

SETTING OF THE PROBLEM AND JUSTIFICATION

1.1 INTRODUCTION

“Stomach fillers” such as the starch staple-type foods, which include bread, rice and maize meal, comprise about half of the typical South African consumer’s grocery budget. This stands in contrast to an allocation of only 15 percent to similar expenditure by American and European consumers (Connellan as reported by Watson, 2008:2). The combined impact of 50 percent of South Africans existing on less than ZAR430 (US\$42)/ month (Fedusa as quoted by Carstens, 2008:6) and a 15,8 percent increase in food costs over the last year (Hermann, as quoted by Carstens, 2008:6), implies a severe threat to food security. For the purpose of comparison, an exchange rate for the South African Rand (ZAR) and the United States Dollar (US\$) of ZAR10.217 \approx US\$1, as on 8 December 2008, was applied throughout the text of this thesis.

Currently, various food products that proclaim characteristics and advantages aimed at specific consumers from the different income groups are readily available on the South African market. Low-income consumers are, however, demographically different and have different needs for goods and services (Alwitt & Donley, 1996:68). The challenge is, therefore, to skilfully integrate knowledge of consumer needs, as indicated by preferences for specific attributes during food choice, with the low-income consumers’ perception of reality (Conner & Armitage, 2002:2).

As yet, no clear guidelines have been formulated for the effective and cost efficient implementation of “consumer intelligence” during the early phases of the food product development process (Costa & Jongen, 2006:8-9), notwithstanding any links to the needs of a developing country. Of special importance to this study is an innovative strategy advocating that consumers’ current and future needs be considered in the development of new products, in order to add true value (Urban & Hauser, 1993:48).

Against this background of household food insecurity, the question was investigated whether the practical needs, including improved nutritive quality and affordability as applicable to low-income households, were met in a consumer-acceptable manner by the food products currently available on the South African market.

1.2 SETTING OF THE PROBLEM

Approximately 790 million people in developing countries are described as undernourished, with Sub-Saharan Africa highlighted as the region with the greatest hunger (<1260kJ/ day) (FAO, 2002:1), affecting 180 million people. The worldwide projection is that the total number of people living on less than a dollar a day will decline by 26 percent from 1999 to 2015. However, the situation in Sub-Saharan Africa, including South Africa, is expected to deteriorate, with an increase of 21,5 percent anticipated (Landman, 2003:1; Cronjé, 2004:15). Already poverty has deepened for the approximately 57 percent of people that were living in poverty in South Africa, with Gauteng, as a highly urbanised area with nine million inhabitants, worst affected (Jenkins, 1997:4; Schwabe, 2005:1, 2; Gauteng, 2008:1).

1.2.1 Urbanisation

A trend of increasing urbanisation is detected worldwide (Mitlin, 2005:3). Globally, urbanisation is expected to double the proportion of urban residents to the total population, reaching nearly four billion by 2020 and affecting mainly developing countries (Haddad, Ruel & Garrett, 1999:1; Regmi, 2001:iii; Regmi & Dyck, 2001:23). Owing to increased urbanisation, already more than 187 million people in Africa are living in slums (Vidal 2003:1). Currently, the proportion of South Africans living in towns and cities is approximately 57 percent, an average level of urbanisation for a third world country. However, the expectation is that approximately 80 percent of the population will be urbanised by 2026 (Pretoria News as quoted by Jenkins, 1997:4).

In poor countries, marginal groups consisting of underemployed or unemployed people with very low or irregular incomes often find habitation on the edges of larger cities (Den Hartog, Van Staveren & Brouwer, 1995:27; Hubbard & Onumah, 2001:433) or in inner cities. Rapid urbanisation generates many problems because of huge demands on land, water, housing, transport and employment (Collins, 2001:1). The proportion of the population not producing its own food in Sub-Saharan Africa is rising fast, posing severe challenges to food and nutrition security (Marter & Gordon, 1996:234; Garrett & Ruel, 1999:13; FAO, 2005:1) due to

insufficient energy consumption and a greater prevalence of vitamin deficiencies (Rao as quoted by DeRose, 1998:118-119).

In South Africa, a mass urbanisation growth rate of three to four percent in recent years has led to the formation of extensive instant residential areas. These squatter areas and informal settlements accommodate most of the estimated one million people urbanised every year in geographically vulnerable pockets of high population density and unemployment (Hubbard & Onumah, 2001:431-432; Van Wyk, Britz & Myburgh, 2002:45). This situation contributes to the geographical polarisation of income inequalities (Noble, Smith, Avenell, Smith & Sharland as quoted by Donkin, Dowler, Stevenson & Turner, 2000:31-32), translating into urban poor living in squatter shacks and experiencing some of the worst poverty levels (63 percent) (Higgs, 2007:1).

The National Food Consumption Survey Fortification Baseline South Africa 2005 (executive summary) (NFCS-FB-1) supports the reality of this situation by reporting a national household monthly income of ZAR1 to ZAR1000 (US\$0.1 to US\$98) for 55 percent of the population. The highest percentage of no income (6 percent) as well as an income of ZAR1 to ZAR500 for 35 percent has been indicated for urban informal households (n = 23 urban informal enumerator areas) (NFCS-FB-1, 2008:255). In comparison with agricultural areas, there is a weakening of supportive social ties in the urban setting, leading to an even more vulnerable situation (Den Hartog *et al.*, 1995:27).

Urban residents generally do not grow their own food and all food has to be bought (Den Hartog *et al.*, 1995:25; Regmi & Dyck, 2001:23; Kennedy, 2003:1), leading to an increase in the food demand of urban areas (Den Hartog *et al.*, 1995:23; Sayed, 2002:17). Due to poverty, this increased demand is mainly for starch staple-type foods, but also for other foods such as fruit, vegetables and meat (Den Hartog *et al.*, 1995:25). Accordingly, the planning for adequate food at affordable prices, especially for the food insecure, becomes a high priority on the food security agenda (Donkin *et al.*, 2000:31-32).

Although low-income urban consumers have limited food spending power, the accumulative effect of 40 percent of South African households (i.e., approximately 19 million people) cited as “poor” by the Poverty and Inequality Report (PIR) (PIR, 1998:5; Motloug & Mears, 2002:532) represents a recognised, although often problem-ridden, emerging market (Prahalad, 2004:2; Karnani, 2006:6).

1.2.2 Food expenditure within the duality of the South African market

South Africa has a two-tiered economy, of which one rivals developed countries and the other displays only the most basic infrastructure. A wide range of consumers, characterised by an uneven distribution of wealth and income, is served (Global Agriculture Information Network (GAIN), 2005:3, 4). A wealth measure segmentation tool, based on consumer living standards, was developed by the South African Advertising Research Foundation (SAARF) to profile the consumer market into ten relatively homogeneous groups. The consumers of least status are indicated within the first segment of the universal living standards measure (SU-LSM 1) and those of highest status within the SU-LSM 10 segment (SAARF, 2006).

The duality of the South African consumer market is mirrored by the difference in food consumption patterns of the middle- and high-income consumers (modern economy) and the low-income consumers (marginalised economy) (ACNielsen, 2005:1; Bureau for Food and Agricultural Policy (BFAP), 2007:52). The modern consumer group is comprised of both the emerging (SU-LSM 4 to 6) and the established (SU-LSM 7 to 10) consumer groups. The SU-LSM 4 to 6 group represents 39 percent of the country's households and 37 percent of the consumer spending, while the SU-LSM 7-10 group reflects 26 percent of the households but 41 percent of the spending. From these figures it is clear that 35 percent of the households in South Africa are reported as marginalised consumers (SU-LSM 1 to 3), contributing only 22 percent of the spending (ACNielsen, 2005:1).

The most recent figures report the mean income for marginalised consumers as ZAR756 (US\$74)/ household/ month, for modern emerging consumers as ZAR1976 (US\$193)/ household/ month, and for modern established consumers as ZAR13492 (US\$1321)/ household/ month (BFAP, 2008:53, 56). The implication is that 3,6 percent, 11,1 percent and 85,4 percent of the total household income in South Africa is distributed to the marginalised, emerging and established consumers respectively. Only 0,2 percent of the total household income is distributed to consumers in the SU-LSM 1 category, which comprises 5 percent of the total South African adult population. In real terms, these households receive a mean household income of ZAR360 (US\$35)/ month (BFAP, 2008:56). The two extremes of monthly grocery spending vary on average from ZAR323 (US\$32) for marginalised households to ZAR788 (US\$77) for established households (ACNielsen, 2005:2).

Income is indicated as an essential determinant of nutritional status and food availability in the United States of America (Consumers' Association (CA), 1997:1; Cade, Upmeier, Calvert & Greenwood, 1999:505; Donkin *et al.*, 2000:31). Food-secure households typically spend

more on food in real terms (money value) than do food-insecure households (Donkin *et al.*, 2000:31; Nord, Andrews & Carlson, 2007:24). The lower the income per capita, the higher the share of the average consumer budget allocated to necessities (Alwitt & Donley, 1996:72), and the greater the portion of the budget that is spent on staple-type starch food products such as cereals (Regmi, 2001:iii; ACNielsen, 2005:2).

The procurement of maize for consumption increases with decreasing household income and money spent on food, while the opposite is indicated for the relationship between wheat flour and bread (National Food Consumption Survey Fortification Baseline (NFCS-FB-1), 2008:258). A staple-based diet culminates in an increasingly less diverse diet (Golden, 2000:502; Farm Foundation (FF), 2006:1-2), indicative of a market more vulnerable to food price and income changes (Regmi, 2001:iii).

For the most marginalised consumers (SU-LSM 1), food cash expenditure, as share of total cash expenditure, amounts to 71 percent of their average monthly household income (or 80 percent of income decile 1), resulting in a very limited choice of basic food items (SAARF, 2006; BFAP, 2008:56-57; Kruger, Schönfeldt & Owen, 2008:4). This group allocates approximately 33 percent of the cash available for food to major grain products, including maize meal (22 percent), rice (23 percent), and bread (52 percent) (BFAP, 2007:47-48). Poor households with a household expenditure of less than ZAR800 (US\$78)/ month, comprise about half of the approximately 12 million households in South Africa (Oldewage-Theron, Dicks & Napier, 2006:796; Prahalad & Hart, 2006:2; Higgs, 2007:1; Marais, 2007:3;). This classifies a substantial section of the South African population as belonging to low-income households. On average, these households consist of three to four members (SSA, 2005b), translating into a total household availability of ZAR6.66 (US\$0.65) to ZAR8.89 (US\$0.87)/ person/ day to meet all needs. These amounts are substantially lower than the international poverty line indicator of US\$1/ day (ZAR10.22) (International Development Association (IDA14), 2004a:1; IDA14, 2004b:1).

According to the “South African food consumption studies undertaken amongst different population groups (1983-2002)” maize, samp/ mealie rice, white rice, peanut butter and dry beans were indicated as the five cereal grain and legume food products most often consumed in South Africa by adults (Nel & Steyn, 2002:136-142, 48-49; Polhill & Raven as quoted by International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), 2009:Introduction). The five foods most often consumed included maize, sugar, tea, bread and milk. A summary of the most recent information in this regard indicates that 90 percent of South African households procure maize meal for consumption while 80 percent procure

bread, of which 70 percent indicate brown bread as the product of choice. Unfortunately, updated details regarding the food products most frequently consumed are not yet available, as the full document is currently being completed (NFCS-FB-1, 2008:258).

As consumer spending on food in developing countries, including South Africa (BFAP, 2008:57), comprise as much as 60 to 80 percent of the total budget for many, it is expected that the continuing food price inflation will hit the poor hardest, as the share of food expenditure to total expenditure is much higher for them than for wealthier populations (FAO, 2008:2).

In 2003, one out of two children between the ages of one and nine years consumed less than two thirds of their energy needs, and a great number of children (70 percent) consumed a diet with poor micro- and macro-nutrient density, which did not meet the daily requirements for the age group and gender (South African Demographic and Health Survey (SADHS), 2003:24). Bearing this in mind, the results of the NFCS-FB-1 (2008:259) indicate no improvement in the situation reporting that one in two households (51,6 percent) experience hunger on national level. On the contrary. In spite of the implementation of the mandatory maize meal and wheat flour food fortification programme for nine nutrients including vitamin A, electrolytic iron and zinc oxide, among others (Republic of South Africa (RSA), 2003:3-5), in comparison with earlier national findings, increased compromised status is reported for vitamin A (67 percent of children and 25 percent of women), iron (14 percent of children and 20 percent of women), and zinc (45 percent of children) (NFCS-FB-1, 2008:261, 262, 264, 267). Based on these findings, it can be surmised that malnutrition is widespread and on the increase in South Africa, affecting children as well as adults.

The baseline survey conducted in an urbanised informal settlement reported an unemployment rate of 94 percent for respondents and 80 percent for partners (Oldewage-Theron, Dicks, Napier & Rutengwe, 2005a:22). The majority of households (59,5 percent) received a monthly income less than ZAR500 (US\$49)/ month, of which up to 71 percent was allocated to the purchasing of food, consisting mainly of maize meal (Amuli, 2006:56-57; Oldewage-Theron *et al.*, 2006:800). On average, the cooked maize porridge consumed by this population amounted to approximately 532 grams (g)/ day, representing 66 percent of the total energy intake/ day, and was consumed during two or three meals within a 24-hour period (Oldewage-Theron, Dicks, Napier & Rutengwe, 2005b:20, 22; Duvenage & Schönfeldt, 2007:692).

The market expenditure by these poor and very poor consumers amounts to ZAR129 billion (US\$12.6 billion)/ year, representing 15 percent of household expenditure in South Africa (Pralhad & Hart, 2006:1) – revealing a large and relatively unknown market. The needs of this predominantly black township market are served mainly through often thriving informal retail outlets, including tuck shops (small, food-selling retailers), shebeens (illicit bars or clubs where excisable alcoholic beverages are sold without a licence), taverns (places of business where people gather to drink alcoholic beverages and are likely to be served food), spazas (small home-based convenience stores operating in disadvantaged communities, and retailing small, everyday, basic goods such as bread), and street vendors (roadside hawkers exchanging merchandise for money). The household income of owners is supplemented through these endeavours, which, in addition, eliminate the need for customers to travel a great distance to obtain goods (Bear, Bradnum, Tladi & Pedro, 2005:7; Dictionary, 2009; The Donor Committee for Enterprise Development, 2003:1; Thefreedictionary, 2009).

The spazas, seen as a new form of township convenience retailing, specialise in staple-type foods such as maize meal, rice and cooking oils, and are becoming more important in the local retail market – capturing about 2.8 percent (ZAR 7.4 billion) (US\$0.7 billion) of the South African retail trade (GAIN, 2003:8; GAIN, 2005:4). Local spazas are patronised by surrounding communities to limit expense in travel and time as far as possible. Several major food-retailing companies are competing to establish outlets in or nearby these areas to capture this emerging market.

1.2.3 Low income and food choice

Within each of the broad food product categories, many substitutable products are available for purchase consideration in order to meet spending constraints (Leibtag & Kaufman, 2003:1). Retailers constantly bombard consumers with information on new food products available (Joseph Rowntree Foundation (JRF), 1994:2). In South Africa, one out of two households has both a radio and a television set in working order, with the radio being the most common means of receiving information (NFCS-FB-1, 2008:2550). In this setting, low-income consumers often do not have enough money to buy the foods they need or want on a regular basis (JRF, 1994:1), or are tempted by marketing to buy.

The model presented by Maslow on human motivation portrays human needs in the five hierarchical levels of physiological needs, and needs for safety and security, love and belonging, ego and esteem, and self-actualisation (Painter, 2007:15). Basic physiological and safety needs are indicated as the strongest motivators. Needs are met one level at a time,

and when a need is acceptably satisfied, human beings are motivated to meet the needs of the next highest level (Williams, 1982:83).

Based on this concept, Kinsey developed a consumer food-demand pyramid to describe a consumer choice process according to the hierarchy of consumers' food preferences (Hughes, 2002:10; Painter, 2007:15). At the lowest level, the quest to satisfy physiological needs to maintain life includes a struggle for sufficient kiloJoules, lower-priced foods and foods that are not spoiled (Hughes, 2002:10; Kinsey as quoted by FF, 2006:4). As the low-income consumers face monetary restrictions that reflect in food choice, they do not want price benefits (added value) built into the food products that they purchase (Alwitt & Donley, 1996:81; Hughes, 2002:11). The products purchased by these consumers display a mix of quality attributes reflecting both budget and non-price preferences (Hughes, 2002:3, 5). These parameters reflect in the choice of food products that are affordable, without unnecessary attributes that inflate the price, and meet preferences such as social acceptability.

As real disposable household income grows, the importance of ethical and quality criteria in food purchase decision-making increases (Hughes, 2002:3, 5, 7, 28). An increase in income is accompanied by an effort to satisfy higher order needs through food product choice (Painter, 2007:15). This implies that the choice of food serves more esoteric needs, such as social status and ultimately, at the apex of Maslow's triangle, self-development needs that translate at the highest level into the purchasing of organic foods to portray concern for the environment (Hughes, 2002:10-11). At this level, food quality includes non-price attributes of food products, such as ethical issues, source of origin, animal welfare and environmental friendliness.

Inequality in household income is therefore reflected in the range of food products available/not available for the income "haves" and "have nots" (Hughes, 2002:3). The techniques that low-income consumers use in order to save include the spending of money on basic needs rather than on luxuries, and the changing of shopping behaviours and financial management procedures (Alwitt & Donley, 1996:97). However, financial survival necessitates budget flexibility (Walker, Dobson, Middleton, Beardsworth & Keil, 1995:7), and for many low-income households food represents the only flexible item in the budget (CA, 1997:2; Dowler, 1997:2).

Although household income is carefully allocated to specific budget needs, food expenditure is reduced in case of other demands or contingencies in order to avoid or reduce indebtedness. Possible food-coping strategies that can be applied in cases of disrupted

provisioning include altering of the diet by opting for less preferred or cheaper food, food rationing by skipping meals, going without meals for a whole day, limiting portion sizes or feeding the working members at the expense of the non-working members. If available, food growing wild will be gathered to increase the amount available in the short term. Only when absolutely necessary or when conditions promise to become better in the foreseeable future will food be purchased on credit, or will food or money be borrowed, because this act is liable to cause problems at a later stage (JRF, 1994:1; Walker *et al.*, 1995:7; Maxwell, 1996:295-296; Maxwell, Watkins, Wheeler & Collins, 2003:5; Kruger *et al.*, 2008:4, 10-11). As a last resort, seed stock will be consumed, household members will be sent to beg for food or the household structure will be changed by sending the children to eat or stay with relatives or friends. The latter is implemented to decrease the number of people to be fed in the short term (Kruger *et al.*, 2008:4, 12).

On average, 83 percent of the marginalised consumers in SU-LSM 1 engage in bulk monthly shopping (BFAP, 2008:54). With a more restricted budget, however, food purchasing occurs more frequently, consumers buying only small quantities at a time to ensure that money is left over in the purse to meet unanticipated contingencies. Buying in bulk for cost efficiency is not an option (JRF, 1994:1), as any extra food is also at risk of being consumed too soon by household members. The applicability of these findings within the South African context is not clear. Purchasing frequency for maize meal as staple food was indicated as once a month (41 percent), and fortnightly (33 percent) by respondents of an informal settlement. The packaging size most purchased was 12.5kg (65 percent), and mostly from a local spaza shop (58 percent) (Amuli, 2006:60, 63).

On a severely restricted budget, shopping becomes a constrained chore without any fun (Walker *et al.*, 1995:7), allowing limited choice of shopping outlets and food items (JRF, 1994:3). With less money available, each of the food choices for purchasing is important, as no money is available for replacements or alternatives (Marumo, 2006:38). There is no possibility of experimental choices, as repurchasing cannot take place if the first option does not satisfy. The cost, time, inconvenience and unreliability of public transport further exacerbate the problems that low-income consumers face in having access to shops that offer the lowest prices (CA, 1997:12; Hersey, Anliker, Miller, Mullis, Daugherty, Das, Bray, Dennee, Sigman-Grant & Thomas, 2003:S16). Shops in the low-income communities often offer limited variety, with prices as much as 60 percent higher (CA, 1997:4). Because of the escalating constraints experienced by consumers at the lowest levels of income, it is difficult for them to afford a healthy diet within the normal range of food choice.

In South Africa, approximately 43 percent of the population suffers from food poverty (Rose & Charlton, 2002:383), portraying a reality where the amount of money available is not enough to purchase a basic nutritionally balanced diet (Messer, 1998:182). Most South Africans, adults and children, consume a monotonous starch staple-based diet containing a very limited variety of fruits and vegetables (NFCS, 1999:24). Urbanisation manifests in a stark reduction in food intake owing to decreased disposable income and limited opportunities for primary food production (World Health Organization (WHO), 2003:24), aggravating the already compromised nutrient intake. It follows, therefore, that the lower social classes, especially, experience a corresponding burden of ill health and disability (CA, 1997:2-3).

All family members experience the pressures of low incomes, but none as severely as the woman of the house, who usually carries the burden of day-to-day budgeting, including balancing the household's likes and dislikes against a limited budget (Walker *et al.*, 1995:7).

If a monthly income is received, purchasing by these households often takes place at the beginning of the month, with cash (or food, or both) running out towards the end of the month (Fisher, 1999:3; Kruger *et al.*, 2008:12). In an informal settlement where most of the households depend on casual work for household income, it was found that, within one week after receiving money, 42 percent of the households run out of money for purchasing more staple foods (Amuli, 2006:57).

The poor are cautious shoppers (Alwitt & Donley, 1996:60) and food buying habits are changed in an attempt to economise. In order to survive, supplies are rationed, a careful choice has to be made of where to shop, no temptation can be succumbed to, and shopping has to be done alone in order to restrict spending. If needed, the taste, cultural acceptability and health aspects of food are overridden by the cost of the food. "It comes as no surprise that they often ceased to derive pleasure from eating" (JRF, 1994:1, 3; CA, 1997:2).

1.3 JUSTIFICATION OF THE STUDY

Research focusing on the low purchasing power and specific living conditions of the majority of the South African population, and especially on the needs and characteristics of the low-income urbanised consumer market, is limited (Van Wyk *et al.*, 2002:43-44). Even though this market segment is expanding rapidly, limited information is available to describe the product characteristics important in meeting the needs of these consumers during purchasing choice.

In general, the success rate of (food) products that are well defined prior to the development phase is much higher. By better meeting the needs of specific target consumers, a (food) product that is perceived to be of higher relative quality can be delivered (Cooper, 1990:27).

Through the development of a food product concept formulation framework for low-income consumers, based on an understanding of the product characteristics perceived to be desirable to most of the target population, a set of new food product attributes can be identified and reported according to priority value. These design parameters can then be verified through test market evaluation of an established product and description of the derived concepts by different groups of low-income informal settlement dwellers with different levels of household income.

This process and model could guide food product developers in effective, proactive design choices in a time-efficient manner. A clear focus on the needs and preferences of the intended users would be maintained in a more attainable and sustainable manner (Rosenau, 2000:25; Moskowitz, Porretta & Silcher, 2005:392). Consequently, food product costs can be more effectively controlled, ease of product use can be improved and favourable word of mouth recommendations can be generated as a result of consumer satisfaction and acceptance (Rosenau, 2000:25).

In further application of this model, it would be possible to describe the food product concept prototype/s according to the levels of the set attributes, and consumer needs and preferences for product characteristics could be patterned for better understanding of consumer choice of specific food product attributes. It would therefore be possible to test commercial food products for consumer acceptance within this model. Food industries would be able to direct food product development with less risk of bias and with better focus on compatibility with consumer needs and preferences, improving product marketability through consumer satisfaction.

1.4 STRUCTURE OF THESIS

This thesis is presented in seven chapters. Two of these chapters (4 and 5) are reported in article format according to the guidelines prescribed by the respective journals. Based on this approach, each of the chapters in this document is presented as a unit, containing tables and graphs numbered for the specific chapter and an applicable reference list. This editorial format facilitates cross-referencing between chapters.

The study is presented in the following sequence of chapters:

- CHAPTER 1 Setting of the problem and justification.
- CHAPTER 2 Literature context.
- CHAPTER 3 Research design and methodology.
- CHAPTER 4 Attributes of importance in staple-type food product development for low-income urbanised consumers in South Africa (Article 1).
- CHAPTER 5 Food product attributes guiding purchasing choice of maize meal by low-income South African consumers: a quantitative approach (Article 2).
- CHAPTER 6 Food product attributes guiding purchasing choice of maize meal by low-income South African consumers: a qualitative approach.
- CHAPTER 7 Integration and application

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2.1 INTRODUCTION

Food choice and needs are specific to the realities of a target population. To support the consumer-based approach in this study, consumer behaviour as related to food choice, food quality trends and perceptions, food product attributes of importance, and low-income, will be reviewed. Lastly, the initial stages of the food product development process and food concept formulation will be addressed.

2.2 CONSUMER FOOD CHOICE

Food choice is a complex issue and varies according to life stage and the importance attached to a particular attribute by the specific consumer/ population group. The influence of many factors and food-related behaviours (Kim & Hunter, 1993:131; Kraus, 1995:72; Bogue, Delahunty, Henry & Murray, 1999:301) reflects in aspects such as the sensory properties and health/ nutritional value of food, as well as food price/ value for money (Conner & Armitage, 2002:8, 27-28). In general, the major determinants of food choice include:

- Biological determinants such as hunger and satiety, palatability and sensory aspects
- Economic determinants such as cost, income and availability
- Physical determinants such as access, education and knowledge, skills (e.g., cooking) and time
- Social determinants such as social class, culture, social context (including family, peers), social setting and meal patterns
- Psychological determinants such as mood, stress and guilt
- Attitudes, beliefs and knowledge about food (EUFIC, 2005:1-3).

In Figure 1, the interrelatedness of the factors determining consumers' food choice is reported. Consumer behaviour is becoming increasingly less predictable and consumer decisions to purchase products are largely based on personal preferences (Imram, 1999:224-225).

Decision-making during food choice is perceived as complex and highly diverse (Torjusen, Lieblein, Wandel & Francis, 2001:208). In any purchasing situation, a unique combination of environment information is integrated with personal needs, motives, perceptions and attitudes. Learning from past experiences and individual factors which guide the (food) choice outcome of the individual consumers are also imbedded (Assael, 1992:95). Decision-making during the food choice process is not guided exclusively by conscious reflection: it can also be automatic, habitual and subconscious (Furst, Connors, Bisogni, Sobal & Falk, 1996:247).

Consumers appraise food products for product qualities, features and functionality prior to purchase, at the point of purchase and during preparation and consumption. Product features, therefore, need to link to product experience and behaviour by acknowledging consumer emotions. The holistic approach in food product development, as reported by the "consumer behaviour ladder", links consumer concerns, expectations and appraisals to emotions. Product trials as well as product repurchasing actions are driven by emotions and rational thoughts as influenced by sensory cues (Lundahl, 2006:29). The setting of each (food) purchase is thus of importance.

The concerns of consumers are represented by the basic needs they strive to fulfil by achievement of basic goals, maintenance of standards and adherence to attitudes and beliefs held. The expectations of consumers refer to the experiences they believe will result from product use (functional, hedonic or self-social identity fulfilment) (Lundahl, 2006:28-29). Expectations and concerns influence the appraisal of products by consumers. Rational thought and memories – such as satisfaction (functional benefit), and enjoyment (hedonic expectation and experience) come into play (Lundahl, 2006:29). Consumers, therefore, selectively use food product information during the purchasing evaluation process to meet needs in relation to specific beliefs and predispositions. Accordingly, the acceptance or rejection of a food product will be determined by the compatibility of food product attributes with consumer needs (Earle, Earle & Anderson, 2001:201; Sheth & Mittal, 2004:3, 4).

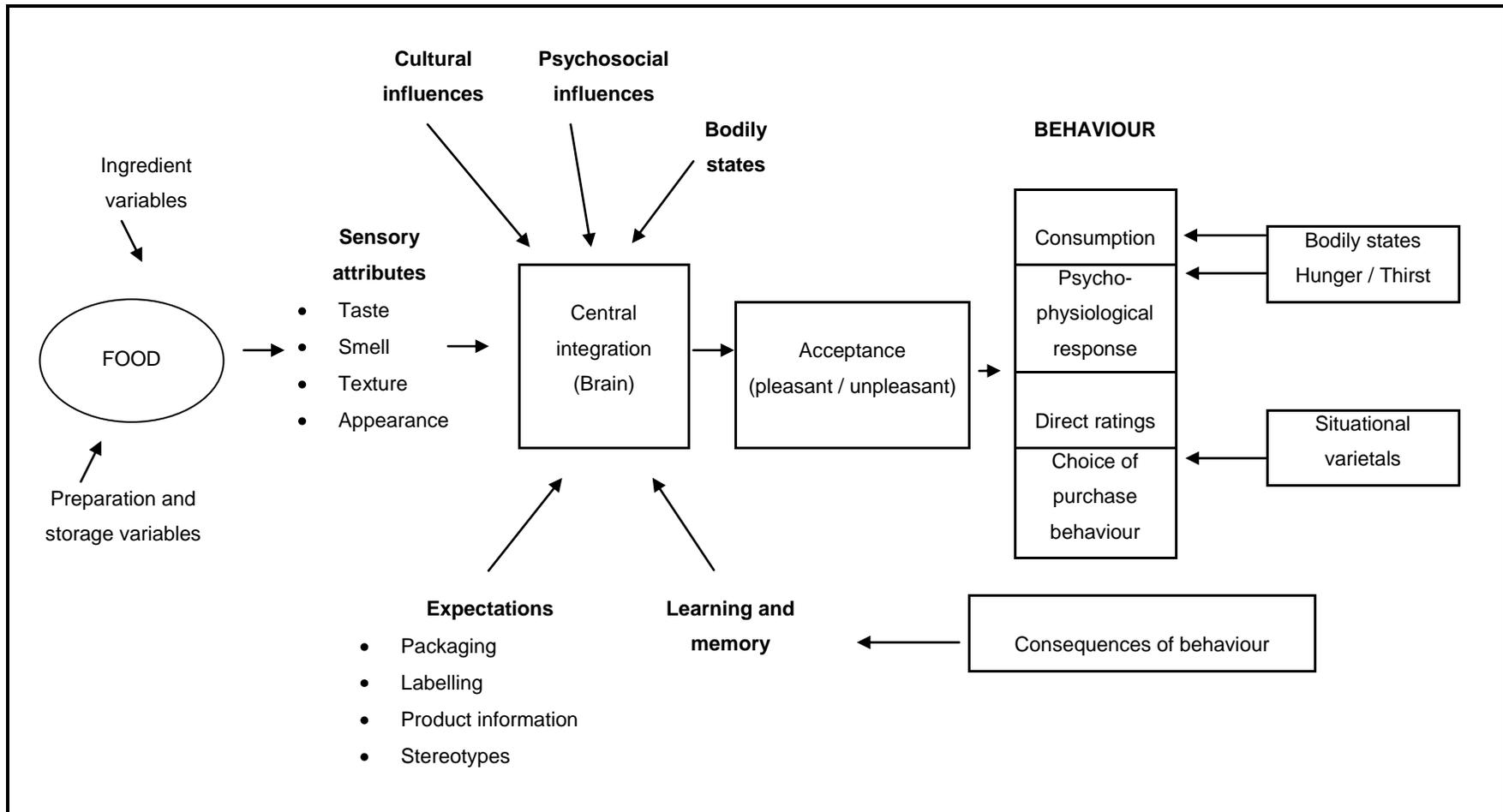


Figure 1: Factors determining consumers' food choice (Imram, 1999:227 as modified from Cardello)

The position that such a value assumes in the mind of a consumer is indicative of consumer acceptance, and determines the competitive position of the specific quality attributes within the market (Young, 1999:81; Bogue *et al.*, 1999:302). Producers become “creators of value” (Veblen, 1988:129; Blaich & Blaich, 1993:ix, 24-25; Brunsø, Fjord & Grunert, 2002:6-7).

From this information an understanding is derived of what consumers perceive to be important, and decisions can then be made about the way these attributes can be created within a product/range (Young, 1999:81). Successful (food) products accordingly communicate significant value in the key categories that are of importance to the target consumer and setting (Cagan & Vogel, 2002:5-7, 14; Sheth & Mittal, 2004:19). In application, the core principle in product development indicates that a product should reflect the consumers’ desires and tastes – making it essential to understand and learn from the consumer in order to develop insight into the factors that consumers consider when forming their decisions to buy a product.

2.3 TRENDS IN QUALITY PERCEPTION

Developed countries are typified by higher incomes and food spending, including more diversified and quality products in the diet. Greater discretion is applied in spending, especially on preferred foods (Farm Foundation (FF), 2006:2, 3). This shift in purchasing decision includes perceptions on quality, variety, convenience, specific characteristics of the product, or the manner in which the food was produced and processed, awarding increasing importance to ethical and quality criteria (Hughes, 2002:7). Additional preferences beyond the basic nutritional needs can therefore be considered, such as improved taste, variety, convenience and effect on health and lifestyle. Individual food consumption decisions and choices portray eating as a moral act (Andrews as quoted by Ikerd, 2005:1). The higher the income of the consumer, the smaller the impact of price and income on food demand, and the more important the influence of preferences (Von Alvensleben, 1997:209).

The quality perception of consumers in Western industrialised countries is reported by the four dimensions of taste and appearance, health, convenience, and process (for example, environmental friendliness) (Brunso *et al.*, 2002:12). These findings are supported by the South African Bureau for Food and Agricultural Policy (BFAP) (BFAP, 2007:50-51) in describing “redefining quality” as the modern-day trend by which consumers seek high quality eating

experiences. The six main global consumer food trends were listed as follows: an increasing demand from consumers for convenient, healthy, attractive food, food variety, ethical/environmental eating, and value-for-money. All of these seem to confirm the expectations that consumer demand will be steered by the combination of convenience, health and pleasure, as the three major food choice trends that shape the food industry (Gray, Armstrong & Farley, 2003:214).

Urbanisation has played a significant role in changing global food consumption patterns. In developing countries, urbanisation is associated with increased per capita income, culminating in higher disposable income and changed food consumption patterns characterised by increased demand for meat, horticultural, and processed products (Regmi, 2001:iii). The changed lifestyles and consumption patterns do not necessarily indicate improved nutritional patterns (Regmi & Dyck, 2001:24-25), although the micronutrient intake generally increases, as does the incidence of overweight and obesity (Donnelley, 2007:9). The increased demand for consumers' time, in combination with higher food availability due to higher purchasing power, leads to a demand for food products with increased characteristics. Food product quality and convenience, product safety and health are prioritised. Food safety, taste, freshness, and overall quality are also important attributes guiding consumer preference for organic products (Regmi, 2001:iii-iv).

Within the South African context, the food purchasing and consumption behaviour of the modern income consumers (both emerging and established consumers) are indicative of increasingly complex food requirements, habitually portraying global food consumption trends. The positioning of the quality strategies of most supermarket chains was reported as being in line with these consumer trends, with focus on quality and price (BFAP, 2007:54).

The consumer trends reported for the emerging and established consumer groups are often of no or low relevance to the low-income marginalised consumers; an example is convenience, which was indicated as top priority for the former but of low priority for the latter (BFAP, 2007:52). The main concern of low-income consumers in South Africa is the provisioning of basic food security through the availability of an adequate quantity (satiety value) of affordable food to satisfy nutritional requirements (BFAP, 2007:52). However, it is not known whether this statement is true for the low-income consumers in urbanised informal settlements.

2.4 CONSUMER PERCEPTION OF FOOD QUALITY

Consumers are “rational utility maximisers” who will choose a product that provides the utmost utility to them when faced with a set of available alternatives. A food product is perceived as embodying accumulated benefits, with tangible and intangible attributes relating to the consumers’ needs, wants and behaviour (Ness & Gerhardy, 1994:29; Earle *et al.*, 2001:3).

A food product consists of a combination of attributes (Green & Srinivasan, 1987:119), comprising the characteristics that consumers infer from a product. Consumer quality perception is based on specific characteristics in a product and available alternatives (Oude Ophuis & Van Trijp, 1995:179). This influences the utility the specific consumer experience during purchase choice (Kaul & Rao, 1995:293-294).

Quality expectations are based on product quality cues and quality attributes. Product quality cues consist of concrete product characteristics that the consumer infers from the product; these could be of an intrinsic nature (physical characteristics, e.g., the appearance of fresh fruit) or extrinsic nature (all other characteristics, such as price or brand) (Oude Ophuis & Van Trijp, 1995:178; Van Kleef, Van Trijp & Luning, 2005:186; Brunsø *et al.*, 2002:7;). Quality cues represent concrete product characteristics, which can be inferred without prior consumption or usage by consumers (Oude Ophuis & Van Trijp, 1995:179).

Quality attributes refer to benefits gained through product experience acquired from actual consumption and usage of the product. Quality attributes are indicated either as experience attributes, such as the taste of a product or its stability at room temperature, or as credence attributes, such as desirable product benefits like nutritional value or health (Oude Ophuis & Van Trijp, 1995:178, 180).

After purchasing, consumers experience the quality of food within a variety of settings, as influenced by many individual factors, including culture. The relationship between quality expectations and the quality experienced is believed to determine consumer satisfaction. This determines the probability of repeated purchasing (Young, 1999:79; Henard & Szymanski, 2001:374; Oliver as quoted by Grunert, 2002:276). Quality attribute perceptions therefore constitute the basis for overall quality judgements (Steenkamp as quoted by Oude Ophuis & Van Trijp, 1995:178-179).

The importance consumers assign to different food product attributes differs (Malaviya & Sivakumar, 1998:97). The “voice of the consumer” is indicated by a hierarchical set of “customer needs” where each need, or set of needs, is depicted by a priority value, which indicates its importance to the specific consumer (Hart, 2004:224). These parameters then become key criteria in providing a quality product (Hart, 2004:224). The consumer choice process is accordingly described in terms of (food) product attributes (Kaul & Rao, 1995:296). It follows that the key attributes of importance to a target population should be linked to desirable benefits and pleasant consequences of consuming the product (Van Kleef *et al.*, 2005:186).

Perceived (food) quality can therefore be defined as “the customer’s perception of the overall quality or superiority of a product or service with respect to its intended purpose, relative to alternatives” (Aaker as quoted by Oude Ophuis & Van Trijp, 1995:178). Although delivering of quality is only partly under the control of the producer, product characteristics usually have an influence on both expected and experienced quality and can be influenced by the producer (Grunert, 2002:267-277). Thus, quality assists in satisfying purchase values (Brunsø *et al.*, 2002:6, 9).

However, consumers tend to rely on simple indicators (such as brand name, retailer reputation) rather than closely specified attributes of food product quality (Caswell, 2000:5).

Therefore, to engage consumers fully in purchase, the specific attributes provided by foods produced for the low-income consumers in South Africa must add to the value of the product and offer a point of difference from the competition. This can be achieved by a thorough understanding of what the most needed/ preferred food product attributes (e.g., price, convenience, quality) mean to the target consumer (Groves, 2003:17). Knowledge in this regard will provide a key to success.

2.5 FOOD PRODUCT ATTRIBUTES OF IMPORTANCE

Sensory perceptions, monetary considerations, convenience, health and nutrition, managing relationships (considering the preferences and needs of others) and quality are important considerations in value negotiations when making food choices (Furst *et al.*, 1996:251, 257-260). These findings were indicated for a study population including men and women of different

ages, household situations and varying eating patterns (Furst *et al.*, 1996:249) as is the case in the general food environment and not specifically for low-income households.

A study by Shepherd (1999:810) indicated the major determinant of food choice as the flavour or taste of the food, followed by the occasional importance of physiological factors such as tolerance and satiety. Beliefs about the healthiness of the food were indicated as of much less importance and factors such as price and convenience were indicated as having little or no effect on consumption.

In a meta-search of previous literature, price (affordability) was indicated as an important but not major attribute that influences consumer food choice (Iop, 2006:897). When price was investigated as an independent variable in perceived quality, a significant price effect was observed because of the association between price and quality by the consumer (Walley, Parsons & Bland, 1999:156,158).

Taste is often indicated as the most important consumer food demand, followed by nutrition and then price as determinants in food choice (Cheese Reporter as quoted by Bogue *et al.*, 1999:313). Further consumer concerns are related to the production method, nutritional information and origin of food products (Iop, 2006:898). Ethical, environmental, social and health concerns (Torjusen *et al.*, 2001:207), as well as factors relating to nutritious, healthy and convenient foods, were also cited as important (Sloan, 2003:26-31).

The Institute of European Food Studies reported quality as the main criterion for food selection in all member states (n=14 500). Taste and price were alternatively indicated as either the second or the third most important criteria. The importance allocated to health differed, but approximately a third of the respondent countries perceived health as one of the three most important criteria. Family constraints and preferences followed closely in fifth place for most countries. Other criteria such as presentation/ packaging, ethnic background, availability of food and use of additives, were perceived as being of less importance (EUFIC, 1998:1).

The characteristics of low cost products include food shelf life under natural climatic conditions, inexpensive packaging, provision of essential nutritional elements, and complementation to the traditional diet (Bachman, 1986:247). There is, however, no basis for assuming that this general trend will be applicable to low-income households in urbanised informal settlements.

Consumer purchasing decisions are based on the following product attributes:

- Cost: is it affordable?
- Availability: is it available where and when it is wanted?
- Packaging: does it look attractive?
- Performance: does it directly satisfy the consumer's most important needs?
- Ease of use: is it easy to use and operate?
- Assurances: does it have a reputation for durability, reliability and support?
- Life cycle cost: will it cost too much to maintain?
- Social standards: what do others think of it? (Magrab, 1997:89, 91).

2.6 FOOD CHOICE AND LOW-INCOME

Low-income individuals and families usually have a fixed fortnightly budget that must meet all expenses. Consumer food habits and knowledge of food product preparation have been indicated as barriers to food product consumption, reflecting the influence of the convenience culture on societal changes. Consumers with lower income levels, from necessity, are the least likely to eat out (Fisher, 1999:2).

Food-buying habits are also changed in an attempt to economise. In this situation, food choice reflects a complex relationship between economic circumstances (poor levels of disposable income), limited access to a wide variety of reasonably priced foods and cultural norms and expectations (Anderson & Morris, 2002:12-15). The cost of food takes precedence over issues of taste, cultural acceptability and healthy eating (Joseph Rowntree Foundation (JRF), 1994:2).

Consumers in townships often demonstrate contradictory demands and characteristics. Leading brand names are often the main items supplied by spazas and other informal shops, owing to strong brand loyalty demonstrated by these customers. Less expensive items and/ or single service package sizes that are ambient-stable and do not require refrigeration, have been indicated as essential attributes for successful food products in this market (Global Agriculture Information Network (GAIN), 2005:4).

These consumers generally face higher purchase prices and therefore purchase more discounted products, favour generic low-quality products over brand, pursue volume discounts, or settle for less expensive products (Leibtag & Kaufman, 2003:1).

If the struggle is to provide enough food for the family, nutrition is an especially challenging issue (JRF, 1994:2). This situation is aggravated by a scarcity of shops in the low-income areas, sometimes resulting in “food deserts”, limited selection or poor food quality. The unhealthiest food choices are often the cheapest and most heavily marketed (JRF, 1994:2). With the heavy impact of HIV/AIDS on these poor households, healthy food products are needed, but out of reach, unless such products can be developed as viable substitutes for basic staples (GAIN, 2005:5). Both Lang and Reiner (2002:4) and Hughes (2002:15) plead for an integrated approach to health as the key to the future of food, mentioning nutrition, food safety and sustainable food supply as elements of such an approach.

2.7 FOOD PRODUCT DEVELOPMENT

Innovation in addressing unconscious consumer needs is a major component in the process of successful (food) product development (Grunert, Harmsen & Göransson, 1997:69). It follows that the delivery of unique benefits to targeted consumers supports the building of a strong consumer relationship (Earle *et al.*, 2001:17).

The greatest differences between successful and unsuccessful products are found within the first few steps of the product development process (Cooper, 1990:29). The process of food product development usually consists of four main steps (see Figure 2 of this chapter):

- (1) Product strategy development to identify the project and product area;
- (2) Product design and process development to create the product and process;
- (3) Product commercialisation to design marketing, production and quality assurance; and
- (4) Product launch and evaluation to organise production, launch and post launch (Earle & Earle, 1999:7; Earle *et al.*, 2001:99; Fuller, 2005:28; Van Kleef *et al.*, 2005:182).

Further subdivisions are added as needed (Saguy & Moskowitz, 1999:70). For the purpose of this study, specific processes in steps one and two were of importance.

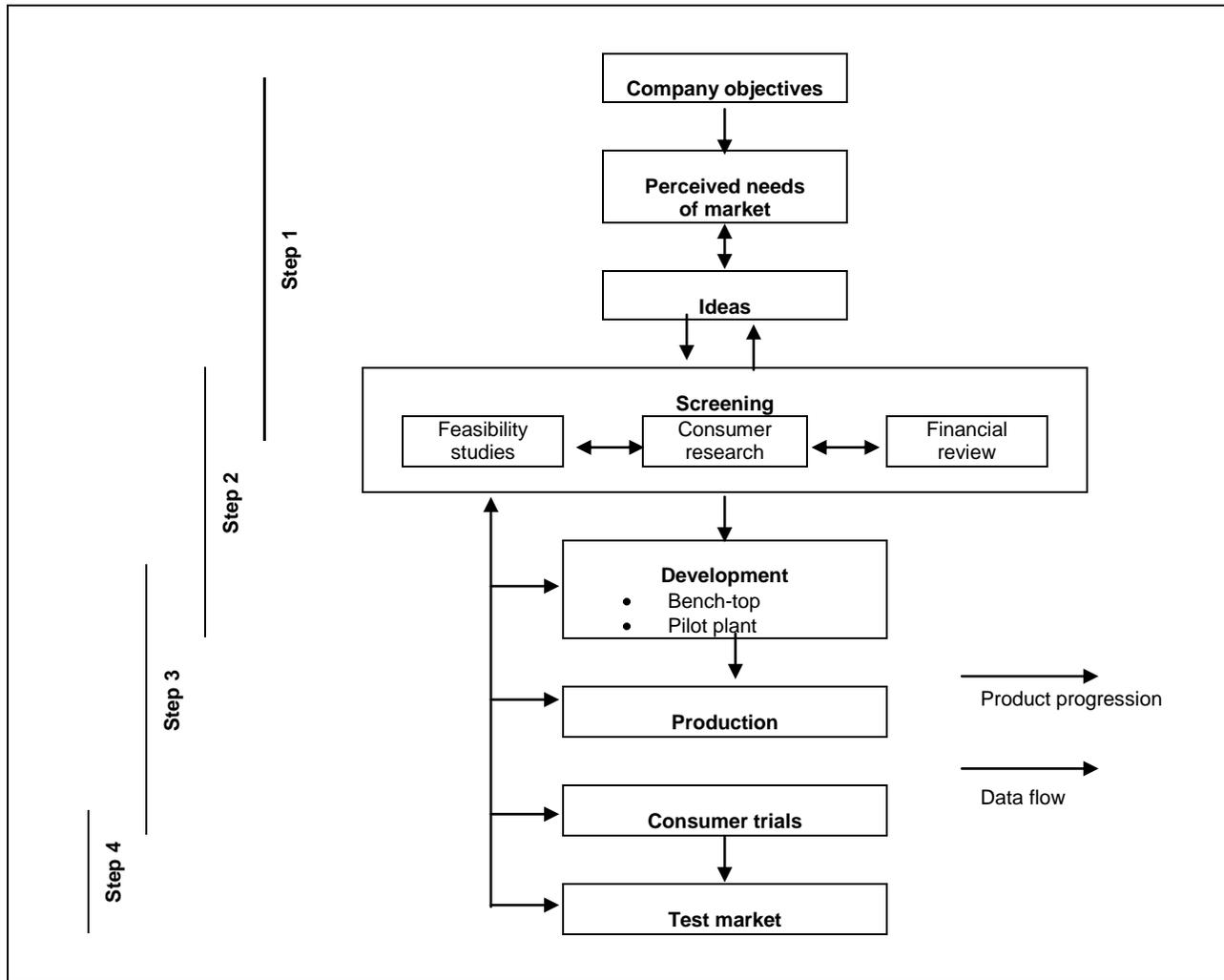


Figure 2: Steps in new food product development (Fuller, 2005:28)

Step 1 addresses product strategy development and incorporates knowledgeable, creative and systematic idea generation and screening in a controlled manner. Being of strategic value, product ideas are developed systematically to satisfy the aim of a project, following a constant cycling of idea generation and screening throughout the project (Earle & Earle, 1999:42). For the purpose of this study product idea generation and screening to guide food product concept identification were included (Earle & Earle, 1999:9).

The identification of a food product idea is initiated from a qualitative approach and followed through into a more specific quantitative evaluation or sifting procedure (Phase 1 of this study) (Earle & Earle, 1999:41-42).

The process of project strategy formulation derived the product concept and product design specifications as outcomes. Based on information derived from predicted category users regarding food product attributes and benefits of importance to them when purchasing food, product concept criteria were formulated to stipulate the uniqueness of the product for satisfying the needs of the predicted category users (Blaich & Blaich, 1993:ix, 24-25; Bell & Rolls, 2001:36; Earle *et al.*, 2001:101-102; Van Kleef *et al.*, 2005:181). Other specific requirements, such as the enhancement of health, environmental effects, regulatory compliance and trade barriers, also come into play at this stage (Graf & Saguy, 1999:60-62; Earle *et al.*, 2001:101-2). Imbedded aspects such as food safety and quality, affordability and sufficiency of intake at individual level, the provision of essential nutritional elements and the complementation of the traditional diet (if applicable), were also kept in mind (Bachman, 1986:247; Uauy-Dagach & Hertrampf, 2001:637; Webb & Rogers, 2003:5).

Step 2 addresses the product design and process development procedures, including product design for prototype formulation (Earle & Earle, 1999:6). Product design is perceived as the central, creative part of product development, integrating the different influencing factors in an approach that employs creativity, research and testing to deliver prototype product formulation (Earle *et al.*, 2001:22). The attributes of low-cost products further include manufacturing with relatively simple equipment, good shelf life under natural climatic conditions and inexpensive packaging (Bachman, 1987:247).

Controllable factors in product success include closeness to the consumer during product development, with product design focused on consumer needs, wants and values. The food product in development should be superior to the products of competitors, with different, unique benefits (MacFie & Thomson, 1994:3-4; Grunert *et al.*, 1997:31; Earle *et al.*, 2001:19), in order to provide a competitive edge (Blaich & Blaich, 1993:23-24). Forethought and planning can also control food product costs, improve ease of product use and generate favourable word-of-mouth recommendations, leading to increased product use (Fuller, 1994:42; Rosenau 2000:4, 11).

2.8 FOOD PRODUCT CONCEPT FORMULATION

A product concept describes the tactile combinations of the primary product attributes (either intrinsic or extrinsic) and consumer benefits of products (e.g., affordability, stability at room temperature and ease of preparation). These food product attributes are measurable, manipulable and can be operationally controlled by the developer. The product concept represents the idea of a product or service, contributes to an understanding of what the consumer needs, and describes the advantages of the product to the consumer. It is designed to test whether the idea is acceptable and provides a reason to buy, combined with a broad understanding of the technology required (Moskowitz, Reisner, Krieger & Oksendal, 2004:4, 9; Moskowitz, Porretta & Silcher, 2005:3-7; Van Kleef *et al.*, 2005:186). For the purpose of this study, the respective food product attributes are reported as concepts, imbedded in a framework describing the combination of the primary product attributes, as guided by consumer benefits perceived as needed by the target population.

A food product concept formulation framework that considers product attributes related to the consumer needs of the specific target population, as linked to consumer preferences and consumption patterns, will contribute significantly to the development of suitable food products. If this information is incorporated during the early phases of food product design and development, the food industry could be more assured of building/ maintaining competitive advantage in the marketplace (Costa & Jongen, 2006:4).

The maintenance and enhancement of profit levels necessitates the repositioning or redesigning of existing products and the introduction of new products (Kaul & Rao, 1995:293-294) while focussing on the ultimate consumer (Earle *et al.*, 2001:19). Consumer perception of a (food) product, especially available alternatives of various attributes, is of primary concern to developers during the redesign of existing products (evolutionary products) or the design of new products (revolutionary products) (Kaul & Rao, 1995:293-294). The “voice of the consumer” reporting the specific needs and preferences of the target population needs to be heard effectively (Griffin & Hauser, 2004:227; Hart, 2004:221). The link between preferred food product attributes, as based on decision-making, and consumer needs preceding consumer action, poses a challenge to, and an opportunity for, food producers. This integrated process linking perceived quality judgements to physical product characteristics, provides a point of departure

for food product design and development (Oude Ophuis & Van Trijp, 1995:180; Sheth & Mittal, 2004:4; Verdu, Megias, Vázquez-Araujo, Pèrez-López & Carbonell-Barrachina, 2007:2).

The market at the bottom of the SA pyramid (the very poor/ marginalised consumers) (SU-LSM levels 1 to 3) is extensive (27,6 percent) (South African Advertising Foundation (SAARF), 2006; BFAB, 2008:54; Marais, 2007:3), and stimulates a growing level of competitiveness between food-producing industries.

Players in the industry should take note that the established and emerging, as well as the marginalised consumer, despite their extreme differences, are looking for the best possible product, the most enjoyable shopping experience and increased value for money within their contrasting situations (ACNielsen, 2005:2). This situation links to diverse shopping habits and requirements, creating a challenge to provide products and store offerings that best meet the needs of all the consumers in South Africa, but specifically the low-income consumers (ACNielsen, 2005:2).

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