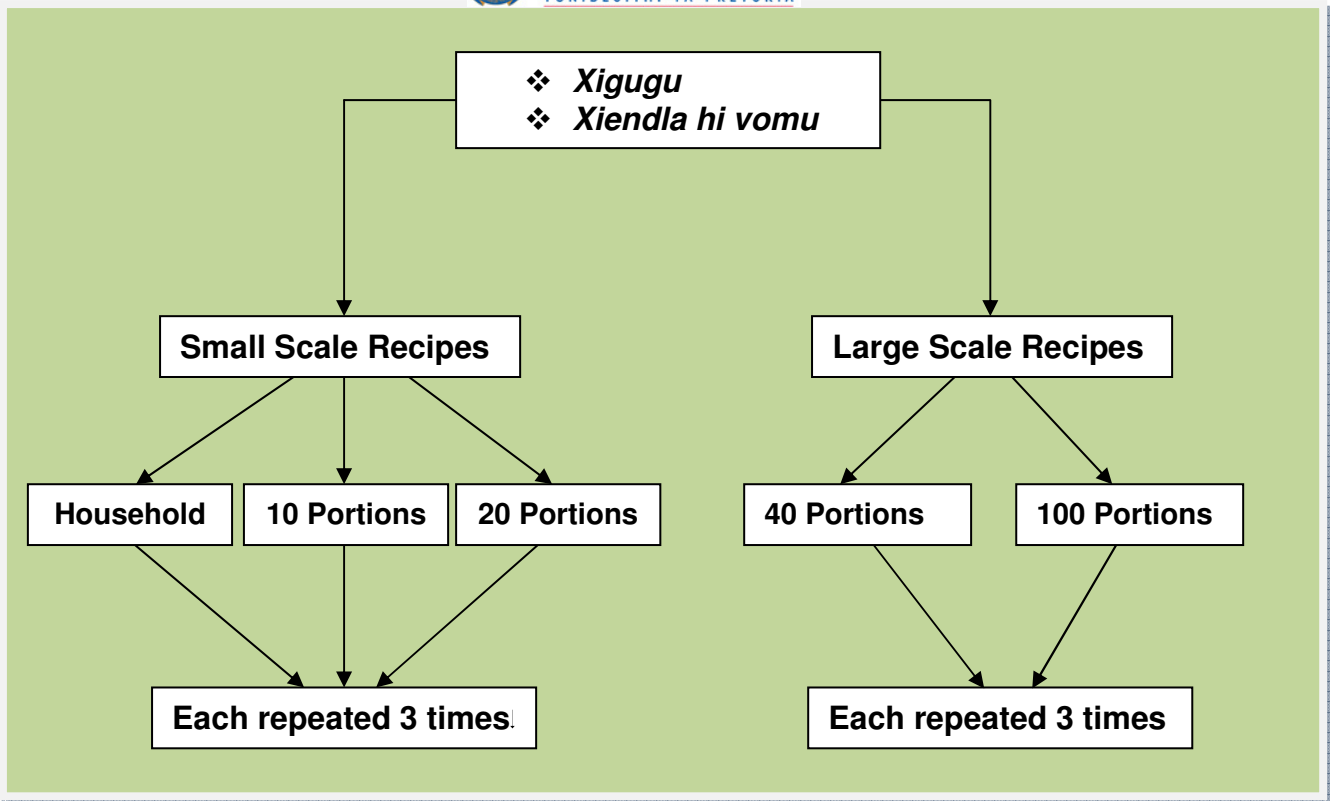


FIGURE 4.1 THE DEVELOPMENT AND STANDARDISATION PROCESS

4.2 RECIPE STANDARDISATION CYCLE ANALYSIS OF *XIGUGU* AND *XIENDLA HI VOMU*

The standardisation process is a cyclic process of three steps namely, (1) recipe verification, (2) product evaluation and (3) quantity adjustment. These three steps were followed in this study. The procedures on how to enlarge household recipe to large scale production quantities as given by Payne-Palacio and Theis (2009: 269), and Swanepoel, *et al.* (1982: 1-12) were followed.

4.2.1 Recipe Verification

The two Tsonga-Shangaan ladies prepared the dishes as they usually did at home. During the preparation the ingredients were measured and weighed according to the requirement of a standardised recipe in order to get precise measurements. The household recipes of the two dishes were prepared and informally evaluated according to the evaluation criteria given in Addendum A.

Ingredients used during the development and standardisation were chosen to represent traditional Tsonga-Shangaan dishes. *Xigugu* was prepared with peanuts (roasted and ground with skins on), dry maize kernels and salt. *Xiendla hi vomu* was prepared with cowpeas, moist maize kernels, finely ground peanuts (with skins), oil, salt and water.

The recipes were first checked for authenticity in terms of type of ingredients used and ratio of ingredients. The household recipes were prepared the way they were given to the researcher then checked for appearance, taste, flavour and texture. The procedures were recorded and the dishes prepared at each trial were evaluated during the process according to the sensory attributes of the recipes (Addendum A) by the informal panel (consumer science, food science students and personnel) to evaluate the dishes. The recipe evaluation form (Addendum B) was used to record changes that were recommended on the dishes according to the evaluations made. The criteria were set according to the characteristics of the authentic dishes. Quantities and procedures were noted.

Preparation methods, equipment, temperature, yield, number of portions and preparation time of the dishes prepared from the household recipes were recorded. This included the weighed, measured and converted ingredients to get accurate metric measurements in grams and millilitres. Both prepared dishes were repeated three times during the standardisation process to ensure that they were of good quality and had a consistent yield according to authentic sensory attributes set by the ladies. These enlarged recipes were evaluated again by the experts to determine whether they met the criteria set for the authentic dishes. (see Addenda C and D) for results on the triple testing).

The household recipes were evaluated after each preparation by the informal panel (consumer science, food science students and personnel) for acceptability and whether the recipes can be enlarged and prepared for a foodservice setting. All the adjustments and changes made were recorded. (see Addenda C and D).

4.2.1.1 First enlargement of *xigugu* and *xiendla hi vomu* to 20 portions.

The recipes were doubled to 20 portions and prepared again while noting any changes made in terms of cooking time, temperature, ingredients, yields and portion sizes. They were evaluated for acceptability and all the suggested changes were recorded. The recipes were repeated three times in order to ensure that it were of good quality. (see Addenda C and D).

4.2.1.2 Second enlargement of *xigugu* and *xiendla hi vomu* to 40 portions

For the second enlargement, a large scale laboratory was used to prepare the larger quantities with specialised equipment.

The recipes for 20 portions were doubled to 40 portions and prepared while noting any changes made in terms of cooking time, temperature, ingredients, yields and portion sizes. They were evaluated for acceptability and all the suggested changes were recorded. The recipes were repeated three times in order to ensure that it were of good quality. (see Addenda C and D).

4.2.1.3 Third enlargement of *xigugu* and *xiendla hi vomu* to 100 portions

The recipes were doubled again and prepared while noting any changes made in terms of cooking time, temperature, ingredients, yields and portion sizes. They were evaluated for acceptability and all the changes were recorded. For the third enlargement, a large scale laboratory were also used to prepare the larger quantities with some specialised equipment. The recipes were repeated three times in order to ensure that it was of good quality. (see Addenda C and D).

The procedures followed during the development and standardisation for each of the two recipes are given in detail below and the results summarised in Addenda C and D. The procedures followed for *xigugu* is given first, followed by that of *xiendla hi vomu*.

***Xigugu* (Household recipe): Ten portions**

The household recipe was prepared as it usually was originally without any measurements, preparation time, equipment (pots) and proper methods of preparation. This was done to determine the sensory attributes which were authentic to it. The dish was evaluated by the students and personnel (Addendum A) using the recipe evaluation card (see Addendum B) and changes were made.

The problem with the household recipe was that it did not have measurements for the ingredients. Therefore it was found that the yield of *xigugu* was more than the yield required to get ten portions. *Xigugu* is usually prepared by using a wooden mortar and pestle to mix and finely grind the ingredients.

TABLE 4.1: SMALL SCALE RECIPES FOR *XIGUGU*

| ORIGINAL HOUSEHOLD RECIPE |
|---|
| (Serves 10) |
| COOKING TIME: COOKED UNTIL DONE (SOFT) |
| INGREDIENTS |
| 1 cup maize kernels (dry) 2 cups peanuts (raw) salt to taste |
| METHOD OF PREPARATION |
| <ol style="list-style-type: none"> 1. Sort maize kernels. 2. Roast maize kernels in a pan until brown. 3. Grind maize kernels. 4. Sieve maize kernels. 5. Sort peanuts. 6. Roast peanuts in a pan until brown. 7. Grind peanuts (with skins). 8. Mix ingredients and add salt according to taste. 9. Mix ingredients together until they form a brown compact mixture. |

***Xigugu* (Standardised Household recipe): Ten portions**

The household recipe was prepared again during the development and standardisation process. All the ingredients were measured and weighed. There after it was presented to the informal sensory evaluation panel to evaluate. (see

Addendum A). The experts, using the recipe evaluation card, recorded the recommended changes to be made (see Addendum B).

During preparation, the time for mixing the ingredients was determined as being 45 minutes, for grinding the maize kernels 10 minutes (due to hardness) and for the peanuts it was 5 minutes. The Robot Coup R301 Plus was used to finely grind the maize kernels and peanuts. To mix these two ingredients, a Kenwood Major at speed no. 2 was used.

During the first trial, the panel indicated that the dish was too salty and very coarse in texture, which made it unacceptable. It was also thought that the time at which the dish was prepared was too short, 45 minutes which may have been the reason for the coarseness as it may not have been mixed well. The salt had to be reduced 4ml to 2ml and maize kernels 200g to 130g on the second trial. Therefore, the mixing time was increased to 1½ hours. The portion sizes at this stage for *xigugu* were reduced from 50g to 25g as it was realised that *xigugu* was more filling and the 50g was too much for a portion to be served as a snack.

During the third trial the time for preparation was approximately extended to 2½ hours and with the third trial there were no problems encountered except that time was extended to 2½ hours. The same yield of the dish was determined every time it was repeated. (see Addendum C).

***Xigugu* : Twenty portions**

All the ingredients were doubled from 10 to 20 portions. During the second trial except that the amount for the salt was not doubled because in the first trial 4ml was found to be a bit too much. Therefore the salt was reduced by 1ml during the second trial. There were no other changes made in the third trial. The cooking time depended on the freshness of the ingredients. (see Addendum C).

***Xigugu* : Forty portions**

The large scale recipes were prepared in a large scale laboratory with large scale equipment. There were some changes in the quantities of salt. The salt was double

from the 20 portions to 6ml during the first trial. The salt was then increased to 10ml in the second trial because the 6ml was found to be not enough. No other changes were done in the third trial. An electric tilting frying pan (60ℓ) was used to roast the maize kernels and peanuts for making *xigugu*. A 3100 Automatic Magi Mix (10ℓ) was used to finely grind the peanuts and maize kernels. The Crypto Peerless mixer was used to mix the ingredients. (See Addendum C).

***Xigugu* (Standardised recipe): A Hundred Portions**

When the 40 portions recipe was doubled, a yield of 100 portions was obtained. It was thus established during the first trial that the 80 portion recipe was equivalent to 100 portions of 25 g each. The same equipment and procedures were used as described for the 40 portion recipe.

When *xigugu* was prepared for 100 portions, the dry maize kernels were increased by 20g and the peanuts were increased by 800g because the dish had a very coarse texture which was not pleasing to the informal panel members for the second trial. During the third trial the salt was increased by 30 ml to give it a more acceptable taste. (see Addendum E).

***Xiendla hi vomu* (Household recipe): Ten portions**

Beside the fact that there were no measurements for the ingredients, time for cooking the dish had to be determined. Traditionally *xiendla hi vomu* is cooked until all the ingredients are soft. There was also no time indicated when other ingredients were added. The temperature for cooking the dish, according to the experts, varied all the time. Just as it was with *xigugu*, the yield for *xiendla hi vomu* was a bit more than the 10 portions. This is due to the fact that it was usually eaten on its own most of time. Therefore people were served big portions.



TABLE 4.2: SMALL SCALE RECIPES FOR XIENDLA HI VOMU

| HOUSEHOLD RECIPE |
|--|
| (Serves 10) |
| COOKING TIME: NO TIME GIVEN (COOKED UNTIL DONE) |
| INGREDIENTS |
| 4 cups cowpeas 2 cups maize kernels off cob (fresh) 1 cup peanuts (with skins) Oil just enough to prevent legumes from burning and sticking to the pot Salt to taste Water just enough to cook the dish |
| METHOD OF PREPARATION |
| <ol style="list-style-type: none">1. Sort and soak cowpeas overnight.2. Add oil to the cooking water the boil the cowpeas in a pot.3. When the cowpeas are soft, add maize kernels to the cow peas without stirring, boil until they mix.4. Add the grinded peanuts, to the other ingredients without stirring and boil.5. Add salt and stir using a large wooden spoon and leave to simmer until well done. |

***Xiendla hi vomu* (Household Standardised recipe): Ten portions**

It was found during the preparation of the first trial that the oil was too little. Because of that, the legumes stuck to the bottom of the pot and they burnt. Therefore oil was increased to 20ml. The salt was also increased to 7ml as it was not enough. (Refer to Addendum D).

***Xiendla hi vomu*: Twenty portions**

During the first trial, the quantity from the 10 portions was doubled. More oil was required to prevent the cowpeas sticking to the pot. After preparing the dish for the second time, it was found that the doubled amount of salt was too much. Therefore the salt was reduced by 4ml. The water was reduced by 500ml as it was found that 5l was a bit too much. There were no changes done for the third trial. (see Addendum D).

***Xiendla hi vomu*: Forty portions**

Xiendla hi vomu was cooked in a large scale boiling pot (20 ℓ) in a large scale kitchen. The large quantities of the ingredients had to be weighed and measured because the original recipe did not have the information about that. The ingredients were weighed and measured in grams, kilograms, millilitres and litres using accurate metricated equipment such as measuring spoons, cups, jugs and scales.

For the first trial, when preparing the 40 portion dish, the 20 portion recipe was doubled. It was found that the measurements were too much for 40 portions. During the second trial the measurements were re-done and this resulted in some of the ingredients being increased and others decreased in proportion to the 40 portion recipe. (see Addendum D).

***Xiendla hi vomu* (Standardised recipe): A Hundred Portions**

When the 40 portions recipe was doubled, a yield of 100 portions was obtained. It was thus established during the first trial that the 80 portion recipe was equivalent to 100 portions of 150 g each. During the first trial, the quantity for cowpeas, maize kernels, peanuts, oil, salt and water were adapted. For the second trial cowpeas were decreased by 1,5 kg in proportion with other ingredients; maize kernels were also increased by 1,5 g; peanuts increased by 80 g; oil increased by 100 ml; salt was reduced by 10 ml and water increased by 2,5ℓ. During the third trials no changes or problems were encountered. (see Addenda F).

4.2.2 Recipe evaluation

During the development and standardisation process an informal evaluation method was used for all three trials of every enlargement.

4.2.2.1 Informal evaluation

After the preparation of the dishes for each trial and verifying the yield of the recipes, the dishes were evaluated informally by experts to determine authenticity (meaning they should be the same as the original recipe in terms of Addendum B and they

should have the same sensory attributes) of the dishes in terms of appearance, texture and taste and to check whether they met the criteria using the evaluation criteria given in Addendum A. Also 25 participants from the Department of Consumer Science and Food Science (students and personnel) from the University of Pretoria who were conveniently selected and requested to assist with the informal evaluation throughout the study to determine acceptability of the dishes.

4.2.3 Quantity adjustment

For *xigugu*, the proportion of ground maize grains was reduced because when an equal amount of maize grains and peanuts was prepared, *xigugu* had a very coarse texture, which was unacceptable in the first trial. Salt was reduced because it was also determined that the peanuts had a bit of salt in them.

The recipes were adapted in terms of the proportions of ingredients for example for *xiendla hi vomu* cowpeas were adapted in relation to the maize kernels and peanuts. Cowpeas and water had to be increased, while the amount of salt was decreased.

The portion size, according to the household recipe for *xigugu*, was 50 g each. This was regarded as too large for a snack. It was then reduced to 25 g per portion. *Xiendla hi vomu* was served at 180 g per portion at household level. It was also reduced to 150 g per serving when eaten with other foods. It was determined that when served without any accompaniments, 300 g per portion may be served.

The required adaptations to the proportions of the ingredients, the decrease or addition of ingredients, preparation procedures and portion sizes were all recorded. The reformulation and testing of the recipes continued until the required sensory criteria for each was met and products (dishes) of consistent quality and yield were repeatedly obtained before proceeding with the formal evaluations where a consumer panel determined the acceptability of the dishes (phase II of the study).

All data obtained during the recipe testing phase (recipe verification), were recorded. Ingredients were calculated in weight and volume. The cooking time, temperature, portion size, recipe yield, equipment used, the preparation of the recipes and the changes made to the ingredients as well as the equipments were recorded as



required for recipe standardisation. This ensured exact replications of successful recipes in future.

4.4 SUMMARY

In this chapter the results of the development and standardisation of *xigugu* and *xiendla hi vomu* were discussed according to the standardisation cycle.

The next chapter focuses on the results and discussion of the acceptability of *xigugu* and *xiendla hi vomu*.

Chapter 5

RESULTS AND DISCUSSION ON THE ACCEPTABILITY OF *XIGUGU* AND *XIENDLA HI VOMU*

5.1 INTRODUCTION

In this chapter, the results of the second phase of the study on the acceptability of *xigugu* and *xiendla hi vomu* as evaluated by leisure tourists who visited the Shangana cultural village are presented and discussed. The demographic profile, other relevant information from the respondents such as their reasons for visiting the Shangana cultural village, their familiarity and previous experience with legume and cereal based dishes were captured in order to establish the respective acceptability ratings of *xigugu* and *xiendla hi vomu* in order to understand the ratings given to the two dishes.

Meiselman (1996: 80), Kahn and Wansink (2004) and King *et al.* (2004) are of the opinion that the eating situation (the physical environment and social climate) contributes to the acceptance of food and thus need to be taken into account when the acceptability of food is measured. Situational or environmental factors, such as the place and context of consumption of an ethnic/regional food, serve to enhance the perception of authenticity of ethnic/regional food (Kuznesof, *et al.*, 1997; Kahn & Wansink, 2004; King *et al.*, 2004).

5.2 DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

A self administered short questionnaire (see Addendum J) as described in the operationalisation section for phase II was administered to 110 leisure tourists visiting the cultural village. Biographic information about the demographic characteristics of the respondents (leisure tourists) is the basis of a description of the kind of people who are likely to travel to a tourist destination like Shangana cultural village. Table 5.1 provides information on the demographic characteristics of the respondents who visited Shangana.

TABLE 5.1: DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS (N = 110)

| Characteristics | Number (n) | Percentage (%) |
|------------------------------|------------|----------------|
| AGE | | |
| 17-31 years (Generation Y) | 72 | 65 |
| 32-42 years (Generation X) | 22 | 20 |
| 44-63 years (Baby Boomers) | 16 | 15 |
| GENDER | | |
| Female | 59 | 54 |
| Male | 51 | 46 |
| TOURISTS | | |
| International | 57 | 52 |
| Local | 53 | 48 |
| COUNTRIES OF ORIGIN | | |
| Southern Africa | 62 | 56 |
| Europe | 37 | 34 |
| Other | 11 | 10 |
| ETHNIC/CULTURAL GROUP | | |
| International Whites | 39 | 48 |
| Tsonga/Venda | 36 | 45 |
| Local Whites | 6 | 7 |

5.2.1 Age group

The researcher decided to group the respondents according to age groups typified as three generation groups. This was done in terms of the generation groups of the related groups that have certain lifestyle characteristics. The majority of the respondents 72 (65%) were between the ages 17 to 31, followed by the age group 32 to 42 comprising of 22 (20%) and only 16 (15%) of the respondents who were in the age group 44 to 63.

People who were between the ages 17 to 31 years old (born between 1977 and 1994) are labelled as Generation Y. They are known to be materialists, brand orientated, risk takers, keen on business, hedonistic and inclined to often experiment with illegal drugs, and are disrespectful of politics (Evans, Jamal & Foxall, 2006: 109-112). The Generation X group comprises of people born between 1966 and 1976 and their ages range between 32 and 42. This group of people tend to be important spenders who are demanding and in search of their identity. They are individualistic and sceptical. The third category of respondents have been nicknamed the Baby Boomers and are those born between 1945 and 1965. These were people who were involved in the societal change as reflected in music, politics, fashion and social attitudes during the 1960s to the 1970s (Evans *et al.*, 2006: 109-112).

According to Evans *et al.* (2006: 109-112), it is the older generation that tends to travel a lot because they have more time to themselves. They are pensioners with not much to do. They may also have money to spare for travel. Older people tend to continually assess their subjective age as different from their chronological age. Seniors tend to feel ten years younger than their normal age and as a result they will often prefer to share their holiday activities with the younger people. However, the study done at Shangana found that the situation the other way round. The younger generation was the largest age group in the sample.

5.2.2 Gender

When looking at the gender of the respondents, 51 (46%) were males and 59 (54%) females. In this study females were in the majority. This confirms the observations by Patterson and Pegg, (2009) that many older females, tend to have a strong need to socialise and communicate with other people. Preferred activities included attending cultural and heritage activities, and festivals.

5.2.3 Tourists

The respondents represented both local and international leisure tourists who visited Shangana. International tourists were represented by 57 (52%) and local tourists by 53 (48%).

5.2.4 Countries of origin

As the respondents were from twelve different countries it was decided to regroup them into three subsets that was largely based on geographic location. The first subset was Southern Africa represented by South Africa, Zimbabwe and Swaziland; the second subset named Europe comprised of Italy, France, Holland, England, Sweden, Germany and the third subset, 'Others' included China, America and India. The majority of the respondents came from Southern Africa, followed by Europe and then the 'other' countries. From the first and second subsets, the largest number of respondents originated from South Africa (Southern Africa) and France (Europe) respectively.

5.2.5 Ethnic/cultural group

The respondents represented fifteen different ethnic/cultural groups from different parts the world – southern, north and central Africa, India and other Asian countries and people of European origin. Specific examples included African ethnic/cultural groups like the Tsonga, Venda, Asian/Indian, White, Nguni, Sotho and other African ethnic/cultural groups such as Shona, Tonga and White South Africans.

Based on ethnic/cultural differences, the respondents were re-grouped into the following three subsets namely international Whites, the Tsonga/Venda and the local White population groups that comprised of 39 (48%), 36 (45%) and 6 (7%) of the respondents respectively.

5.2.6 Reasons for visiting Shangana and Generation groups

The reasons the respondents gave for visiting Shangana fell into three categories namely, culture, tourism and food (Figure 5.1). The majority of the respondents 68 (62%) visited the cultural village in order to learn about the Tsonga-Shangaan culture and also to visit the Shangana Chief's village (Figure 5.1).

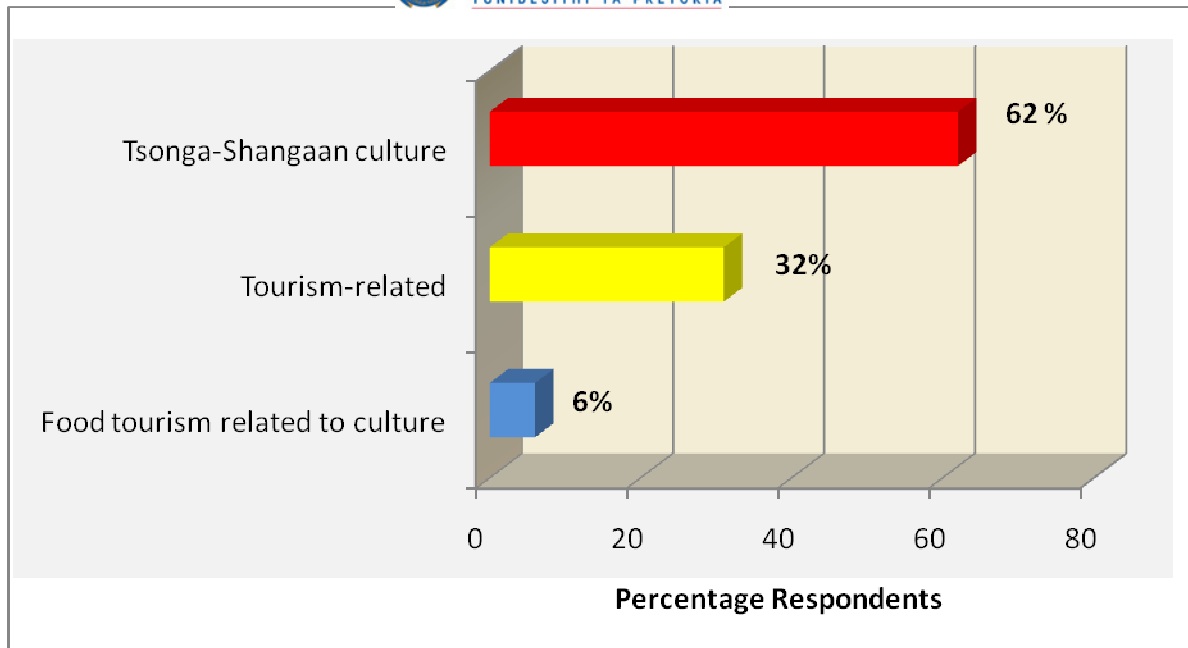


FIGURE 5.1: REASONS FOR VISITING SHANGANA (N=110)

Thirty-four (32%) of the respondents indicated that they were at Shangana for tourism purposes. When visiting a country, tourists like to experience the natural environment, local cultures and lifestyles including local customs/traditions in their original living settings (Travel Industry Association [TIA], 2007: 8). The country's spectacular natural and cultural tourism attractions contribute to its popularity as an international tourist destination (George, 2001: 245).

The remaining (6%) of the respondents (8) visited the cultural village mainly to experience the variety of traditional Tsonga-Shangana traditional dishes served at the village. In other words they came for culinary tourism purposes. When tourists visit a cultural village, they expect to be presented with authentic traditional foods which could be the experience they want and to connect them with the people. When they get to a cultural village they do not want to be served the Western-oriented foods they usually eat at their homes if this is what they are used to (Sims, 2009). Tourists are likely to want to try "typical" products during their holidays because it gives them a sense that, if you want to be a good traveller, you must engage with the food of the region (Ilbery *et al.*, 2003: 210; Clark & Chabrel, 2007).

When looking at the age groups in terms of the reasons for visiting Shangana, the 17-31 year old group was the largest making up 72 (65%) of the respondents. Forty-

seven (43%) of them indicated that they visited Shangana for tourism purposes, 20 (18%) said they wanted to visit just to know and learn about the Tsonga-Shangaan culture, while 5 (4%) indicated that food is one of their reasons for coming to Shangana.

There were 22 (20%) of the respondents in the 32-42 age group. Eleven (10%) respondents of this group gave tourism as their main reason for visiting, followed by 8 (7%) who indicated culture as another reason and 3 (3%) said food. Of the 16 respondents in the 44-63 age category 17 (15%). Ten (9%) gave tourism as the reason for coming to Shangana, while 7 (6%) said culture. None of them gave food as the reason for visiting the cultural village. They were categorised in three groups.

The demographic profile of the respondents was discussed in order to find out more about them. The next session focussed on the familiarity and consumption of the authentic South African legume and cereal dishes.

5.3 FAMILIARITY AND CONSUMPTION OF AUTHENTIC SOUTH AFRICAN LEGUME AND CEREAL DISHES

To establish how familiar the respondents were with authentic (traditional) South African legume and cereal dishes they were asked to indicate whether, prior to their visit to Shangana, they had ever consumed authentic South African legume and cereal dishes on a previous occasion and, if so, where. They were asked to name the dishes. They were also requested to indicate how often they generally ate legume and cereal dishes.

5.3.1 Prior consumption of authentic South African legume and cereal dishes

Respondents had to indicate where they had eaten authentic South African legume and cereal dishes before. Figure 5.2 portrays the results.

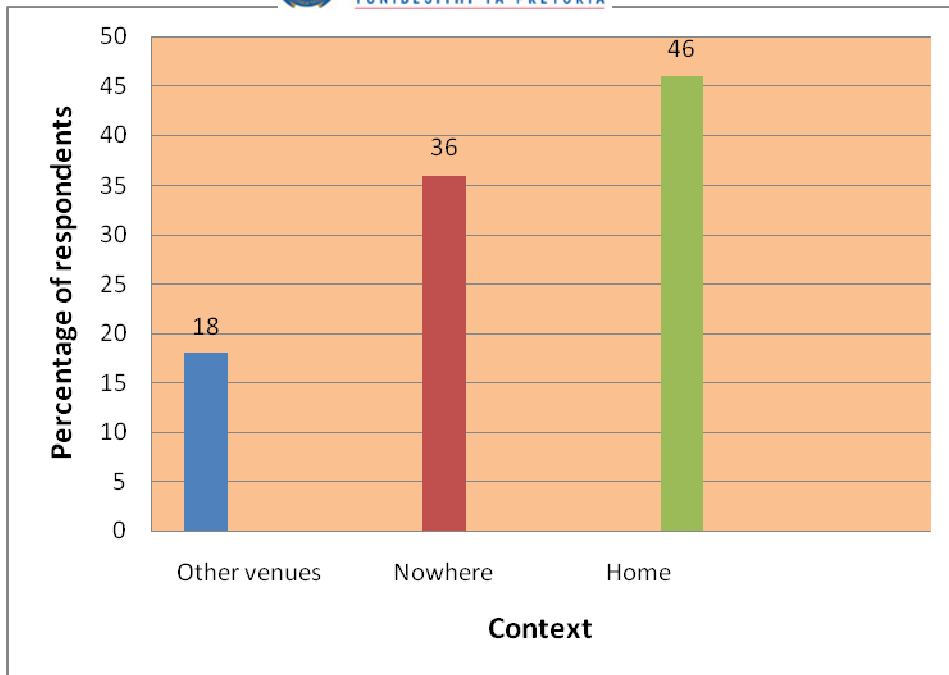


FIGURE 5.2: WHERE AUTHENTIC SOUTH AFRICAN LEGUME AND CEREAL DISHES WERE CONSUMED BEFORE (N=110)

Twenty or (18%) of the respondents indicated that they have eaten the food at other venues before. Of these 8 (7%) were from Southern Africa, 11 (10%) from Europe and 1 (1%) from the other countries' group.

More than a third of the respondents 40 (36%) indicated that they had never eaten authentic South African legume and cereal dishes before (indicated as nowhere). Respondents, who indicated that they have never eaten authentic South African cereal and legume dishes before, had to indicate where they come from. Five (4%) were from Southern Africa, 26 (24%) from Europe and then 9 (8%) from other countries.

Fifty (46%) of the respondents had eaten legume and cereal dishes at home. The respondents who indicated that they mostly ate such food at home where from Southern Africa and 'other' countries, which indicates that these dishes are more well known in African rather than in European countries. The majority of the respondents were from South Africa, where these two ingredients legumes and cereals form part of the majority of people's staple food intake. From the respondents who had partaken of such food at home 49 (45%) were from Southern Africa and only 1 (1%)

from the 'other' countries' group who too said that, these foods were part of their staple diet. None of the respondents from European countries had eaten this food at home. This means that these respondents who may have eaten similar foods before and are familiar with and thus have knowledge on these dishes from prior experience.

5.3.2. Authentic South African dishes consumed before

In response to the request to list the authentic South African cereal and legume dishes they had eaten before, most of the respondents had consumed legume and cereal dishes. Dishes listed included such as samp and bean dishes, *xiendla hi vomu xigugu*.

Legume dishes such as peanuts, jugo beans, cowpeas, bean soup, bean salad, beans, sugar beans, *tihove* (mixture of legumes) and traditional peanut butter were listed. Cereal dishes such as maize on the cob, stiff maizemeal porridge, soft maizemeal porridge, maize bread, sorghum porridge, samp, sorghum beer, sorghum and maize meal porridge, *tshopi* (maize meal and pumpkin porridge), dried vegetables and stiff maize meal porridge and *phutu* (crumbly maize meal porridge) were also recorded.

5.3.3 Frequency of consumption

Apart from listing the authentic cereal and legume dishes the respondents also had to indicate how frequently they consumed them. Figure 5.3 shows the percentage distribution of the frequency of consumption of the authentic South African cereal and legume dishes.

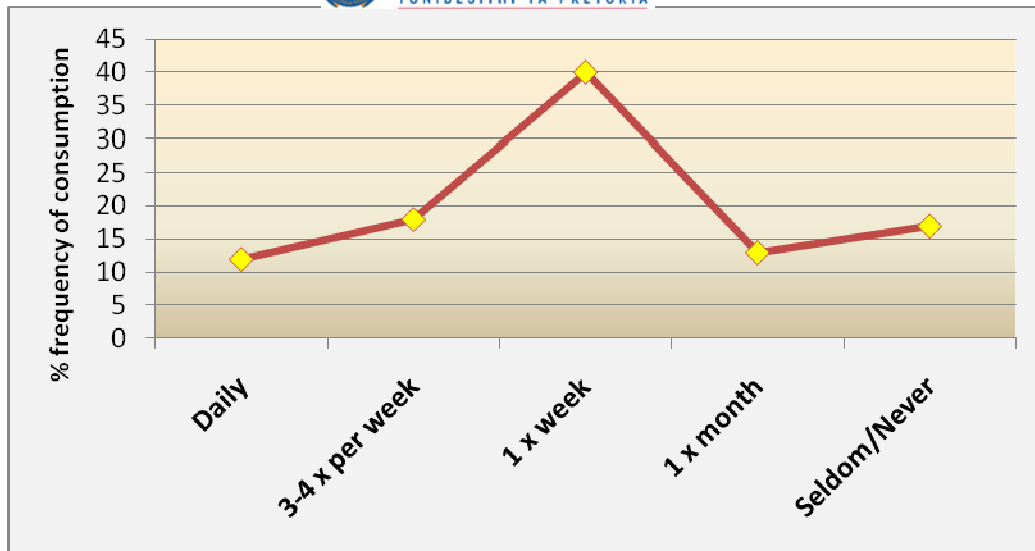


FIGURE 5.3: PERCENTAGE DISTRIBUTION OF THE FREQUENCY OF CONSUMPTION OF CEREAL AND LEGUME DISHES (N=110)

Forty-four (40%) of the respondents consumed cereal and legume dishes once a week followed by 20 (18%) respondents who only consumed the dishes 3 to 4 times a week. Nineteen (17%) indicated that they seldom or never consumed these dishes while 14 (13%) consumed them once a month and only 13 (12%) of the respondents consumed legume and cereal dishes daily.

When a product is frequently selected and eaten regularly, it usually indicates that it is accepted (Land, 1988: 477), especially when it is eaten with pleasure and satisfaction. A possible explanation as to why the authentic cereal and legume combination dishes are less frequently consumed is that they take long to cook which makes it difficult for working people to prepare them on a regular basis.

5.3.4 Offering authentic (traditional) South African dishes on the menu

The respondents were asked whether they would like to have authentic (traditional) South African dishes on the menu at cultural villages/restaurants.

The majority 105 (95%) of the respondents confirmed that they would like to have authentic traditional foods while 5 (5%) of them did not. This shows that the majority of the respondents really expected to experience the authenticity of the culture of the ethnic group in the cultural village they choose to visit.

Figure 5.4, gives the reasons the respondents offered regarding why they would want the authentic traditional South African dishes on the menu at ethnic/cultural villages.

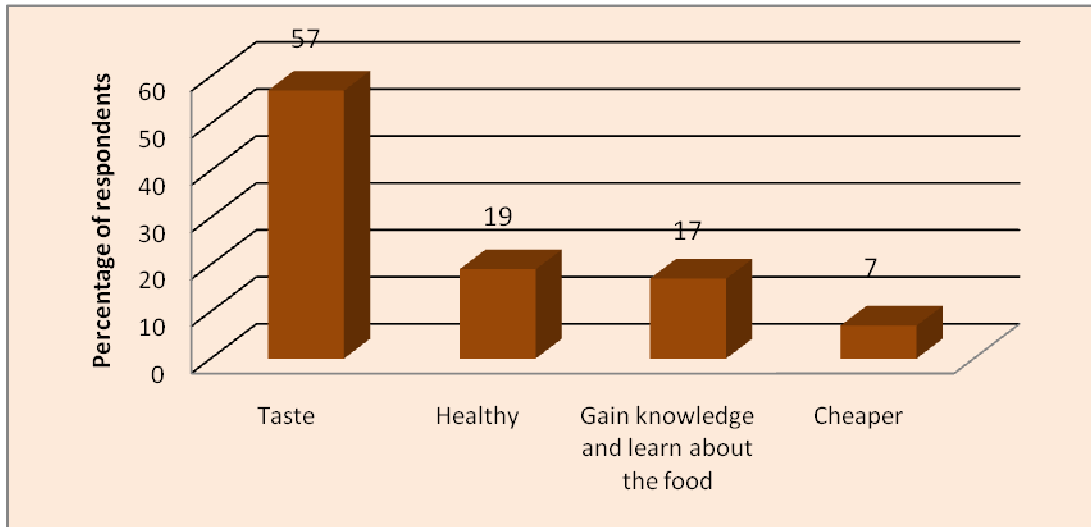


FIGURE 5.4: REASONS WHY AUTHENTIC (TRADITIONAL) SOUTH AFRICAN DISHES SHOULD BE ON THE MENU (N=110)

Sixty-three (57%) of the respondents indicated that they would like to taste such food. They said it is nice to experience a different taste of dishes prepared from the same ingredients that they are used to at home. Twenty-one (19%) of the respondents liked the dishes because they are healthy and enjoyable. Nineteen (17%) of the respondents indicated that they would like to have legume and cereal dishes on the menu in cultural villages because they gain knowledge about the local people’s food habits. They also want to know more about the culture and the lifestyle of the ethnic group represented. Seven (7%) of the tourists liked the food because the ingredients are reasonably priced, which makes it convenient to eat the food all the time especially when on a limited budget when travelling.

5.4 ACCEPTABILITY OF *XIGUGU* AND *XIENDLA HI VOMU*

The next section of this chapter focuses on the acceptability of the Tsonga-Shangaan dishes *xigugu* and *xiendla hi vomu*. The acceptability was measured by using a standardised consumer sensory evaluation technique. Respondents were asked to

rate the sensory attributes of the two dishes on a 5-point hedonic scale to indicate the level of pleasure they derived from eating the prepared food. The sensory attributes measured were appearance, taste, flavour and texture. The dishes were presented to the respondents together with the other menu items served for the day. The respondents were asked to taste the dishes (*xigugu* and *xiendla hi vomu*) before eating the other food on the menu so that their rating would not be influenced by accompanying foods.

Consumers with prior experience have moderate expectations and respond more favourable to familiar food than consumers without such previous experience. Previous experience affects expectations for the next consumption opportunity as it sets criteria or standards according to which the current or future experience will be judged (Whipple & Thach (1988: 57). Subsequent memories associated with the cultural village where cultural (traditional foods) had been consumed, can be an important component of an indication of acceptance of a food for many respondents (Sparks, *et al.*, 2001; Cayot, 2007).

5.4.1 Acceptability ratings of *xigugu*

Figure 5.5 indicates how the respondents rated each of the sensory attributes on a 5-point hedonic scale.

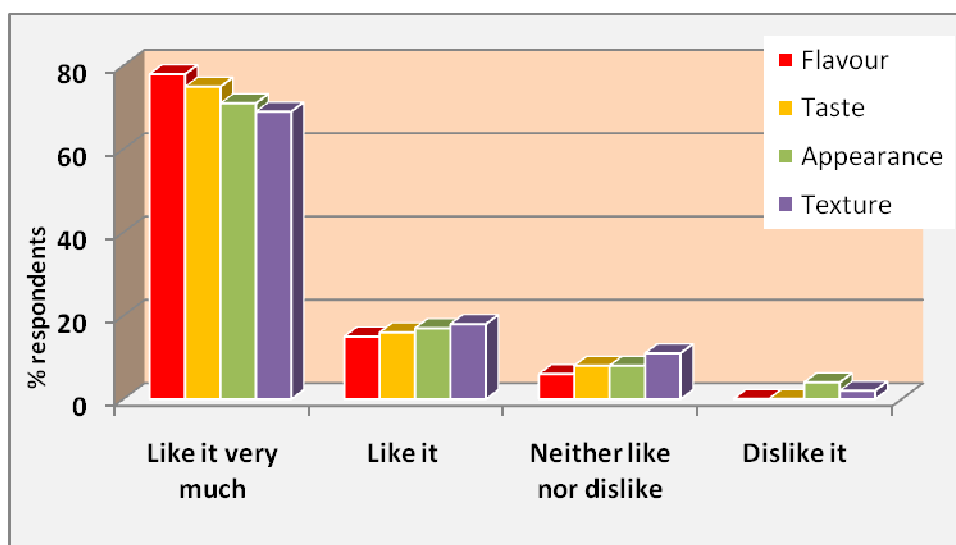


FIGURE 5.5: ACCEPTABILITY RATINGS FOR THE SENSORY ATTRIBUTES OF *XIGUGU* (N=110)

Most of the respondents 86 (78%) said that they liked the flavour of *xigugu* very much and 17 (15%) said they liked it. Seven (7%) of the respondents indicated they neither liked nor disliked it. None of the respondents seemed to dislike or dislike the flavour of *xigugu* very much.

The majority of the respondents 83 (75%) of them said that they liked the taste of *xigugu* very much, 18 (16%) indicated that they liked it, while 9 (9%) respondents indicated that they neither liked nor disliked it. None of the respondents seemed to dislike or dislike the taste of *xigugu* very much.

According to the ratings on the hedonic scale, the majority of the respondents 78 (71%) mentioned that they liked the appearance of the dish very much; 19 (17%) indicated that they liked it and 9 (8%) said they neither liked nor disliked it. Four (4%) respondents indicated that they disliked the appearance of *xigugu* very much. None of the respondents indicated they disliked *xigugu* very much.

Most of the respondents 76 (69%) indicated that they liked the texture of *xigugu* very much, while 20 (18%) liked it whereas twelve (11%) neither liked nor disliked it. Two (2%) of the respondents responded by saying they disliked the texture of *xigugu* very much and none indicated they disliked it very much.

5.4.2 Overall Acceptability of *Xigugu*

In terms of overall acceptability, as shown in Figure 5.6, the majority of the respondents 92 (84%) liked *xigugu* very much. Thirteen (12%) liked *xigugu* and only 5 (4%) of the tourists found *xigugu* neither acceptable nor unacceptable. None of the respondents disliked it nor disliked it very much.

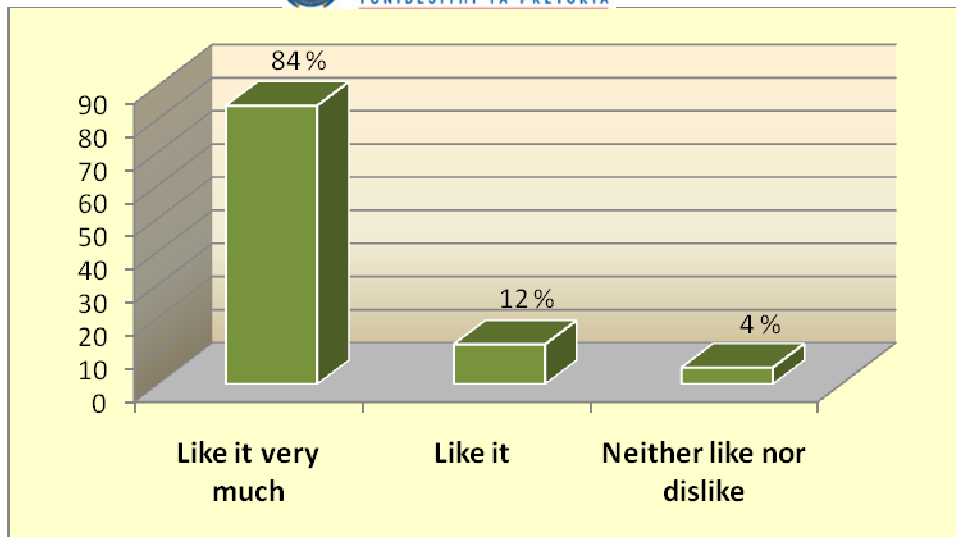


FIGURE 5.6: OVERALL ACCEPTABILITY RATING FOR *XIGUGU* (N=110)

5.4.3 Comments on the ratings for *Xigugu*

Respondents were asked to comment on the ratings.

The respondents intimated that the sensory attributes of *xigugu* were acceptable and that it was considered edible. Some described it as a filling dish, as tasty, nice and delicious. They also mentioned that it had an appetising colour, and a nice texture. Two respondents said they disliked it.

The respondents indicated that the *xigugu* was interesting and that it was good and excellent. Some of them found the dish exciting as it was an unusual dish. The respondents also indicated that the dish was authentic and original. Nutrition and health were factors that some of the respondents mentioned. They indicated that a diet consisting of such a food lowers the risk of cardio vascular diseases. The ingredients used were considered to be so economical to an extent that anyone could get and use them.

5.4.4 Acceptability ratings of *Xiendla hi vomu*

Figure 5.7 indicates the findings that emerged after the sensory attributes of *xiendla hi vomu* were rated on the 5-point hedonic scale.

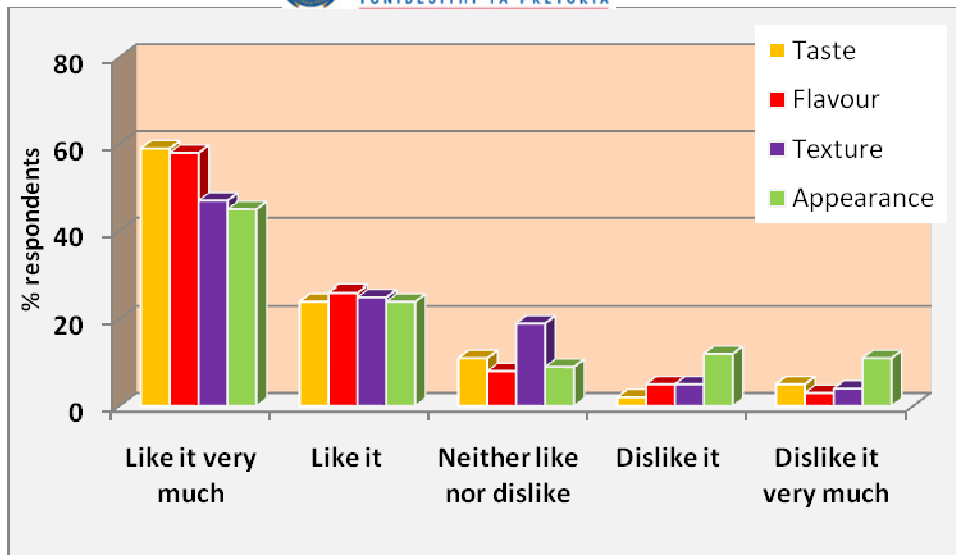


FIGURE 5.7: ACCEPTABILITY RATINGS OF THE SENSORY ATTRIBUTES OF XIENDLA HI VOMU (N=110)

The majority of the respondents 65 (59%) of them said that they liked the taste very much. Twenty-six (24%) respondents indicated that they liked it and only 12 (11%) said they neither liked nor disliked it. According to the ratings in terms of taste on the hedonic scale, 2 (2%) respondents indicated that they disliked the taste of *xiendla hi vomu* and only 5 (4%) disliked it very much.

Most of the respondents 64 (58%) indicated that they liked the flavour of *xiendla hi vomu* very much and 29 (26%) liked it. Nine (9%) respondents indicated they neither liked nor disliked it, while 5 (4%) respondents responded by saying they disliked the taste of *xiendla hi vomu* and 4 (3%) indicated they disliked it very much.

Most of the respondents 52 (47%) indicated that they liked the texture of *xiendla hi vomu* very much and 27 (25%) liked it. Twenty-one (19%) respondents indicated they neither liked nor disliked it. Six (5%) respondents responded by saying they disliked the taste of *xiendla hi vomu* and 4 (4%) disliked it very much.

Forty nine (45%) of the tourists mentioned that they liked the appearance of *xiendla hi vomu* very much and 26 (24%) liked it. Ten (9%) of them indicated that they neither liked nor disliked it. According to the ratings on the hedonic scale, 13 (12%) respondents indicated that they disliked the appearance of *xiendla hi vomu* and only 12 (10%) said they disliked it very much.

5.4.5 Overall acceptability of *Xiendla hi vomu*

In Figure 5.8 the overall acceptability rating for *xiendla hi vomu* is presented.

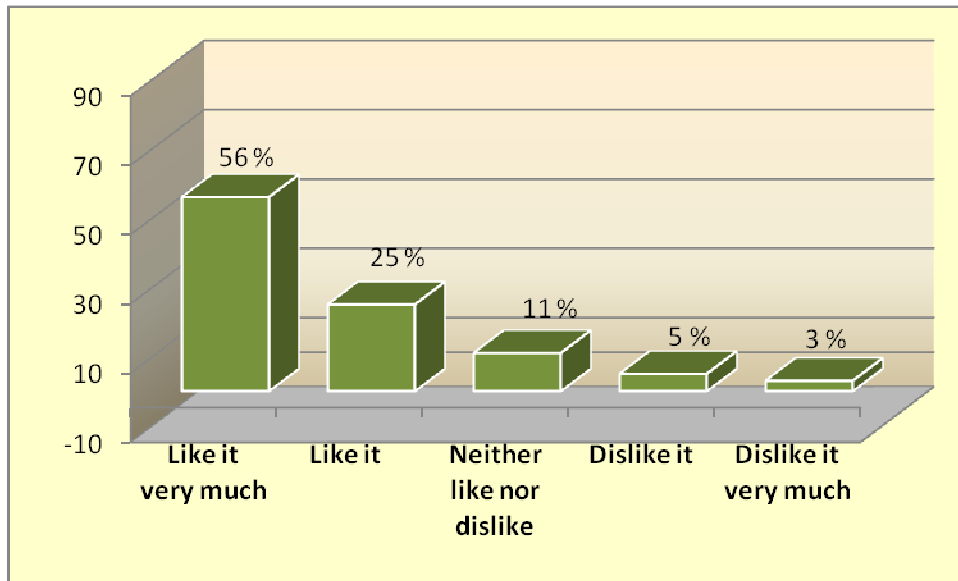


FIGURE 5.8: OVERALL ACCEPTABILITY RATINGS OF *XIENDLA HI VOMU* (N=110)

The majority of the respondents, 62 (56%) liked *xiendla hi vomu* very much and 28 (25%) liked it. Twelve (11%) of the respondents indicated that they neither like it nor dislike it. Some respondents 5 (5%) disliked it and 3 (3%) indicated that they disliked it very much.

5.4.6 Comments on the ratings of *xiendla hi vomu*

The majority of the respondents indicated that they liked *xiendla hi vomu* very much. Most of them liked the sensory attributes. They said that it was tasty and delicious. They indicated that it had an appetising colour, had a nice texture, a good flavour and that it was acceptable and filling. A small number of the tourists indicated that it had an unappetising colour, was salty, sweet and that its appearance needed attention.

Some of the comments given about *xiendla hi vomu* were based on the previous experience of the respondents. Most of the respondents who said this were those who were used to visiting other Tsonga-Shangaan Cultural Villages. These

respondents mentioned that they liked *xiendla hi vomu* because it was authentic and reflected the way they expected it to be.

Other respondents mentioned that *xiendla hi vomu* was interesting, new to them, enjoyable and also that it was good, excellent and exciting. Some looked at the nutritional and the health side of things in terms of the dish. They mentioned that it is a good way of eating healthy and that if you consume it everyday the ingredients are economical and readily available.

5.5 DIFFERENT RATINGS ON THE ACCEPTABILITY OF XIGUGU AND XIENDLA HI VOMU

From the results on the general acceptability of *xigugu* and *xiendla hi vomu* it was decided to further analyse in order to establish and compare how different characteristics of the respondents (age, gender, ethnic/cultural groups and tourists) from various countries rated the two dishes. The demographic characteristics of the respondents are represented in Table 5.1.

5.5.1 Age group

The respondents who participated in the study done at Shangana cultural village comprised of different age groups, 72 (65%) were between the ages 17 to 31, followed by the age group 32 to 42 comprising of 22 (20%) and only 16 (15%) of the respondents were in the age group 44 to 63.

Forty-seven (42%) of respondents from the age group 17-31 indicated that they liked *xigugu* very much as compared to the age 32-42 who were 12 (10%) and the 44-63 year olds who comprised 3 (2%).

Fifteen (14%) of the 17 to 31 years of age respondents indicated that they liked *xigugu* as compared to 9 (8%) of the 44 to 63 and 4 (4%) in the 32 to 42 year olds. The Y generation group who comprised 7 (6%) respondents gave a neutral response as compared to the Baby Boomers who were 3 (3%) and X generation who were 2

(2%). From the 5 (4%) respondents, the X generation were 3 (3%), followed by the Y generation and the Baby Boomers who comprised 1 (1%) each respectively. A very small number of the Y generation 2 (2%) compared to 1 (1%) of the X generation indicated that they disliked *xigugu* very much.

Out of the 92 (84%) respondents from all age groups, 64 (58%) of the respondents from the age group 17 to 31 indicated that they like *xiendla hi vomu* very much as compared to the age group 32 to 42 who made up 15 (14%) and the 44 to 63 year olds who comprised 13 (12%).

Six (5%) of the 17 to 31 years of age respondents indicated that they liked *xiendla hi vomu* as compared to 4 (4%) of the 32 to 42 age group and 3 (3%) of the 44 to 63 year olds. From the X generation 3 (3%) compared to 7 (6%) of the Y generation gave a neutral response. Baby Boomers gave no response. The 17 to 31 year olds seemed to be accepting the Tsonga-Shangaan dishes more and they were more willing to taste them than the other two generation groups.

5.5.2 Gender

Table 5.1, shows the composition of the females and males who were involved in the consumer sensory evaluation of the two dishes.

According to the findings, it was found that the same number 31 (28%) of males and females liked *xigugu* very much. There was a difference between the females, 18 (16%) and males 10 (9%) who indicated they just like *xigugu*. Seven (6%) of the females compared to 5 (4%) of the males indicated they neither liked nor disliked it. Only 3 (3%) and 2 (2%) males said they disliked it very and disliked it respectively. Three (3%) of the females indicated that they disliked it. None of them disliked it very much. With that slight difference between the males and females in terms of the acceptability of *xigugu*, females seemed to be more accepting of the dish than the males.

According to the findings, 51 (46%) females and 41 (37%) males liked *xiendla hi vomu* very much. There was slight a difference of between the males 7 (6%) and females 6 (4%) who indicated they just liked *xiendla hi vomu*. Three (3%) of the

males compared to 2 (2%) females indicated they neither liked nor disliked it. With that slight difference between the males and females, females seemed to be more accepting of the dish than the males.

5.5.3 Ethnic/cultural group

Table 5.1 shows the different ethnic/cultural groups represented by the respondents.

It was found that the Tsonga/Venda group accepted *xigugu* more readily than the other population groups. Thirty-three (42%) indicated that they like *xigugu* very much and only 3 (3%) of the respondents indicated they liked it. The international White respondents were the second largest group with 35 (31%) indicating that they like *xigugu* very much, followed by 9 (7%) of those who said they liked it and only 4 (4%) gave a neutral response. The local White group was least of the three groups, where only 5 (6%) of the respondents indicated that they like *xigugu* very much and only 1 (1%) liked it.

Out of the 36 (45%) Tsonga/Venda respondents, 34 (43%) indicated that they like *xiendla hi vomu* and only 2 (2%) gave a neutral feedback. With the White international group which comprised of 39 (48%) respondents, only 27 (34%) said they like *xiendla hi vomu*, 9 (11%) indicated neutral feedback and 3 (3%) said they disliked it. There were 6 (7%) of the local Whites of which only 4 (5%) said they like *xiendla hi vomu*, 1 (1%) indicated neutral feedback and only 1 (1%) said they disliked it.

5.5.4 Tourists

Table 5.1 shows composition of the local and foreign respondents.

Twenty-six (24%) of the international tourists indicated that they liked *xigugu* very much. Eighteen (16%) liked it while 9 (8%) indicated that they neither liked it nor disliked it. A very small number of respondents 2 (2%) said they respectively disliked and disliked it very much. In terms of the local respondents, 36 (32%) indicated that they really liked it very much. Ten (9%) said they liked it and only 3 (3%) gave a

neutral response. Three (3%) and 1 (1%) of the respondents said they disliked it very much and disliked it respectively.

Forty-five (41%) of the international tourists indicated that *xiendla hi vomu* was very acceptable to them. Eight (7%) liked it and 4 (4%) indicated that they neither liked it nor disliked it. Of the local respondents, 47 (43%) said that they really liked it very much, 5 (4%) said they liked it and only 1 (1%) gave a neutral response.

5.6 SUMMARY

Discussion of the results of this study was presented in this chapter. The results were analysed and interpreted using quantitative calculations expressed as tables and graphic representations. Tables were not only important for showing frequency of distribution of responses from the respondents, but were also used to demonstrate the ranked order of the frequency and the degree of importance attached to the different sensory attributes considered to contribute to the acceptability of *xiendla hi vomu* and *xigugu*.

It was found that 105 (95%) of the respondents indicated that they overall accepted *xiendla hi vomu* and 93 (85%) accepted *xigugu*. It is concluded that *xiendla hi vomu* and *xigugu* are acceptable to the majority of the tourists in terms of individual sensory attributes of *xigugu* and *xiendla hi vomu* and the overall acceptability ratings. This was supported by willingness of consumption of dishes at Shangana cultural village 105 (95%) of the respondents indicated that they would use or consume dishes such as these when presented to them.

Chapter 6 will deal with the conclusions in relation to the objectives of the study with reference to the development and standardisation of *xigugu* and *xiendla hi vomu* for inclusion in the menus offered in ethnic restaurants and rating the acceptability of *xigugu* and *xiendla hi vomu* in terms of the sensory attributes (appearance, taste, flavour and texture) and overall acceptability and the frequency of consumption of the two dishes. Finally an evaluation of the study is given and further research possibilities and recommendations are proposed.

Chapter 6

CONCLUSIONS, EVALUATION AND RECOMMENDATIONS OF THE STUDY

6.1 INTRODUCTION

Chapter 6 will deal with the conclusions in relation to the study's objectives and the methods used. Suggestions for further investigation and research will be made. Recommendations arising from this study relate to the development and standardisation of traditional dishes such as *xigugu* and *xiendla hi vomu* to ensure their acceptability and consumption in ethnic restaurants and cultural villages.

In this research, the purpose of rating the consumers' expectations in respect of the sensory attributes such as, appearance, taste, flavour, texture and overall acceptability provided a framework for determining whether these two dishes are actually suitable for inclusion on the menus of cultural villages.

The objectives for Phase I and Phase II of the study were successfully met in terms of the discussion and interpretation of the results and the conclusions reached. The model applied in this research could be a model that can be applied in other cultural villages as a component of culinary tourism thus furthering documentation of indigenous knowledge.

Having dealt with the results and discussions of the study done, the next section will be on the conclusions, evaluation and recommendations of the study.

6.2 CONCLUSIONS

6.2.1 Conclusions with regard to the development and standardisation of *xigugu* and *xiendla hi vomu* for inclusion on menus at ethnic /cultural restaurants

The recipes for *xigugu* and *xiendla hi vomu* were successfully developed and standardised for large scale food production, this was attributed to two reasons, firstly there were two persons who were familiar with the Tsonga-Shangaan cuisine and culture who were involved with the preparation procedures and secondly scientific procedures were followed during the development and standardisation of the recipes.

The assistance of two enculturated Tsonga-Shangaan ladies during the development and standardisation process contributed to ensure that the authenticity of these dishes were captured, maintained and preserved during the development and standardisation process. This together with involving students who were familiar with these dishes in the informal evaluation during the enlargement contributed to successfully standardising them for large-scale food production. The involvement of thoroughly enculturated females during the development and standardisation of culture-specific dishes should be promoted in future projects where the culinary heritage of a group is captured.

Precision in following the procedures set out by Spears and Gregoire, (2010: 211) to develop and standardise recipes. This was achieved by following the recipe standardisation process which is a cyclic process of three phases: (1) recipe verification; (2) product evaluation; and (3) quantity adjustment.

The two Tsonga-Shangaan ladies prepared the dishes as they usually did at home. During the preparation the ingredients were measured and weighed according to the requirement of a standardised recipe in order to get precise measurements. The household recipes of the two dishes were prepared and informally evaluated according to the evaluation criteria given in Addendum B.

After checking the recipes for authenticity in terms of type of ingredients used and the ratio of ingredients, the household recipes were prepared and evaluated for appearance, taste, flavour and texture. The procedures were recorded and the dishes prepared at each trial were evaluated during the process according to the recipe evaluation form (Addendum A) which was used by the panel of experts who also used this sensory evaluation recipe form (Addendum B – a 5-point hedonic scale according to consumer sensory evaluation techniques) which was used by the above mentioned panel. The recipes were prepared the way they were given to the researcher. The criteria were set according to the characteristics of the authentic dishes. Quantities and procedures were noted.

6.2.2 Conclusion with regard to determining the acceptability of *xigugu* and *xiendla hi vomu* in terms of the sensory attributes

In terms of the acceptability to the sensory attributes (appearance, taste, flavour and texture) the dishes presented were found to be acceptable as most of the respondents indicated that they were satisfied with the quality of the two dishes presented. Figure 5.5 and Figure 5.7 indicate the ratings.

The majority of respondents indicated that they liked the appearance, taste, flavour and texture of *xigugu* and *xiendla hi vomu*. Seventy one percent of the respondents who evaluated *xigugu* indicated that they liked the appearance very much. The majority of the respondents, 75% indicated that they liked the taste of *xigugu* very much. With regard to the flavour, 86% of the respondents indicated that they liked of it very much and 76% of the respondents mentioned that they liked the texture of *xigugu* very much.

In terms of appearance, 45% of the respondents who evaluated *xiendla hi vomu* indicated that they liked it very much while 59% of the respondents indicated that they liked *xiendla hi vomu* very much in terms of taste. With regard to flavour 58% indicated that they liked *xiendla hi vomu* very much. Forty seven percent of the respondents mentioned that they liked its texture very much.



6.2.3 Conclusion with regard to describing the overall acceptability of *xigugu* and *xiendla hi vomu*

Both *xigugu* and *xiendla hi vomu* were rated as overall acceptable dishes as 84% and 56% of the respondents respectively indicated that they liked them very much. Both dishes are prepared with familiar ingredients that were combined in unusual ways to produce interesting flavours and textures. This was enhanced by the comments of the respondents that the dishes were enjoyable, excellent, authentic, tasty, delicious and appetising. See Figure 5.6 and Figure 5.8 showing the ratings.

According to Sparks *et al.* (2001) local culture-specific cuisine should be offered by restaurants in a tourist destination, as food was considered the most important aspect of culture. The reasons most of the respondents found these two dishes acceptable, are the fact that familiar ingredients were used and the dishes were considered interesting with their combination of flavours. The respondents mentioned that the dishes were healthy, enjoyable, excellent, authentic, tasty, delicious and appetising in terms of colour and texture. Tourists are likely to want to try “typical” products during their holidays because it gives them a sense that, if you want to be a good traveller, you must engage with the food of the region (Ilbery *et al.*, 2003: 117; Cayot, 2007).

6.2.4 Conclusion with regard to offering authentic (traditional) South African dishes on the menu at a cultural/ethnic restaurant

From the above results, it is clear that the majority of the respondents 95% would consume authentic (traditional) dishes on the menu at a cultural/ethnic restaurant. The intention of consumption of the two dishes coupled with high levels of satisfaction with the food. There may be a correlation between satisfaction and a consumer’s willingness to return to an establishment (Kivela, *et al.*, 1999; Cardello, *et al.*, 2000; Cayot, 2007).

6.3 EVALUATION OF THE STUDY

It is important on completion of a research project, to make a truthful and objective assessment of the study conducted. An evaluation of the research design together with issues related to validity and reliability are of importance. The usefulness of the data collection methods employed in this study for other researchers are included.

6.3.1 Research design

The study was exploratory and descriptive in nature. A quantitative research design was adopted and the study was conducted through an action research approach. The aim of the first phase was to develop and standardise recipes for two traditional Tsonga-Shangaan dishes for large scale production and was conducted through an action research approach. The second phase was devoted to exploring and describing how acceptable these dishes were when presented on the menu at a cultural village as part of the cultural experience to tourists to determine the acceptability thereof to them. A structured questionnaire with open-ended and closed- ended questions was used to collect data in the second phase of the study.

6.3.2 Validity and reliability for the first and second phases of the study

The value and application of the results of any research study depends on the validity and reliability. Validity implies the extent to which the information collected by the researcher truly reflects the phenomenon being studied (Veal, 1997: 35; Neuman, 2007: 164; Babbie & Mouton, 2001: 122), while reliability refers to dependability or consistency or to the extent to which research findings would be the same if the research were to be repeated at a later date or with a different sample of subjects (Veal, 1997: 35; Neuman, 2007: 164; Babbie & Mouton, 2001: 119). The requirements regarding the validity and reliability of the study were taken into consideration throughout the study and how this was ensured in this study is explained.

6.3.2.1 Validity

Available literature sources on steps to be followed during recipe development and standardisation (first phase) were followed as set out by various sources (Hullah, 1984: 110; Swanepoel, *et al.*, 1992: 2; Spears & Gregoire, 2010: 210-219). These guidelines were closely followed to ensure control and consistency in the recipe development and standardisation process. See Chapter 4 (4.3.1 – 4.3.3).

Steps to ensure the validity of the study were included in the target population in order to guarantee that the sample was representative and this was done during the second phase of the study. A prerequisite for the generalisation of findings is by using a representative sample of the target population and ensuring a sizeable and representative response.

❖ **Content validity** refers to the extent to which a measure covers the range of meanings embodied within the concept (Babbie & Mouton, 2001: 123). To support content validity the following steps were taken when compiling the survey questionnaire:

- A wide variety of sources were consulted in order to identify aspects applicable to determining food acceptance.
- A statistician and subject experts evaluated the questionnaire for content as well as measurement of validity. The questionnaire was also pre-tested at Shangana; and
- A previous questionnaire used by Kivela *et al.* (1999) was used to design the questionnaire to be used in this study. This increased the questionnaire's validity.

❖ **Construct validity** is based on the logical relationships among variables (Babbie & Mouton, 2001: 123). Construct validity refers to the extent to which a scale, index or list of items measure the relevant construct and not something else (Mouton, 1996: 128). To support construct validity, the following steps were taken:

- Throughout the recipe development and standardisation process in phase I, the measurement, preparation steps and methods were accurately and consistently recorded. Adaptations and evaluations to the recipes were also recorded.
- A standardised consumer sensory evaluation test (the five point hedonic scale) was employed to determine the acceptability of *xigugu* and *xiendla hi vomu* in the second phase of the study. This is a recognised standardised sensory evaluation test (Lawless & Heymann, 2010: 31).
- Triangulation is a process of using multiple data sources, data collection methods, evaluations, or theories to study an issue from different perspectives, validate research findings, help eliminate bias, and detect errors or anomalies in results.

Triangulation is when more than one source was used to gather information regarding developing and standardising recipes and how to measure food choice and acceptability (Horton, Alexaki, Bennett-Lartey, Brice, Campilan, Carden, De Souza Silva, Duong, Khadar, Boza, Muniruzzaman, Perez, Chang, Vernoooy & Watts, 2003: 164)

- More than one method was used to gather data. A questionnaire was designed and observations carried out. Most tourists did not complete the questionnaire but they liked and ate the food that was being evaluated. This proved that the dishes were enjoyed.

6.3.2.2 Reliability

To make sure that the results were reliable, in the first phase of the study the development and standardisation process of the dishes was repeated three times and all procedures were recorded until the same results in terms of the authenticity, portion sizes and sensory characteristics were achieved with each enlargement of the recipes. When executing the consumer sensory evaluation in the second phase, standard sensory evaluation procedures and conditions were employed as described by Lawless and Heymann (1998: 32).

Research is also expected to produce reliable data. This means that if the same measures were used and conditions under which data were collected were held as constant as possible, the same data should be collected from similar situations (Bless, *et al.*, 2006: 125; Mouton, 1996: 129).

For phase II, in order to reduce possible sources of error during data collection by means of the questionnaires, the following precautions were taken: a cover letter was attached to the questionnaires to emphasise, the purpose of the study; the researcher's affiliation; and that confidentiality and anonymity were guaranteed. The questionnaire was constructed in such a manner that it did not take too long to complete; and the questions were relevant and easy to understand. The questionnaire was pre-tested by means of a pilot test by tourists at Shangana, as well as the fact that the sample frame was relatively large (respondents were from all over the world), the results should be reliable.

6.3.3 Data collection methods and their usefulness to other researchers

For phase I, during the development and standardisation process, information was gathered by following the evaluation criteria stated in Addenda A and B. The use of action research as a method to capture indigenous knowledge worked well and it is recommended as a procedure for future projects that seek to secure the authenticity required for culinary tourism as a national priority in South Africa and at other similar institutions. This type of research is cyclic (the steps involved reoccur in similar sequences during the process).

The questionnaire used in phase II provided information needed to meet the objectives of the study. It involved the participation of people in a real life situation as has been done with the consumer sensory evaluation at Shangana with the tourists. One can conclude that the questionnaire was the appropriate method of collecting data for this type of study. Moreover it is one that could be used for further researches in the same field of study.

The self-administered questionnaire proved to be an excellent instrument for data collection. Respondents filled it in easily and gave relevant responses. All the 110 questionnaires that were distributed were returned. However, not all respondents

completed Section C fully. The returned questionnaires provided a sizeable and representative sample.

6.4 FURTHER RESEARCH POSSIBILITIES

Arising from the results of the study, certain aspects could be pursued and even developed further. These are:

- ❖ The development and standardisation of cultural-specific food for use at cultural villages and ethnic restaurants;
- ❖ A study on cultural-specific food consumption patterns of urban and rural communities;
- ❖ The role of food as a motivator and determinant of visiting and choosing a destination.

6.5 RECOMMENDATIONS FOR SHANGANA CULTURAL VILLAGE

The following recommendations are made for improvements at Shangana cultural village with regards to cultural-specific foods:

- ❖ They should consider including more of the Tsonga-Shangaan dishes;
- ❖ They should learn (their preparation, cooking and serving) more about traditional cultural-specific foods of the Tsonga-Shangaan; and
- ❖ They should include traditional cultural-specific foods of other ethnic groups and nationalities.
- ❖ They should consider to offer their visitors dishes such mopani worms, green leafy vegetables (delela, mkhushu, thepe), indigenous beverages, wild fruits and vegetables, varieties of porridges on their own and those combined with other foods such as vegetables, legumes and milk.



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Addendum A

SENSORY EVALUATION OF THE RECIPES

Menu item: _____

Date of evaluation: _____

Evaluator: _____

Recipe source: _____

| Characteristics of the dish | Score | Recommendations |
|-----------------------------|-------|-----------------|
| Appearance (colour, shape) | | |
| | | |
| | | |
| | | |
| Taste and Flavour | | |
| | | |
| | | |
| | | |
| Texture | | |
| | | |
| | | |
| | | |
| Portion size | | |
| | | |
| | | |
| | | |
| Overall acceptability | | |
| | | |
| | | |
| | | |

Evaluation Scale

1 = unacceptable

2 = poor

3 = satisfactory

4 = good

5 = excellent



Addendum B

RECIPE EVALUATION CARD

Date: _____

Quantity prepared _____

Is the yield obtained the same as stated? _____

If not, what quantity was obtained? _____

Do you consider size of portion adequate? _____

If not, what change would you suggest? _____

Was the product well accepted? _____

Any other suggestions _____

Addendum C

TRIPLE TESTING RESULTS OF *XIGUGU*

| 10 Portions | | | 20 Portions | | | 40 Portions | | | 100 Portions | | |
|---|--|-----------------------|--|-------------------------------------|-----------------------|---|--|-----------------------|--|--|--|
| Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 |
| Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time |
| 1 Hour 30 minutes | 2 Hours 30 minutes | As in Trial 2 | 2 Hours 30 minutes | As in Trial 1 | As in Trial 1 | 2 Hours 30 minutes | As in Trial 1 | As in Trial 1 | 2 Hours 30 minutes | As in Trial 1 | As in Trial 1 |
| Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients |
| 200g maize kernels (dry and sifted) | 130g maize kernels (dry and sifted) | As in Trial 2 | 260g maize kernels (dry and sifted) | 260g maize kernels (dry and sifted) | As in Trial 2 | 520g maize kernels (dry and sifted) | 520g maize kernels (dry and sifted) | As in Trial 2 | 780g maize kernels (dry and sifted) | 800g maize kernels (dry and sifted) | 800g maize kernels (dry and sifted) |
| 300g peanuts (raw) | 200g peanuts (raw) | | 400g peanuts (raw) | 400g peanuts (raw) | | 800g peanuts (raw) | 800g peanuts (raw) | | 1,2kg peanuts (raw) | 2kg peanuts (raw) | 2kg peanuts (raw) |
| 4ml salt | 2ml salt | | 4ml salt | 3ml salt | | 6ml salt | 10ml salt | | 13ml salt | 13ml salt | 30ml salt |
| Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation |
| 1. Sort and weigh maize kernels. | 1. Sort and weigh maize kernels. | As in Trial 2 | 1. Sort and weigh maize kernels. | As in Trial 1 | As in Trial 1 | 1. Sort and weigh maize kernels. | 1. Sort and weigh maize kernels. | As in Trial 2 | 1. Sort and weigh maize kernels. | As in Trial 1 | As in Trial 1 |
| 2. Roast the maize kernels for 15 minutes in pan until brown. Leave to cool. | 2. Roast the maize kernels for 15 minutes in pan until brown. Leave to cool. | | 2. Roast the maize kernels for 15 minutes in pan until brown. Leave to cool. | | | 2. Roast the maize kernels for 15 minutes in pan until brown. Leave to cool. | 2. Roast the maize kernels for 15 minutes in pan until brown. Leave to cool. | | 2. Roast the maize kernels for 15 minutes in pan until brown. Leave to cool. | | |
| 3. Grind maize kernels for 10 minutes with Robot Coup R301 Plus. | 3. Grind maize kernels for 10 minutes with Robot Coup R301 Plus. | | 3. Grind maize kernels for 10 minutes with Robot Coup R301 Plus. | | | 3. Grind maize kernels for 10 minutes with Robot Coup R301 Plus. | 3. Grind maize kernels for 10 minutes with Robot Coup R301 Plus. | | 3. Grind maize kernels for 10 minutes with Robot Coup R301 Plus. | | |
| 4. Sieve the maize kernels. | 4. Sieve the maize kernels. | | 4. Sieve the maize kernels. | | | 4. Sieve the maize kernels. | 4. Sieve the maize kernels. | | 4. Sieve the maize kernels. | | |
| 5. Sort and weigh peanuts. | 5. Sort and weigh peanuts. | | 5. Sort and weigh peanuts. | | | 5. Sort and weigh peanuts. | 5. Sort and weigh peanuts. | | 5. Sort and weigh peanuts. | | |
| 6. Roast peanuts for 15 minutes in pan until brown (with skins). Leave to cool. | 6. Roast peanuts for 15 minutes in pan until brown (with skins). Leave to cool. | | 6. Roast peanuts for 15 minutes in pan until brown (with skins). Leave to cool. | | | 6. Roast peanuts for 15 minutes in pan until brown (with skins). Leave to cool. | 6. Roast peanuts for 15 minutes in pan until brown (with skins). Leave to cool. | | 6. Roast peanuts for 15 minutes in pan until brown (with skins). Leave to cool. | | |
| 7. Grind the peanuts (with skins) for 5 minutes with Robot Coup R301 Plus. | 7. Grind the peanuts (with skins) for 5 minutes with Robot Coup R301 Plus. | | 7. Grind the peanuts (with skins) for 5 minutes with Robot Coup R301 Plus. | | | 7. Grind the peanuts (with skins) for 5 minutes with Robot Coup R301 Plus. | 7. Grind the peanuts (with skins) for 5 minutes with Robot Coup R301 Plus. | | 7. Grind the peanuts (with skins) for 5 minutes with Robot Coup R301 Plus. | | |
| 8. Mix the ingredients use the Kenwood Major mixer at speed 2 for 45 minutes. Mix ingredients together until they form a brown compact mixture. | 8. Mix the ingredients use the Kenwood Major mixer at speed 2 for 1 hour 45 minutes . Mix ingredients together until they form a brown compact mixture. | | 8. Mix the ingredients use the Kenwood Major mixer at speed 2 for 1 hour 45 minutes. Mix ingredients together until they form a brown compact mixture. | | | 8. Mix the ingredients use the Kenwood Major mixer at speed 2 for 45 minutes. Mix ingredients together until they form a brown compact mixture. | 8. Mix the ingredients use the Kenwood Major mixer at speed 2 for 1 hour 45 minutes . Mix ingredients together until they form a brown compact mixture. | | 8. Mix the ingredients use the Kenwood Major mixer at speed 2 for 1 hour 45 minutes. Mix ingredients together until they form a brown compact mixture. | | |
| 9. Determine the final yield and divide into 10 portions of approximately 50 g each. | 9. Determine the final yield and divide into 10 portions of approximately 25 g each. | | 9. Determine the final yield and divide into 10 portions of approximately 25 g each. | | | 9. Determine the final yield and divide into 40 portions of approximately 25 g each. | 9. Determine the final yield and divide into 40 portions of approximately 25 g each. | | 9. Determine the final yield and divide into 100 portions of approximately 25 g each. | | |

| 10 Portions | | | 20 Portions | | | 40 Portions | | | 100 Portions | | |
|---|--|---------------|-------------|--|---------------|-------------|--|---------------|--|--|---------------|
| Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 |
| Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield |
| 680g | 270g | As in Trial 2 | 550g | As in Trial 1 | As in Trial 1 | 1100g | As in Trial 1 | As in Trial 1 | 2950g | 2733g | As in Trial 2 |
| Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments |
| Salty Coarse Time short for cooking Portion sizes too big | Acceptable taste, appearance and texture | As in Trial 2 | A bit salty | Acceptable taste, appearance and texture | As in Trial 2 | Less salty | Acceptable taste, appearance and texture | As in Trial 2 | Less salty Peanut taste undetected | Acceptable taste, appearance and texture | As in Trial 2 |

Addendum D

TRIPLE TESTING RESULTS OF *XIENDLA HI VOMU*

| 10 Portions | | | 20 Portions | | | 40 Portions | | | 100 Portions | | |
|--|-----------------------|-----------------------|--|-----------------------|-----------------------|--|--|-----------------------|--|--|-----------------------|
| Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 |
| Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time | Cooking Time |
| 2½-3 Hours | As in Trial 1 | As in Trial 1 | 2½-3 Hours | As in Trial 1 | As in Trial 1 | 2½-3 Hours | As in Trial 1 | As in Trial 1 | 2½-3 Hours | As in Trial 1 | As in Trial 1 |
| Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients | Ingredients |
| 400g cowpeas | 400g cowpeas | As in Trial 2 | 800g cowpeas | 800g cowpeas | As in Trial 2 | 1,6kg cowpeas | 1,2kg cowpeas | As in Trial 2 | 2kg cowpeas | 3,5kg cowpeas | As in Trial 2 |
| 350g maize kernels | 350g maize kernels | | 700g maize kernels | 700g maize kernels | | 1,4kg maize kernels | 800g maize kernels | | 1,5kg maize kernels | 3kg maize kernels | |
| off cob (fresh) | off cob (fresh) | | off cob (fresh) | off cob (fresh) | | off cob (fresh) | off cob (fresh) | | off cob (fresh) | off cob (fresh) | |
| 150g peanuts | 150g peanuts | | 300g peanuts | 300g peanuts | | 600g peanuts | 450g peanuts | | 750g peanuts | 1,6kg peanuts | |
| 10ml oil | 20ml oil | | 40ml oil | 50ml oil | | 100ml oil | 100ml oil | | 200ml oil | 300ml oil | |
| 4ml salt | 7ml salt | | 14ml salt | 10ml salt | | 20ml salt | 30ml salt | | 60 ml salt | 50ml salt | |
| 2.5l water | 2.5l water | | 5l water | 4.5l water | | 8l water | 7l water | | 11,5l water | 14l water | |
| Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation | Method of Preparation |
| 1. Sort and weigh the cowpeas. | As in Trial 1 | As in Trial 1 | 1. Sort and weigh the cowpeas. | As in Trial 1 | As in Trial 1 | 1. Sort and weigh the cowpeas. | 1. Sort and weigh the cowpeas. | As in Trial 2 | 1. Sort and weigh the cowpeas. | 1. Sort and weigh the cowpeas. | As in Trial 2 |
| 2. Soak cowpeas overnight. | | | 2. Soak cow peas overnight. | | | 2. Soak cowpeas overnight. | 2. Soak cowpeas overnight. | | 2. Soak cowpeas overnight. | 2. Soak cowpeas overnight. | |
| 3. Add oil to 1,5l cooking water, and boil cowpeas for 1 hours in a pot. | | | 3. Add oil to 2.5l cooking water, and boil cowpeas for 2 hours in a pot. | | | 3. Add oil to 4l cooking water, and boil cowpeas for 2 hours in a pot. | 3. Add oil to 3l cooking water, and boil cowpeas for 2 hours in a pot. | | 3. Add oil to 5l cooking water, and boil cowpeas for 2 hours in a pot. | 3. Add oil to 7l cooking water, and boil cowpeas for 2 hours in a pot. | |
| 4. Weigh the maize kernels, then, add to the cowpeas without stirring when the cowpeas are soft. | | | 4. Weigh the maize kernels, then, add to the cowpeas without stirring when the cowpeas are soft. | | | 4. Weigh the maize kernels, then, add to the cowpeas without stirring when the cowpeas are soft. | 4. Weigh the maize kernels, then, add to the cowpeas without stirring when the cowpeas are soft. | | 4. Weigh the maize kernels, then, add to the cowpeas without stirring when the cowpeas are soft. | 4. Weigh the maize kernels, then, add to the cowpeas without stirring when the cowpeas are soft. | |
| 5. Boil until they mix then add 500ml water. | | | 5. Boil until they mix then add 1l of water. | | | 5. Boil until they mix then add 2l water. | 5. Boil until they mix then add 2l water. | | 5. Boil until they mix then add 3l water. | 5. Boil until they mix then add 3l water. | |
| 6. Boil for a further 30 minutes until the ingredients are well mixed. | | | 6. Boil for a further 30 minutes until the ingredients are well mixed. | | | 6. Boil for a further 30 minutes until the ingredients are well mixed. | 6. Boil for a further 30 minutes until the ingredients are well mixed. | | 6. Boil for a further 30 minutes until the ingredients are well mixed. | 6. Boil for a further 30 minutes until the ingredients are well mixed. | |
| 7. Weigh the grinded peanuts, add with the remaining water without stirring to the other ingredients and leave to boil for a further 30 minutes. | | | 7. Weigh the grinded peanuts, add with the remaining water without stirring to the other ingredients and leave to boil for a further 30 minutes. | | | 7. Weigh the grinded peanuts, add with the remaining water without stirring to the other ingredients and leave to boil for a further 30 minutes. | 7. Weigh the grinded peanuts, add with the remaining water without stirring to the other ingredients and leave to boil for a further 30 minutes. | | 7. Weigh the grinded peanuts, add with the remaining water without stirring to the other ingredients and leave to boil for a further 30 minutes. | 7. Weigh the grinded peanuts, add with the remaining water without stirring to the other ingredients and leave to boil for a further 30 minutes. | |
| 8. Add salt and stir using a large wooden spoon and leave to simmer for a further 30 minutes to an hour. | | | 8. Add salt and stir using a large wooden spoon and leave to simmer for a further 1 hour. | | | 8. Add salt and stir using a large wooden spoon and leave to simmer for another hour. | 8. Add salt and stir using a large wooden spoon and leave to simmer for another hour. | | 8. Add salt and stir using a large wooden spoon and leave to simmer for another hour. | 8. Add salt and stir using a large wooden spoon and leave to simmer for another hour. | |
| | | | 9. Determine the | | | 9. Determine the final yield and divide | 9. Determine the final yield and divide | | 9. Determine the final yield and divide | 9. Determine the final yield and divide | |

| 10 Portions | | | 20 Portions | | | 40 Portions | | | 100 Portions | | |
|--|--|-----------------|---|--|-----------------|--|--|-----------------|---------------------------------|--|-----------------|
| Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 | Trial 1 | Trial 2 | Trial 3 |
| 9. Determine the final yield and divide into 10 portions of approximately 150g each. | | | final yield and divide into 20 portions of approximately 150g each. | | | into 40 portions of approximately 150g each. | | | into 100 portions of 150g each. | | |
| Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield | Yield |
| 2000g | As in Trial 1 | As in Trial 1 | 3600g | 3050g | As in Trial 2 | 8250g | 6020g | As in Trial 2 | 18250g | 15239g | As in Trial 2 |
| Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments | Comments |
| Less salty | Acceptable taste, appearance and texture | As in Trial 2 | Salty A bit watery | Acceptable taste, appearance and texture | As in Trial 2 | Less salt Yield of the dish too much A bit dry | Acceptable taste, appearance and texture | As in Trial 2 | Comments: A bit dry Salty | Acceptable taste, appearance and texture | As in Trial 2 |



Addendum E

100 PORTION STANDARDISED RECIPE FOR *XIGUGU*

| UP 2011 | DISH | <i>XIGUGU</i> | | | | Source |
|---------|--------------------|---|------------------------|-------------------------|---|------------------------------------|
| | Description | Peanuts and maize dish | | | | Tsonga-Shangaan |
| | 100p g/ml | Ingredients | Method | Time/Temperature | Equipment | |
| | | PRE-PREPARATION Sort and measure the ingredients | | | | Mettler PE 24 scale |
| | 800 g | Maize kernels (dry) | Roast and grind | 45 min | Electric tilting frying pan Robot coup | |
| | 2 Kg | Peanuts (raw) | Roast and grind | 30 min | Electric tilting frying pan Robot coup | |
| | 30 ml | Salt | | | | |
| | | | Sift the maize kernels | 20 | Sieve | |
| | | PREPARATION Mix all the ingredients | | | | 5 min Wooden spoon |
| | | Mix ingredients to a compact mixture | | | | 3 Hours 3100 Automatic Magi Mix |
| | | SERVING Slice the <i>xigugu</i> | | | | 10 min Knife |
| | | Place on a wooden platter | | | | |

Addendum F

100 PORTION STANDARDISED RECIPE FOR *XIENDLA HI VOMU*

| UP | DISH | <i>XIENDLA HI VOMU</i> | | | Source | |
|------|-------------|---|-------------------------------|--|------------------|---------------------|
| 2011 | Description | Cow peas/jugo beans, maize kernels and peanuts dish | | | Tsonga-Shangaan | |
| P | 100p | g/ml | Ingredients | Method | Time/Temperature | Equipment |
| | | | <u>PRE-PREPARATION</u> | Collect, sort, and weigh the ingredients | | Mettler PE 24 scale |
| | 3,5 | kg | Cowpeas | Soak legumes | Over-night | |
| | 3 | kg | Maize kernels, fresh | Peel and weigh | 15 min | Mettler PE 24 scale |
| | 1,6 | kg | Peanuts (raw) | Grind | | Robot coup |
| | 300 | ml | Oil | | | Measuring jug |
| | 50 | ml | Salt | | | Measuring spoon |
| | 14 | ℓ | Water | | | Measuring jug |
| | | | <u>PREPARATION</u> | Boil 5ℓ water, add oil and legumes and boil | 2 hours/200 °C | Large scale pot |
| | | | | Add maize to legumes. No stirring. Add another 5ℓ of water and simmer. | 30 min | Measuring jug |
| | | | | Add peanuts and the remaining water. No stirring and simmer. | 30 min/150 °C | |
| | | | | Add salt and stir. Leave to simmer until well done. | 1 hour/100 °C | Wooden spoon |
| | | | <u>SERVING</u> | Place on a wooden bowl. | | |

Addendum G

APPLICATION TO REQUEST DATA

University of Pretoria
Faculty of Natural and Agricultural
Sciences
Department of Consumer Science
PRETORIA
0002

The Manager
Mr Chris Maluleke
P.O. Box 2500
Hazyview
1242
MPUMALANGA

APPLICATION FOR A REQUEST TO COLLECT DATA AT YOUR CULTURAL VILLAGE ON THE ACCEPTABILITY OF TWO TSONGA-SHANGAAN DISHES

I hereby ask permission to collect data for my research on the acceptability of the Tsonga-Shangaan dishes (Xigugu and Xiendla hi vomu) at your Cultural Village (Shangana) during the time you will be hosting functions and having tourists (local and or international) visiting the place during this Easter Holidays (19 to 21 March 2008). I am currently doing my Masters degree in Consumer Science at the University of Pretoria.

Xigugu, is a dish prepared from coarsely grounded maize grains, which are roasted, then mixed with finely grounded peanuts to form a compact mass. Salt and sugar are added for taste. Xiendla hi vomu is a dish prepared from cowpeas, peanuts and maize grains.

The data collection at your Cultural Village will involve having people taste the dishes to determine their acceptability and whether the people will use them in future. The people won't be forced to take part in the study, only those who are willing to participate will be considered. Each person will have to fill in a consent form to confirm that they are willing to taste the products. This is done because tourists like to experience authentic traditional cuisine from different cultural groups in countries they visit.

It will be of great advantage to you in terms of serving more of the Tsonga-Shangaan indigenous dishes to the tourists because that would enhance the total cultural experience of visiting a Cultural Village.

I will be very grateful if you may allow me to collect data at your Cultural Village

Yours Faithfully

Miss M.T. Malaza

Cell: 083 5210619 Work: 015 9628627
Fax: 015 9628598 e-mail: thembi.malaza@univen.ac.za

Addendum H

DATA COLLECTION CONFIRMATION

“Best Authentic African Cultural Experience since 1999”

Shangana Cultural Village (Proudly managed by) Thokozela



✉ Tel: + 27 (013)737 5804 or 5805 📠 Fax: International +27(013) 737 7007
📠 Fax National: 086 653 3452 📞 Cell: 072 308 0960 ✉ PO Box 2500 Hazyview
1242
e-mail: chris@shangana.co.za web address: www.shangana.co.za



PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

TO WHOM IT MAY CONCERN 30/11/2009

Dear Sir/Madam

This letter serves to confirm that Molly Thembi Malaza from the University of Pretoria has completed her three days data collection programme at Shangana Cultural Village. She was placed at the Kitchen where she was preparing the two traditional dishes and serving the tourists from the 20th – 22nd of March 2008.

Please do not hesitate to contact me for any additional information regarding her data collection at the above mentioned company.

Regards

Chris Maluleke(General Manager)

Addendum I

CONSENT LETTER

Sensory Evaluation of selected Tsonga-Shangaan dishes made from legumes and cereals

Thank you for your willingness to participate in a sensory evaluation project at Shangana Cultural Village

Voluntary Nature of Participation: I understand that participation in this project is completely voluntary. I do not have to participate in this project.

Risks to the Individual: I understand that I will evaluate cereal and legume dishes using descriptive sensory evaluation. The risk involved in eating the food is no greater than that of eating food purchased in the retail consumer market. I note that individuals allergic to gluten and peanuts should avoid these products

Medical Liability: I understand that no financial compensation will be paid to me in connection with any physical injury or illness in the unlikely event of physical injury or illness as a direct or indirect result of my participation in this sensory evaluation project.

Confidentiality: Participants are not required to reveal any confidential information. All responses to questions will be treated in a confidential manner. Responses to sensory questions via the evaluation form and questionnaire are tracked using numbers only. These numbers are not in any way related to the participant's name.

I HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE SENSORY PROJECT AND I AM PREPARED TO PARTICIPATE IN THIS PROJECT.

Participant's Signature: _____

Date: _____

Participant's Name please print clearly: _____

Sensory Panel Leader's Signature: _____

PLEASE ANSWER ALL QUESTIONS

RESEARCHER: MOLLY THEMBI MALAZA

**Research done for a Masters Degree in Foods in the Department of
Consumer Sciences with the University of Pretoria**



Addendum I

QUESTIONNAIRE

| | | | |
|------------|--|--|--|
| Respondent | | | |
|------------|--|--|--|

Please answer all the questions by drawing a circle around an appropriate number in a shaded box or by writing your answer in the shaded space provided.

SECTION A: BACKGROUND INFORMATION

- 1 Are you a tourist who is presently visiting South Africa?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

- 2 To which ethnic group do you belong?

| | |
|-----------------|---|
| Tsonga | 1 |
| Venda | 2 |
| Asian | 3 |
| White | 4 |
| Nguni (specify) | 5 |
| Sotho (specify) | 6 |
| Other (specify) | 7 |

- 3 What is your gender?

| | |
|--------|---|
| Male | 1 |
| Female | 2 |

- 4 What is your age completed in years?

| | |
|--|-------|
| | years |
|--|-------|

- 5 Which country do you live in?

| |
|--|
| |
|--|

- 6 What is your main reason for visiting the Cultural Village?

| |
|--|
| |
|--|

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| | | |
|--|--|--|
| | | |
|--|--|--|

 1-3



- 7 Where have you eaten any authentic (traditional) South African legume and cereal dishes before today?

| | |
|---------------------------------------|---|
| Nowhere, I have never eaten such food | 1 |
| At home | 2 |
| In a restaurant | 3 |
| At a Cultural Village | 4 |
| Outside Southern Africa | 5 |

- 8 Name any authentic (traditional) South African legume and cereal dishes you have eaten before today.

- 9 How often do you eat dishes containing legumes?

| | |
|---------------------|---|
| Daily | 1 |
| 3 to 4 times a week | 2 |
| Once a week | 3 |
| Once a month | 4 |
| Seldom | 5 |
| Never | 6 |

- 10 Would you like to have authentic (traditional) South African dishes listed on the menu in a Cultural Village?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

- 11 Please explain your answer to **Question 10** above.



SECTION B: HEDONIC SCORE FOR PORTION XIENDLA HI VOMU

- 12 The food you have received is an authentic Tsonga-Shangaan dish called ***Xienla hi vomu*** – prepared from a mixture of legumes, maize and ground up peanuts.

Please indicate how much you like or dislike the **appearance, texture, taste, flavour** and **overall acceptability** of the food. Please use the following 5-point scale to perform the evaluation on each of the aspects mentioned.

- Scale:
- 1 = ***Dislike it very much***
 - 2 = ***Dislike it***
 - 3 = ***Neither like nor dislike it***
 - 4 = ***Like it***
 - 5 = ***Like it very much***

| Characteristics | DIm | D | N | L | Lvm |
|-----------------------|-----|---|---|---|-----|
| Appearance (color) | 1 | 2 | 3 | 4 | 5 |
| Taste | 1 | 2 | 3 | 4 | 5 |
| Flavour | 1 | 2 | 3 | 4 | 5 |
| Texture | 1 | 2 | 3 | 4 | 5 |
| Overall acceptability | 1 | 2 | 3 | 4 | 5 |

- 13 Please comment on the ratings you chose in **Question 12**.



SECTION C: HEDONIC SCORE FOR PORTION XIGUGU

- 14 The food you have received is an authentic Tsonga-Shangaan dish called **Xigugu** – prepared from a mixture of legumes, maize and ground up peanuts.

Please indicate how much you like or dislike the **appearance, texture, taste, flavour** and **overall acceptability** of the food. Please use the following 5-point scale to perform the evaluation on each of the aspects mentioned.

Scale: 1 = *Dislike it very much*
 2 = *Dislike it*
 3 = *Neither like nor dislike it*
 4 = *Like it*
 5 = *Like it very much*

| Characteristics | D1m | D | N | L | Lvm |
|-----------------------|-----|---|---|---|-----|
| Appearance (color) | 1 | 2 | 3 | 4 | 5 |
| Taste | 1 | 2 | 3 | 4 | 5 |
| Flavour | 1 | 2 | 3 | 4 | 5 |
| Texture | 1 | 2 | 3 | 4 | 5 |
| Overall acceptability | 1 | 2 | 3 | 4 | 5 |

- 15 Please comment on the ratings you chose in **Question 14**.

THANK YOU FOR YOUR TIME!

Addendum K

PHOTOGRAPHS ILLUSTRATING THE FOOD COMPONENT OF THE MEALS AT SHANGANA



PHOTOGRAPH 1: THE PRESENTATION OF DIFFERENT FOODS

| Menu for Lunch and Evening Festival |
|---|
| <i>Sample menu</i> |
| Starters |
| <i>Starters are passed around on large wooden boards decorated with leaves and wild flowers.</i> |
| Fire-grilled strips of venison with coarse salt |
| Crocodile baked in groundnut sauce Mopani worms pan fried in butter (when in season) |
| Roasted corn wheels |
| Main course |
| <i>Served from iron pots, clay bowls and grass baskets, the mains allow guests to taste a wide range of traditional flavours. Guests eat off wooden plates using long, elegantly carved spoons.</i> |
| Chicken stew |
| Honey-glazed sweet potatoes |
| Baked butternut |
| Wild spinach with crushed peanuts or fried cabbage |
| Traditional mieliepap |
| Samp with sugar beans |
| Freshly baked maize bread |
| Salad |
| Dessert |
| <i>Desserts are based on the fruits in season, and served on banana leaves.</i> |
| Skewers of chilled fresh fruit with lemon juice |

PHOTOGRAPH 2: MENU SERVED FOR LUNCH AND EVENING MEAL



SHANGANA

cultural village



PHOTOGRAPH 3: ENTRANCE TO THE SHANGANA CULTURAL VILLAGE



PHOTOGRAPH 4: THE WAITRESS SERVING THE VISITORS WEARING A TRADITIONAL GEAR



PHOTOGRAPH 5: THE CHIEF AND SOME OF THE VISITORS



DAY TOURS



PHOTOGRAPH 6: CHILDREN DANCE DURING THE DAY TOUR



LUNCH TOURS



PHOTOGRAPH 7: DANCERS DURING THE LUNCH TOUR



**EVENING
FESTIVAL**



PHOTOGRAPH 8: DANCERS DURING THE EVENING FESTIVAL



PHOTOGRAPH 9: A WOMAN SHOWING THE TRADITIONAL WAY OF GRINDING MAIZE KERNEL