THESES FOR DOCTORAL DISSERTATION (PhD)

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AN ANALYSIS OF FACTORS IMPACTING FOOD CONSUMPTION BEHAVIOUR IN ANGOLA

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1. PREVIOUS STUDIES AND OBJECTIVES

The state of the food industry is always an important indicator of the success of a national economy to fulfil one of its main obligations; namely, feeding its population in a reliable, consistent and safe manner at a high standard, also providing universal access to an adequate level of sustenance for all. In my previous research projects, I had surveyed the food industry sector of Angola from a historical perspective, as well as its current state and structure as part of globalisation trends. My previous studies include the following projects:

- The exploration of the possibilities and difficulties of rural development; describing the peculiarities of the parallel existence and dual management of traditional and modern agricultural land administration systems.

- The study of the historically established coffee production industry, with a special focus on the possibilities of technological advancement and modernisation.

- A survey of the impact of a negative communication and marketing campaign, in the field of the processing industry.

- Examining the economic structure and the impact of the global economic crises of the last decade on public finances and stability.

- Conducting a questionnaire survey in Angola on the circumstances of food purchase, the possible factors impacting consumer behaviour and decision-making processes. My aim was to explore the attitude of modern consumers of the food sector, the rate of customer satisfaction in terms of purchase and consumption. I was looking for answers to questions on how today's consumers perceive the sector, how satisfied they are when buying and consuming food. In addition to assess the phenomena identified and the direction of change (trends), my aim is to formulate proposals to improve consumer satisfaction, access to products and related services, also awareness, which is the common interest of all market players.

1.1. Relevance of the research topic

The problem of adequate food supply has been a basic issue of all human history. The UN announced its Millennium Development Goals (MDG) in the year 2000, which have proved to be only moderately successful at best in most developing countries. However, up until the year 2015, there had been important improvements in fighting nutrient deficiencies, malnourishment and undernourishment at population levels. Objectives set as a continuation of the programme, Sustainable Development Goals (SDG), drawn up until the year 2030, has the ambitious goal of ending hunger at a global level. This challenge calls for cooperation among all stakeholders in the global agriculture and food industry, at government, corporate as well as civilian level. In addition, it also depends heavily on a number of macroeconomic factors, as well as the state of conflicts, the conditions of the natural environment, and climate change.

In developed countries, customer decisions are largely based on personal preferences and attitudes; there is plenty of information available to make informed choices; supply chains are reliable and uninterrupted in both quality and quantity. In the case of developing countries, however, the situation is strikingly different. Continuous food supply is usually hindered by inadequate domestic production and processing, high volatility index of prices, and exposure to fluctuations in the global market. Quality control systems are underdeveloped; therefore, food safety is impossible to ensure, both in the case of locally produced and imported supplies. The situation is further exacerbated by the population explosion and the ever-expanding demand side, with which supply cannot keep pace. Due to the inadequate level of infrastructure and logistics, there are difficulties in supply chains, which are typically short, coincidental and unregulated. Consumers have to face high risks, and they are forced to continuously reevaluate their decisions in an environment lacking sufficient information.

1.2 Objectives of the research

The objective of my dissertation is to present and prove that the food market conditions in Angola are significantly different from developed economies. My intention is identifying areas for improvement from the point of view of the consumer, creating the preliminary conditions and environment for a consumer-centered approach, and increase costumer satisfaction.

a) Secondary research objectives, based on processing relevant literature

1. Summary of political, economic and social processes underlying the current situation and conditions of the food sector in Angola.

2. An analysis of macroeconomic indicators and their impact.

3. An overview of food consumer behaviour and presentation of the evolution of behavioural models.

4. Summary of factors influencing consumer behaviour of the population of a developing country

b) Primary research objectives, based on a survey of consumer opinion

5. A questionnaire survey to map the food consumption structure of the population of the capital, Luanda.

6. A survey of attitudes to food safety, from the point of view of quality control.

7. A survey of conscious decision-making behaviour (health awareness, environmental awareness, ethnocentricity)

8. An analysis of food consumption versatility, as an important aspect of-quality food consumption.

2. MATERIAL AND METHOD

2.1 Hypotheses

Based on my previous studies and the relevant literature, the following research hypotheses were formulated and addressed within the framework of the current dissertation.

A) Hypothesis supported by secondary research

H.1. The economic and political processes of the past decades have negatively influenced the current state of the food economy and its position in the national economy.

B) Hypotheses supported by primary research results

H.2. The purchasing frequency of the population of Luanda is below that of developed countries.
H.3. Consumption is primarily for functional purposes, with emotional motivation factors taking a back seat.
H.4. Consumers' knowledge of food is poor and they perceive a need for more relevant information. In the current situation, they rely mainly on the opinions of themselves, their family and friends.
H.5. The main determinants of choosing the place of purchase are:
- **H.5.a)** Accessibility
- **H.5.b)** Affordability

H.6. Respondents' opinions on the food safety of the products they are offered to buy:
- **H.6.a)** The majority of respondents consider the food offered for consumption to be safe.
- **H.6.b)** The majority of respondents consider that measures should be taken to improve food safety.

H.7. Certain elements of consumer awareness are present in the sample.
- **H.7.a)** Behavioural manifestation of health awareness is limited;
- **H.7.b)** Behavioural manifestation of environmental awareness is limited;
- **H.7.c)** Behavioural manifestation of ethnocentric awareness is limited.

H.8. Diversity of food consumption is low, with more than 50 percent of respondents not buying varied food.

2.2. Steps of the research project

My research progressed by following the steps outlined below.

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Figure 1
Steps of the research project

Source: own editing

2.3. Methodology and databases

2.3.1. Secondary research

The background research has provided an opportunity to overview my previous research findings, as well as studying in depth the outstanding research results of the topic by experts of the field, and considering the relevance of certain scientific models and their evolution. All these provided a sound basis for the current research project.

I attempted to locate data and studies regarding the food sector in Africa, specifically Angola, which were published in Hungary; however, it soon became apparent that the majority of publications were naturally compiled by analysts of certain international organisations which are active in this field and produce outstanding surveys. Therefore, background data were primarily sourced from the various organisations of the UN, namely, WHO, FAO, World Bank group and UNESCO, and supported by internationally recognised, up-to-date studies of research groups, aid organisations, funds, and data-processing agencies (IFPRI, Knoema, etc).

2.3.2. Primary research

The significance of primary research increases in such cases, when secondary data are limited and hypotheses cannot simply be proved or disproved by analysing existing databases. Therefore, in order to evaluate my hypotheses, survey using paper-based questionnaires was selected. For the design of the questionnaire, I aimed at mapping the factors impacting decision-making and opinion-forming processes as widely as possible. I analysed the food sector in Angola, with a consumer-based approach to supply chains, the situation of food safety, and factors impacting consumption.

2.4. Statistical methods

Data from the questionnaire survey were submitted to analyses by internationally recognised and scientifically proven statistical procedures. Data registration and processing were conducted using IBM SPSS 25.0. Microsoft Office (Word, Excel) 2019 programmes were used for editing figures, charts and tables.

2.4.1. Descriptive statistics

Descriptive statistics are utilised before any further analysis, for a general overview of frequencies and distribution of data. Distribution may be expressed by raw numbers (frequency of occurrences) or percentages. Descriptive statistics and the correction of missing elements were conducted for every item in the questionnaire. The method helped to cluster small groups with similar behaviour by filtering out low number of elements.

Fequency analysis can be performed for multiple response options, where a frequency ranking of the response options is created.
Multiple answers were allowed for certain types of questions, such as items enquiring about the location of purchases and identifying reasons for making a decision on imported food products.

In the case of ordinal variables, numerically coded answers and their averages and distribution were taken into account. Averages were calculated for assessing the significance of motivational factors for making a decision. Priorities were revealed by arranging responses in order of frequency.

2.4.2. Analyses with two variables

These procedures allow for analysing the possible correlation between two variables. Cross tabulation confirms or disproves the relationship between two nominal or ordinal variables. Its statistical procedure, chi square, assesses the statistical significance of the result by comparing expected cases in a cell with actual results.

- Phi and Cramer’s V procedures are applied to establish the strength of the relationship between two nominal variables or an ordinal and a nominal variable. Phi correlation coefficient is used for cross-tabulations of 2x2 cells.
- Gamma coefficient is used to describe the relationship between two ordinal variables.

The statistical procedures mentioned above were utilised most frequently in my research project; primarily in order to explore the relationship between demographic data and certain aspects of food consumption. Furthermore, this method was applied in order to analyse and describe the clusters that emerged in approaches to food safety.

Correlation analysis explores the linear relationship between two quantitative variables, which may be negative or positive, the variables are equivalent Pearson coefficient expresses the strength of correlation with values ranging from $1 \leq p \leq 1$. In practice, it expresses the extent to which the reply to a question can be predicted from the response to another item. Visually represented, replies form a pattern of dots; in case of strong correlation, the dots form a pattern close to a straight line, in cases of weaker correlation, they are more scattered.

Rank correlation is the method of choice in case of a large sample, a few possible ordinal responses, and results that are not normal distribution. Spearman rank correlation measures the strength and direction of relationship between two ranked variables, but does not indicate causation. This method was suitable for analysing certain aspects of correlation between certain variables of motivation.

Analysis of Variance, ANOVA, compares group means across different groups and looks for systematic differences in order to explain variations in distribution and attribute them to another variable. As opposed to cross tabulation, one of the variables is an independent variable (usually nominal data, but may be ordinal as well), and the other variable is dependent (usually ordinal or rank data).
This method was used to determine the relationship between gender and education (independent variables) and the ranking of averages of certain factors of selecting a shopping location (dependent variables).

2.4.3. Multivariate analysis

Principal component analysis and cluster analysis were conducted for analyses involving more than two variables.

The applicability of principal component analysis needs to be preceded by a KMO test, in other to establish that the variables have a significant relationship. In the next step, principal component analysis explores the relationship between the variables and makes it possible to collapse variables into composite categories with a minimal loss of information. Cause and effect relationships may appear more clearly by establishing new independent variables in this manner, as a large number of variables is reduced to new variables, so-called principal components, which are independent of each other, while maintaining at least 60% of their original data content. In order to make distinctions clearer, these components may be further separated by the application of Varimax rotations.
This analysis was applied in order to reduce 10 variables related to attitudes to food safety into smaller, manageable groups and describe underlying patterns.

Cluster analysis is a further possibility for multivariate analyses. Using this procedure, the population may be divided into relatively homogeneous groups that are distinct from each other in their responses, and then described by demographic variables. Two-step cluster analysis was conducted on data on opinions and attitudes to food safety. With this method, it is not necessary to predetermine the number of clusters to be used, and in addition, it is also suitable for processing a large amount of data. The program suggests a number of clusters that seems to emerge and uses a scatter dot procedure to display results visually.
Subsequently, the emerging clusters were contrasted based on demographic data and their profiles were established and described. This summarises data that are useful in practice for marketing purposes, making it possible to create strategic approaches targeted at certain consumer needs.

3. RESULTS AND DISCUSSION

3.1 Secondary research findings

3.1.1 An overview of Angola's macroeconomics and food sector

Our knowledge of agricultural production in Angola dates back to the 13th and 14th centuries. The first Portuguese colonists arrived at the banks of the Congo river in 1482, in search of precious metals, spices, ivory, and arable land, as well as with the goal of converting the local population to Christianity. Subsequent aims included political control, seizing land, and slave trade. The 16th and 17th centuries were an era of colonial expansion by the Netherlands and England. Portugal was forced to recede; however, it still had a significant role in establishing giant plantations of monoculture production focusing on satisfying the demands of European consumers for tea and sugarcane. As a consequence, the colonies were subject to an economically distorted and dependent model of agricultural system.

The second half of the 19th century witnessed another wave of direct colonisation, despite attempts at resistance by local rulers. The objective was the exploitation of the huge raw material and mineral reserves of the continent, investment of capital, and making Africa a potential market for products.

By the turn of the 20th century, colonisation was complete. A dictatorial system, similar to the one in the home country, was introduced in the territory of today's Angola. From approximately the 1920s onwards, plantation owners and farmers had well-established channels for selling agricultural products (cotton, sugarcane, coffee, bananas, tobacco, palm, sisal) to Portuguese traders and for purchasing the necessary supplies and instruments. The country was not dependent on food imports, with the exception of wheat.

Angola became independent in 1975. Plantation owners were forced to flee, resulting in lost business relationships and a lack of investments, and eventually, a dramatic drop in production. The subsequent civil war destroyed rural plantations, farms and infrastructure. For nearly three decades, the unrest raged on, focused on mineral oil reserves and diamond mines. Another distorted structure emerged, an over-reliance called "the Dutch disease" so typical of developing countries rich in minerals: mining was disproportionately developed, but at the same time, essential sectors, such as agriculture and processing industry, lagged painfully behind, depriving the economy of the possible advantages of evenly developed sectors – such as access to locally produced, cheap food.

The civil war ended in 2002; however, the agricultural sector could not recover from the destruction of the previous decades. Recently a slow-paced but steady increase can be detected, mostly thanks to investments by strong investors. Productivity at small-scale private farms continues to be extremely low, as infrastructure in rural areas is limited, and there are not sufficient government-level incentives in place to resettle the previously refugee populations back into their villages. Landmine clearance is in progress, but is predicted to take decades to complete.

Table 1 presents the contribution of the individual sectors to GDP from 2002 to 2016. Crude oil and its derivatives dominate the economy; however, there is a continuing increase in the construction, service and banking sectors, as well as a slight increase in the agricultural sector.

Table 1.
Gross domestic product at current prices by sector, 2002-2016 (million USD)

Sectors	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**	**2014**	**2015**	**2016**
Agriculture	649	1080	1894	2996	3839	4556	6122	5403	4810
Fishing	290	389	834	1335	1167	1211	1607	1632	2886
Crude oil	7093	9739	23766	43924	35977	53278	46046	30498	34632
Diamond and minerals	407	575	850	866	778	727	1241	2550	1924
Manufacturing	589	1099	1899	866	778	727	1241	2550	1924
Energy	62	132	430	495	695	1338	1123	1122	962
Construction	870	1283	3603	5913	7273	10693	14458	11016	9620
Commerce	1704	2882	4925	7927	7215	5802	7161	5924	12506
Logitics and storage	292	434	918	2112	1754	2226	2669	2208	1924
Telecommunicatons	161	191	745	1423	1713	4037	5036	4167	1924
Banking and insurance	294	410	729	1538	1489	1315	1630	1349	1924
State	1428	2269	4527	8502	8862	13761	24130	17819	6734
Real estate services	940	1474	2219	3332	3575	5191	7091	5867	4810
Other services	1281	1811	5476	6125	6355	7936	5342	4419	5772
Adjustments	-104	-186	-362	-1229	-1291	-1453	1423	0	0
GDP	15 957	23 580	52 452	88 378	82 744	115 345	129 342	102 000	96 200
GDP per capita	871	1191	2476	4598	4267	4716	4917	3889	3497

Source: own editing based on (CEIC, 2017)

GDP reached a peak in 2008, and a second one in 2014. GDP increased over 8-fold from 2002 to 2014, which changed the country's status from a low-income country to an upper-middle income country. In 2015, however, there was a sharp drop back to lower-middle level country, which position has been maintained since. The reason for this recession was the oil oversupply crises, which started in 2014 and saw prices plummet and an immediate collapse of macroeconomic data. President Santos, who had been reigning for 38 years, was replaced by president Lourenço in 2017, and implemented stabilisation politics with an impressive result on the economy, which was then disrupted again by new challenges.

The coronavirus pandemic underway at the time of writing this dissertation had a negative impact on Angola as well. According to a study by the experts of worldwide data-processing giant Knoema, Angola ranks 23rd on the list of most vulnerable countries regarding its Coronavirus Susceptibility Index. Figure 2 below reveals that the immediate danger does not lie directly in the health impact of the pandemic; rather, the fluctuation and collapse of the price of crude oil threatens the stability of the national economy once again.

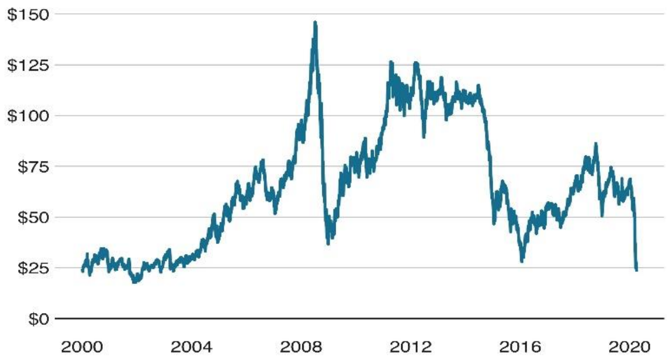

Figure 2
Price of Brent crude oil (USD) from 2000 to 30-03-2020

Source: (GeoEngineer, 2020)

Angola has a positive trade balance: exports are nearly the triple of imports. The country is the world's 60th largest exporter, thanks to exports of $30.3 billion, 88% of which is crude oil, followed by natural gas (4.5%) and diamonds (4.3%). Agricultural exports include rather insignificant proportions, frozen unfilleted fish, crustaceans from marine fishing (0.2%) and fish oils (0.03%). Coffee accounts for a mere 0.00389% of all exports. Very importantly, food used to comprise 42.1% of all exports in 1972, followed by a gradual and steady decline from this level.
61% of exports go to China. Following China's new global strategy at the beginning of the new millennium, there was a fundamental reshuffle of market positions on the entire African continent, with a huge influx of investments to Angola. The rate of increase has been somewhat slower in the past 3 years, and the country is increasingly in debt to China.
Regarding imports, according to OEC data from 2017, Angola is the 87th largest importer worldwide. There is a negative trend, which is a direct result of shifts in the country's changing economic policies and the development of domestic production in certain sectors. Imports are mainly sourced from Europe (44%, including 19% from Portugal). Asia provides 33.5%, 21% of which (2.24 billion USD) originates from China. Hungary contributes 84 million USD imports to Angola (ranking 11th of the European countries).
Food imports take up 23.75% of all imports, valued at 2.471 billion USD.

3.1.2 Utilisation of arable land

One can only estimate the use of agricultural land; there is a continuous expansion, but at the same time, settlements are also increasing in size, so there is a constant fluctuation. Data regarding the number of participants involved in farming, farm sizes and locations, investments and production are varie from year to year, production data are incomplete. According to estimates, 70% are small-size family plots and farms, with low productivity and efficiency, traditional methods, and without any modern scientific or technological advances.

An Institute of Business Development (IFE), established in 2012, calculates that from the point of view of investments, large-scale farms are at an advantage. However, based on other considerations, such as the characteristics of rural communities, the aim of rural development and ensuring basic sustenance for the population, instead of large-scale domestic migration. National policies support cooperatives of small-scale plantations and farms.
The use of agricultural land can be summarised as follows (based on data from 2017).

1: Arable land: 4.9 million hectares (3.9%)

2: Plantations and greenhouses: 0.315 million hectares (0.3%)
3: Grassland and fodder: 54 million hectares (43.3%)
1-3 TOTAL AGRICULTURAL LAND 59.215 million hectares (47.5%)
4: Forest (including protected areas): 57.7 million hectares (46.3%)
5: Other (settlements, other not arable): 7.75 million hectares (6.2%)
1-5 TOTAL LAND AREA 124.67 million hectares (100%)

Forest coverage is declining; due to logging and seasonal slash and burn, approximately 0.2% or 125 000 hectares of forests disappear annually. A large proportion of arable land is not in use currently. Potential domestic and foreign investors are not attracted by the underdeveloped infrastructure, shortage of skilled labour, and low potential for processing and supporting services. Potential investments and more effective utilisation of arable land are often hindered or stopped by deficiencies in ownership registration, lengthy bureaucratic procedures, and local speculators, resulting in increased expenses and significant loss of time.

3.1.3. Factors of the food sector and their impact on consumers

Consumer research has been an increasingly prominent area of marketing since the 1980s. A deeper exploration and understanding of the consumers' decision-making process and its contributing factors facilitates the establishment of optimal conditions tailored at the consumers' needs and expectations. In order to explore the complex nature of consumption, it is essential to know consumers and their motivations in depth.

Consumer behaviour research is a study of how individuals or groups of consumers select products and services that they expect to satisfy their needs, and how they buy, use, evaluate and dispose of them after selection.

Developed countries demonstrate a new social and economic structure: in consumer societies, individuals' identities are built primarily on the products and services they buy, as opposed to producer societies, which are based upon the goods and services produced.

A key component of understanding consumer behaviour is the exploration of customers' decision-making processes and their contributing factors. Kotler's classic consumer decision-making process comprises five steps:

- Need or problem recognition
- Information search
- Evaluation of alternatives
- Purchase decision
- Post-purchase behaviour, satisfaction, voice of the customer

Elements of consumer behaviour and their connections can be modelled with various structural models, process models or a combination of these. Models evolve as new information emerges regarding external and internal factors influencing purchase.

Food purchase is an especially sensitive area of consumption, with several direct factors (such as biological needs) as well as indirect factors (economic, social, cultural). The role of nutrition is not merely limited to a physiological need. Besides nutritional value, food also has a symbolic significance, it also embodies the fulfillment of an essential social and psychological need.

3.1.4. Factors influencing consumer behaviour

Elements of the macro environment are beyond the influence of consumers. There are still significant local, regional and national variations, in spite of the levelling influence of globalisation, worldwide free trade, and the uniformisation of technology.

3.1.4.1 Economic factors

In developing countries, social inequalities and the high rate of poverty have a crucial impact on the structure of food consumption. Supply saturation, typical of advanced economies, has not occurred in the Angolan food market and is not expected to occur in the near future. The characteristics of local and imported goods competing at the market are summarised in Table 2.

Table 2
Comparison of main characteristics of domestic and imported foods

Locally produced	Characteristics	Imported
small and medium sized producers	**produced by**	corporations
traditional	**method of production**	modern technology, intensive farming
limited	**quantity**	depends on demand
local, regional	**source**	other countries or continents
nearby	**place of sale**	in the importing country
low	**level of processing**	high
natural or none	**packaging**	large quantity, mostly plastic, metal, glass or paper
large (e. g. sacks)	**portion size**	small package sizes
drying, salting, smoking	**level of preservation**	salting, drying, freezing, canning
none	**additives**	numerous
limited	**access to market**	unlimited to large cities
relatively cheap	**price**	expensive
high	**volatility index of prices**	low, but subject to global trends
information by seller	**information about the product**	labels corresponding to internationally accepted practices
low, not continuous	**security of supply**	continuous supply guaranteed
inadequate	**storage capacity**	refrigerated containers available
limited	**quality control**	limited
no official procedure	**procedure regarding quality complaints**	possible legal procedures through consumer protection
none	**trademark**	perhaps

Source: own editing

As a part of their economic policies, countries may regulate the competition of locally produced and imported goods and promote or favour locally sourced produce, as long as the terms of international treaties are respected. In the case of Angola, food imports are unavoidable due to insufficient food production and processing. Maize, rice, cassava, sugar, palm oil, beans, potatoes, vegetables and tropical fruits are produced in climatic and soil conditions that are ideal for the production of these crops, however, impoverished local producers are unable to modernise and increase their yields. This opens the door for foreign corporations willing to invest into agriculture and food processing industry. The aim is to achieve self-sufficiency in feeding the population and eliminate dependence on imports.

3.1.4.2 Demographic factors

Demographic factors are dominated by the continuous exponential increase of the population. Nearly 25% of Angolans are clustered in and around the capital Luanda. Children and young people under 25 years of age account for over half of the population, whereas senior citizens over the age of 65 comprise a mere 1%. Internal migration brings a large number of people from rural areas into urban areas. Traditional family structures are gradually transforming, as an increasing proportion of women are employed, and multi-generational families are increasingly fragmented into separate households, indicating an increase in the demand for affordable housing and an upsurge in housing construction.

3.1.4.3 Natural environment and sustainability

The World Bank released a publication in 2011 entitled *"The Changing Wealth of Nations"*, which concludes that the current trends in the emergence of Africa as an economic power are not considered gainful. It argues that considering the finite amount of minerals and natural resources, the resulting pollution, the accumulated profits, as well as the conversion of these profits into added value (such as the development of education), the resulting balance is still overwhelmingly negative, as the affected countries lose or give up significantly more of their national wealth than they subsequently gain. Providing reliable water and food supplies are becoming a major difficulty, hindered or endangered by factors such as logging, slash and burn practices, polluted bodies of water, the lack of waste management and recycling, climate change, aridification, an uneven distribution of precipitation, and an increase in the number of catastrophic weather events such as flash floods.

3.1.4.4 Technological environment

Developing countries typically exhibit a peculiar duality with regard to the technological environment. Higher classes have access to the latest technology, whereas the country as a whole has gaping holes in the basic infrastructure. Basic necessities such as roads, railways, power supply, sanitation are severely lacking, and technological glitches also hinder an effective government and administration. In the information and communication sector, there is a rapid development, but naturally both qualitative indicators (bandwidth, expenses) and quantitative indicators (number of customers and users) show that these countries lag way behind developed nations. Technological advancement in the field of the agricultural sector comprises issues such as biotechnology and genetics, for improving plant varieties that are resistant or more adapted to climate change or microorganisms, provide higher yields or improved quality, and are able to compete with imported products. Generally speaking, there is an insufficient number of heavy machineries, irrigation systems are underdeveloped, and processing industries are virtually nonexistent. Supply chains conspicuously lack ventures specialised in storage and transportation, which is a major obstacle to meeting the customers' basic needs in a country of considerable size. Therefore, it is virtually impossible to track and trace the origin of the products. Any kind of quality control is unmanageable, and hardly any domestic products have trademarks.

3.1.4.5 Social and cultural environment

Current customs and trends of food consumption in Angola were historically impacted by the Portuguese colonists. The farming of local plants, animals and fishing was supplemented by the introduction of several new procedures or ingredients, such as wheat-based bread and dairy. In addition, as a result of the economic boom, Angola has become a target country for immigrants

from other African nations. Very notably, a significant number of Chinese immigrants have settled in the country, bringing with them their own culinary culture, customs and ingredients.
The survey of habits related to food purchase and consumption calls for a multidisciplinary approach, taking into consideration the careful analysis of economic, social and cultural factors. Certain researchers argue that despite wide variations worldwide, the main factor continues to be the economic situation of the family, which even overrides cultural considerations. Generally speaking, economic development, new jobs, improving housing and education options result in a stronger working class and middle class with permanent jobs and increasing purchasing power, as well as the emergence of an elite. In summary, there is an increase in purchasing power. The characteristics of consumer society are delayed; they appear after certain developmental phases and lag behind in rural areas far from cities. An inflexible food industry is totally incapable of reacting to the emergence of new types of consumer demand.

3.1.4.6 Political and legal environment

Political stability has improved significantly in Angola since the end of the civil war in 2002. According to the World Bank (2019), the main events have been democratic parliamentary elections and presidential elections, as well as the first ever municipal elections planned for the year 2020. The government is committed to maintaining domestic and regional peace and stability, and has drawn up several regional treaties and agreements as well as acts as a mediator in the case of conflicts. The plan to decrease reliance on imports is a delicate problem with serious repercussions in international relations. Apparently, possible solutions include political and legal advancements promoting the expansion of domestic production and improving the quality and competitiveness of locally grown produce.

3.1.4.7 Micro-environment

The microenvironment is a narrower set of exogenous factors that determine consumer behaviour, essentially summarising the supply elements of the food market. Microeconomically speaking, the food market in Angola is characterised as an oligopoly, trending towards monopoly, meaning that the bulk of production is dominated by a low number of large corporations with virtually no competitors.
Food prices continue to pose a severe problem. The relationship of prices, demand and disposable incomes varies depending on the level of processing. The lowest indicators are characteristic of agricultural production, and relatively high in food processing, retail, and the catering sector.
Engel's studies show that as family income increases, the amount of food consumed in monetary terms increases, but the percentage of food consumed decreases. The poorer a family is, the more of its income it spends on food. In 2012, the relevant figure for the urban populations of Sub-Saharan Africa was 58.4%, which exceeds the corresponding proportion in developed countries significantly (EU: 12.2%, Hungary: 18.2%).
Media can also be considered an element of the microenvironment surrounding the consumer. Naturally, there is lower competition than in developed countries, and high-budget advertising campaigns are not characteristic, as they are an unnecessary component of successful campaigns anyway.
Consumer behaviour is significantly influenced by groups that humans are raised in (families) and that they join later on in life (friends, etc). In the case of Luanda, family traditions and opinions continue to have a strong impact on everyday nutrition and consumer decision, families provide the primary frame of reference for people by continuing traditions and expectations, promoting a sense of belonging.

3.1.4.8 Internal factors of the food consumer

Human beings are living creatures with specific genetic and physical markers, which are maintained and propagated through nutrition. Sensory perception (taste, smell, vision, hearing and touch) has a significant impact on food consumption. In addition, basic psychological factors may also have an impact: perception, learnt behaviours, a sense of self, personality, motivation and attitudes have short or long-term impact in the decision-making process.

3.1.5 Trends and counter-trends in food consumption

Trend research focuses on the consumers of the future: how their circumstances, lifestyle, value systems are envisioned in the future, based on the present-day environmental changes and personal factors, which shape current and future trends. Strong trends, however, may give rise to counter-trends, which are followed by segments of consumers who are unwilling to identify with the dominating trends. In addition, popular trends rise for shorter periods of time.

There are three leading trends in the food economy at global level.

- A commitment to produce and consume healthy food.
- Food safety and high quality. The demand for safety and quality is growing, and one can only hope that less developed countries will join this trend.
- Sustainability is a common cause for all people. Climate change and environmental pollution, due to lower resilience, are affecting those who have contributed least to its development. The UN's Sustainable Development Goal 2030 (Global Agenda 2030) for the period 2015-2030 was designed to ensure this.

Describing food consumption trends, Lehota underlines that trends are hardly ever linear, they tend to be more cyclical in nature. It is observed that in main factors influencing consumer decision-making in developed countries are as follows: technological development, social changes, interactivity of communication, acceptance of new foods and technologies, and the willingness to pay premium prices for premium quality. At the same time, however, developing markets continue to be influenced by economic and demographic factors, with minor input from information and communication technology, social changes, and new cultural input from globalisation.

3.2 Results of primary research

The target population of this research project is concentrated in a relatively small area of a huge country. In 2019, the population of Luanda was 8 million, which is approximately a quarter of the country's total population. The capital is a political, economic, industrial, cultural and commercial centre, as well as a transportation hub with an international airport and seaport, an expanding network of railways and highways. Providing adequate food supplies and regulating the market pose challenges for government organisations, for corporations and enterprises involved in production and distribution, as well as for the population itself.

3.2.1 Demographic analysis

In order to ensure that the population sample used in the current project is representative of the actual population of Luanda regarding age and gender, the researcher relied on the census results of the National Institute of Statistics (INE) in 2014 and its update from the year 2019. At the population level, official data confirm the proportion of 48.7% of men and 51.3% of women, which corresponds to the proportions of the population we surveyed.

Regarding age groups, under 35s (young adults) and over 35s (middle aged and elderly) were distinguished. It is presumed that due to their different life stages, differences in their consumption patterns also appear. According to the UN database of the population, young adults (18 to 34 years) outnumber over 35s, indicating the strong presence of younger generations, especially when compared to developed countries, forming a broad-based pyramid; this ratio appears in the composition of the query. The distributions by gender and age groups are shown in Table 3.

Table 3.
Distribution of participants by age and gender (Q1, Q2; N:580)

Age				Total
		Young adults (18-34)	**Middle - aged and elderly (over 35)**	
Male	**N**	143	138	281
	Percentage within male population	50.9	49.1	100.0
	Percentage of total population	24.7	23.8	48.4
Female	**N**	153	146	299
	Percentage within female population	51.2	48.8	100.0
	Percentage of total population	26.4	25.2	51.6
Total	**Total**	296	284	580
	Total in %	51.0	49.0	100.0

Source: own research

For housing arrangements, approximately two third of the population of Luanda and therefore the participants of this survey, live in multi-generational small houses with a shared yard (favelas) or in suburban houses with a garden and subsidiary buildings. The central area of Luanda is being surrounded continuously by newer and newer populated areas springing up on the outskirts. Figure 3 shows the distribution of respondents in this regard.

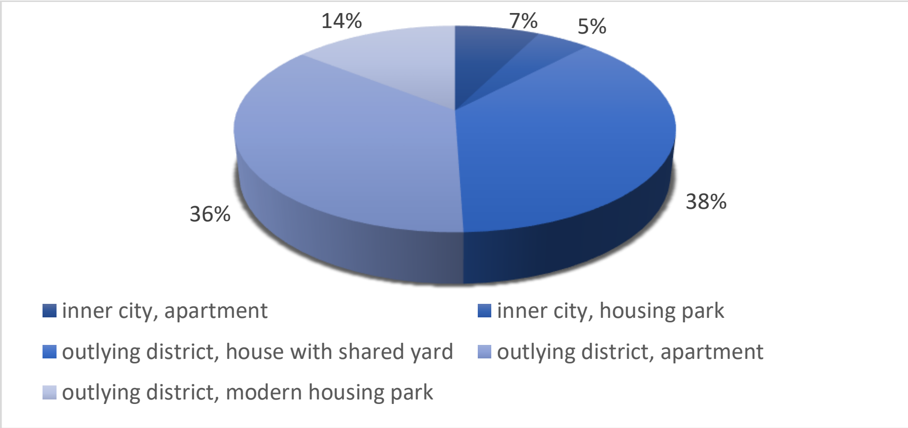

Figure 3
Distribution of respondents by place of residence (Q3; N:580)

Source: own research

Traditional family structures are still maintained, and multi-generational families sharing a household are the basic unit of society. In sharp contrast to developed countries, single households are a rarity; and nearly half of the respondents share a household with other generations, including several children, and comprising at least 9 members. Medium-sized families, with 3-6 children are a more modern development, characteristic of a third of the respondents. Nuclear families with 1-2 children, or single households account for 16% and 2% of the sample, respectively. The results are presented in the pie chart in Figure 4.

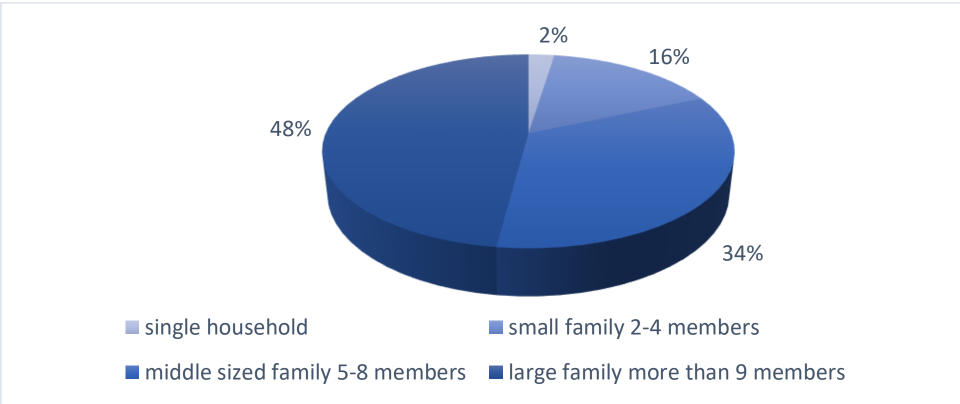

Figure 4
Distribution of the respondents based on household size (Q4; N:580)

Source: own research

Another aspect was the educational level of the respondents, and their presumably related job and social status. Figure 5 shows the distribution of respondents with different levels of education, grouped by gender.

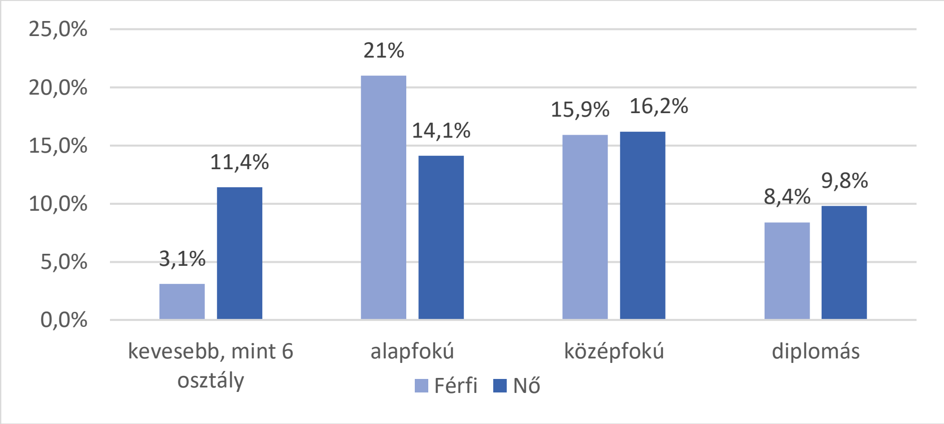

Figure 5
Distribution of respondents' educational attainment by gender (Q5; N:580)

Source: own research

In Question 6 (Q6), the aim was to find out about the employment of the respondents, where 32% of employees said that they were employed, a quarter of them were employed on a casual basis, 15.6% were domestic workers and a tenth were self-employed. Around 7%, there was a nearly equal proportion of students and unemployed. People over the age of 65 barely reach 1% of the total population, and their role in consumption is insignificant.

At the end of the demographic question set, we measured subjective income satisfaction, which is shown in Figure 6.

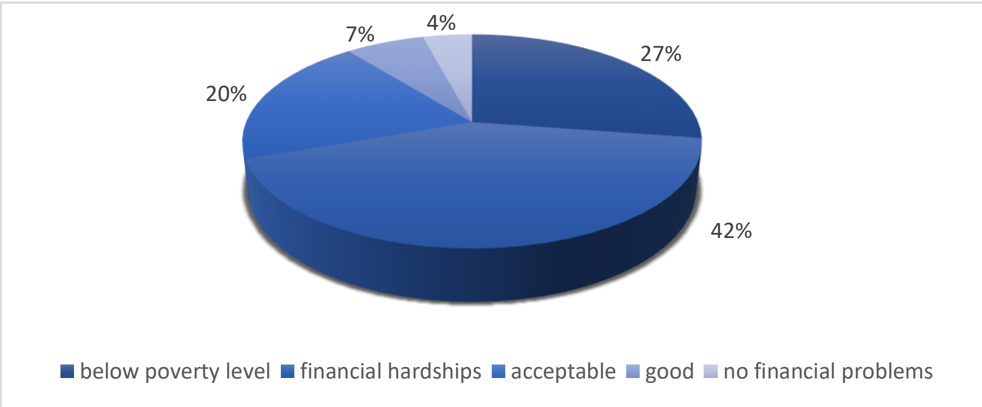

Figure 6
Subjective assessment of the financial situation of respondents (Q7; N:580)

Source: own research

It is apparent from the above diagram that the majority, 69%, are dissatisfied with their financial situation. Within this percentage, 27% confesses that they are below the poverty line and are unable to provide the basic needs for their families. In their case, food choice is based on their economic situation and financial means, and almost their entire income is spent on providing basic nutrition.
About 42% of respondents declared that they have financial hardships, which is a step up in reliability and sustenance, but still below expectations. In this group, financial constraints are a significant factor in consumer choices; however, it is presumed that a slightly higher level of access is possible and that the satisfaction of personal needs and preferences appear.
Only 31% of respondents consider their financial situation acceptable, good or excellent. There are bound to be huge differences within this group, however. Generally speaking, this group

spends a lower percentage of its income on foods, they have the option to choose between alternatives (when available), and they have the means to purchase items beyond basic needs, display conscious choices or higher considerations.

3.2.2. The survey of food consumption

The survey of food consumption comprised questions on the frequency of shopping trips, the amounts purchased at a time, the participants and their roles, the selection of shops, motivation, and information gathering before the trip. The focus was on gender differences in purchasing, and identifying signs of continuing or discontinuing traditions.

3.2.2.1 Frequency of shopping trips

Several items of the questionnaire address various aspects of shopping trips. Figure 7 summarises the frequency of shopping trips for males and females (Q8). There is a moderate correlation between the two variables (Cramer's V=0.535). Females tend to do regular and day-to-day shopping, whereas males only make occasional trips.

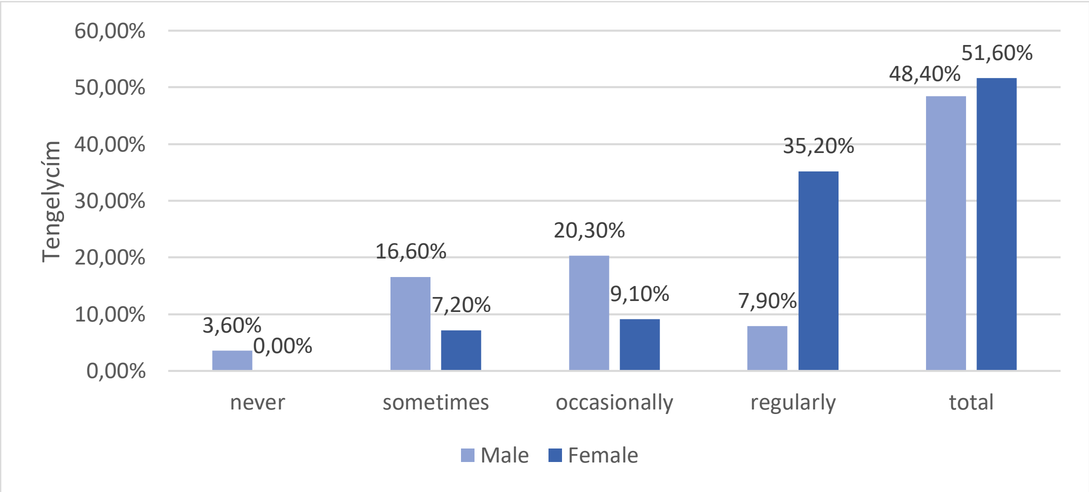

Figure 7
Food purchase frequency by gender (Q8; N:580)

Source: own research

Respondents who never shop are all elderly males in a favela community, who tend to live in multi-generational, large families, have low levels of education and are typically unemployed.
Q9 addresses the frequency of shopping trips using a 5-point Likert scale. 64% of females shop at least once a week; the corresponding ratio is 28% for males. Most males make shopping trips once a month, which is also the most frequent reply in the entire sample.
Q29.1-38 addressed the frequency of shopping for 38 specific food items, results were grouped into 4 main categories.

• Respondents buy the following items several times a week: white bread (every 2-3 days), onions, tomatoes, paprika / peppers, locally grown fruits (every 5 days), other vegetables (every 6 days).

• Respondents buy the following items once a week or once a fortnight: cassava, dairy, pasta, imported fruits, mineral water, eggs, soft drinks, fruit juice. This group of food items is sharply distinct from the previous group of frequently bought items.

• Respondents buy 16 items every 2 to 4 weeks: those that are typically bought in bulk and are not perishable, also meat and fish.

• 11 items are purchased less frequently than once a month. These include foodstuff that is bought in bulk, or infrequently used.

Results highlight the following considerations.

- 54% typically purchase food items that last several weeks.
- Salaries are usually paid monthly and are directly used to replenish food stocks at home, especially for poorer and larger families.
- Males usually participate in shopping trips as technical helpers: they are more capable of carrying heavy items, organise transport, and provide safety and security for female family members.
- Smaller, more regular purchases are typically made by females.
- Unprocessed raw food items are bought more frequently, as they are more perishable, cheaper, and easier to locate locally.
- Those who stockpile large amounts of food are probably unable to access fresh food regularly, which has a negative impact on versatility of the alimentation and long-term health.
- Typical shopping venues are markets and shops that offer non-perishable items in bulk. According to cultural traditions and the local climate, basic foodstuff such as cassava, corn flour, palm oil and dried fish are typically offered in 20-kilogram bags or 5-20 liter canisters.
- Access to quality protein sources is limited. Our study shows that dried beans rank much higher than animal-based proteins.

3.2.2.2 Motivation

Questionnaire items 18.1 to 18.11 addressed several aspects of motivation, ranging from functional and practical factors to emotional factors, on a scale of *never*, *sometimes*, *regularly*, *almost always*. Results are presented in Figure 8.

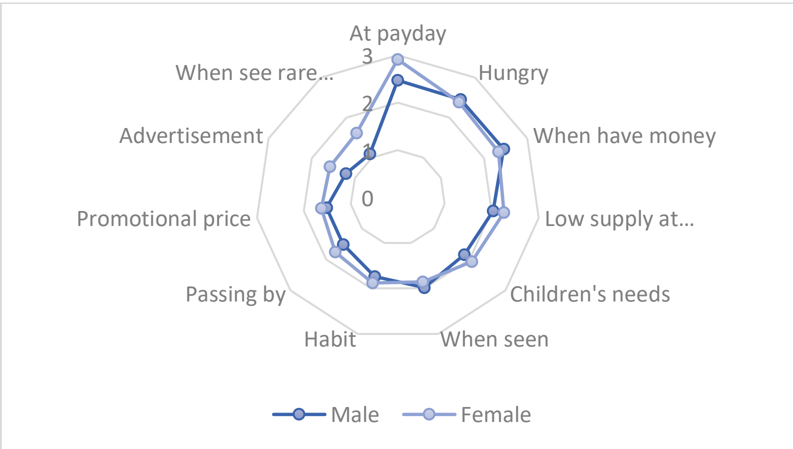

Figure 8
Motivational factors of food purchase

Source: own research

By far the most motivating factor is *salary payday* (2.71), with a significant ($p<0.01$) dominance in the case of females. For 24.9% of respondents, salary paydays are *almost always* the motivation for shopping; its significance is underlined later on in this study. *When I have enough money* is also a top choice (2.38). Sensory motivation appears in *when I'm hungry* (2.42), which occupies 2nd place, and in *when I see it* (1.91). When males and females are compared, the latter two factors tend to be more typical of males; all other factors appear more

frequently in the female respondents, with significant differences between the genders in the case of *salary payday*, *low supplies at home*, and *children's needs*.
In summary:

- Motivation is overwhelmingly dominated by functional components, primarily financial constraints. Salary paydays mean that homemakers (females) can go for their monthly shopping rounds and restock their dwindling supplies and secure food for a longer period, before satisfying any other needs.
- Sensory components are more dominant in the case of males; they are more likely to shop for food when they see something or when they feel hungry (which also has functional elements).
- Females' functional motivation is directed at the optimal allocation of limited family budgets; however, when it comes to the children's needs or desires, they are also affected by emotional components.
- Seeking temporary pleasures makes an appearance in the younger generation: instead of long-term planning and careful considerations, a "seize the day" approach also occurs in the sample. This is more typical of males: without the regulatory effect of family members, they are more likely to dispose of large proportions of their income on fashion or leisure, at the detriment of proper nutrition of other family members.
- Advertisements hardly ever appear as motivating factors; in fact, the number of advertisements focusing on food is low.
- Promotions (discounts, coupons, reward points) are virtually nonexistent, with the exception of one supermarket chain. Bargaining, a kind of personally "earned" discount is very typical, almost compulsory, at markets.

3.2.2.3 Information

Questionnaire item Q17.1-6 lists six possible sources of information on recommendations for food purchase (*family members, friends and acquaintances, advertisements, internet, directly from the shop, recommendation by a doctor or expert*), on a 3-point scale (*never, sometimes, usually*). The distribution of responses is presented in Figure 9.

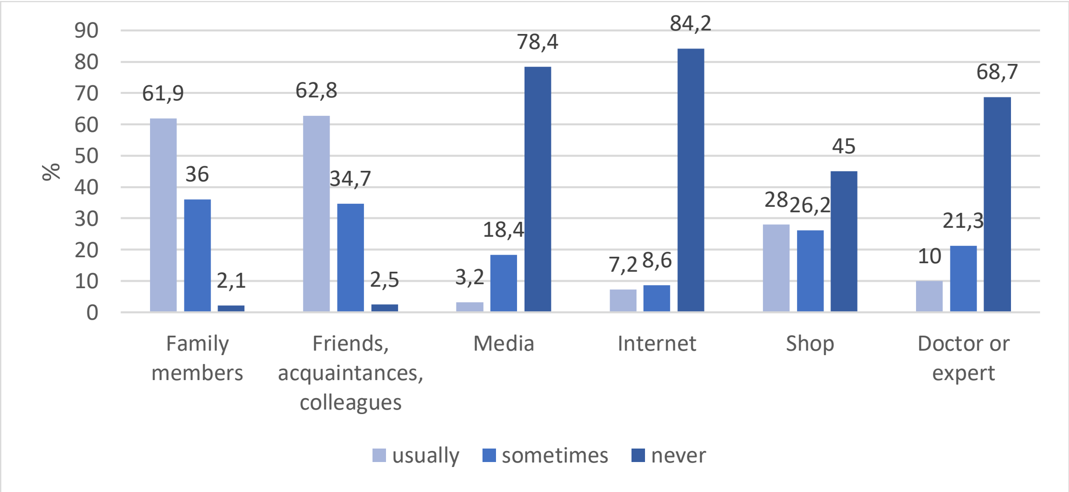

Figure 9
Source of information for food purchase recommendations (%)

Source: own research

The influence of *family members* and *friends and acquaintances* is dominant, the distribution among them is quite even. *Advertisements or leaflets* by individual shops come third, which

underlies the significance of personal experience. Recommendations by doctors or experts have a mild impact; whereas information and advertisements on the internet and traditional media hardly even appear as sources of information and recommendation. However, there is a significant correlation between educational background and use *advertisements, doctors or experts* for recommendations ($p<0,01$) with Cramer's V=0.327 for advertisements, and 0.358 for doctors and experts), which demonstrates that those with secondary or higher education tend to gather information from a wider circle of sources.
The structure of gathering information (questionnaire item 12.2: who collects information and recommendations?) is summarised in the table below. Women (mothers) also have a leading role in collecting information.

The following conclusions can be made regarding information:

- Information has a decisive role in consumer behaviour. It is related to decision-making processes, selecting the place of purchase, level of consciousness, and food security.
- Information-gathering is mainly conducted by homemakers (females).
- Primary sources of information are personal contacts (frame of reference), with personal experience also having an impact.
- Conscious information-gathering and decision-making are related to level of education. Those with at least secondary qualifications have more consciousness of the relevance of information collected, pay more attention to personal experience, consider advice by professionals, they may have access to preventive medical care, and better informed about healthy eating.
- Media has hardly any food advertisements, due to the fact that there is a low and narrow supply compared to demands (few supermarkets and traders), so it is easy to remain successful as a seller even without advertising.
  Printed media is insignificant compared to European countries; internet access is limited. Most mobile phone users only use social media, as access is expensive, fees are based on data usage, and connection is slow.

3.2.2.4 Choosing the place of purchase

The questionnaire contains items about 12 contributing factors using Likert scales. Figure 10 displays the impact of individual factors, in a descending order clockwise, showing differences by gender and also totals.

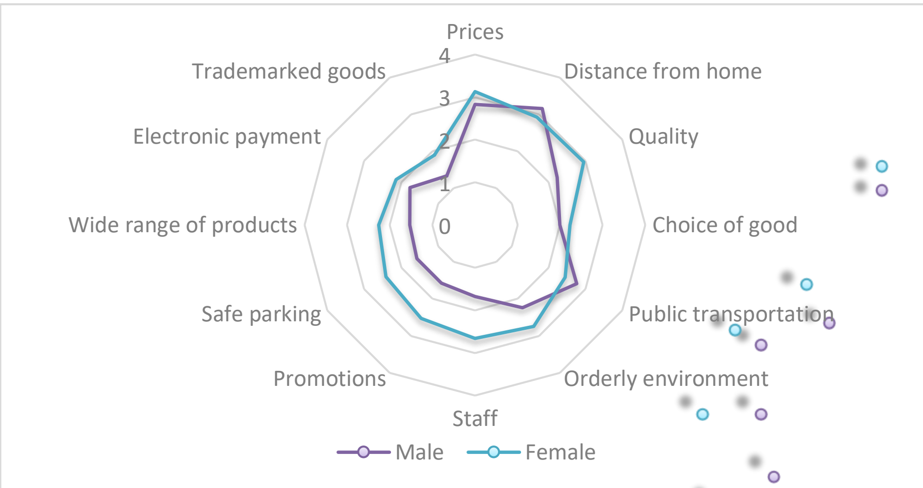

Figure 10
Factors for deciding where to buy

Source: own research

As expected, the primary factors for choosing a shop are *prices of goods* (3.0) and *distance from home* (2.98). *Quality of food* only comes third (2.77). Almost all options are more significant for females than for males, especially prices and food quality.

Figure 11 is based on a layered crosstab test. There is a significant difference and moderately strong correlation between educational background and the demand for a clean and orderly shopping environment (Cramer's V males=0.321; females=0.359).

The following can be concluded:

- Choices are primarily made based on prices. Sensitivity to prices is highly dependent on income (most of the sample consists of low-income households). Promotions as marketing tools appeared in food retail in the past 3 years and do not go beyond a few chains of stores.
- The second factor impacting the place of purchase is its location or distance from home. The number of shops is limited, and public transportation is scarce and expensive. Time constraints are also an important factor. Therefore, for the majority, realistic choices are limited to small informal local markets and family-owned small shops as their main sources of food purchases.
- The quality of food is less important than prices or location, indicating that compromises are made unavoidably.
- The low impact of electronic payment as an influencing factor indicates that these services are not widely used; the vast majority continues to rely on cash payments.
- Trademarked goods have only appeared recently, they are limited in range and virtually unknown, therefore, they are insignificant for the time being.
- Females spend more time and effort on planning and decision-making. It appears that males are more spontaneous, less rational, whereas females have a complex decision-making process in comparison, striving for optimal solutions with limited means.
- For all educational levels, females have higher expectations than males.
- Consumers of both genders with secondary or higher education have higher expectations of quality.

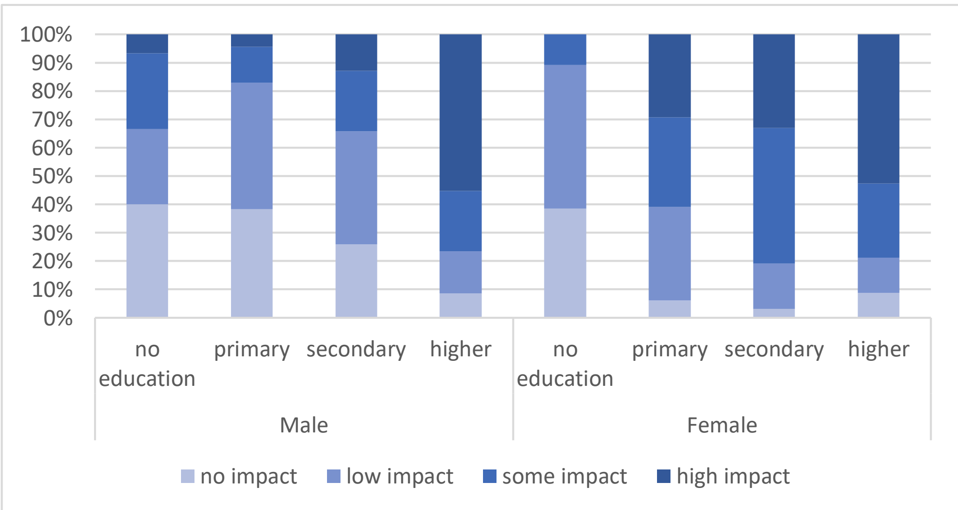

Figure 11
The effect of cleanliness, orderly environment on place of purchase selecting behavior by gender and education (Q1, Q5, Q16.5, N:558)

Source: own research

3.2.2.5 Food safety

Items Q28.1-28.10, contained statements regarding current food safety problems, in order to survey the respondents' attitudes to food security, using a 4-point Likert scale, ranging from *1-strongly disagree* to *4 – strongly agree*. Two statements, regarding the need to improve food quality control and sanctioning violations, received strong approval (over 3.0), which reflects on the current inefficiency of quality control systems. In addition, consumers consider it necessary (average: 2.96) to disseminate information more widely regarding food quality, which indicates that they consider their own current knowledge insufficient or feel insecure. Somewhat surprisingly, consumers have a positive attitude to the safety of locally produced food (average: 2.76), which mostly comprises unprocessed, fresh or raw foodstuff.
For each set of variables, correlation analysis revealed p <0.01 significance and moderate relationships (Spearman 0.15 to 0.679). KMO (0.846) and Bartlett tests indicate that sampling was adequate and factor analysis is relevant. As a result, the 10 variables were reduced to 2 uncorrelated principal components. The first factor accounts for 37.22% of total variation, whereas the second one covers 20.74%.

Table 4
Dimensions of consumers' opinion on food safety. Principal component analyis, varimax rotation component matrix

	Principal components	
	1	**2**
28.3 Grocery store food is safe.	**0,802**	
28.2 Quality control of food produced in Angola is adequate.	**0,795**	-0,143
28.1 Domestic food is of high quality and safe.	**0,764**	
28.4 Food sold in markets is safe	**0,736**	-0,151
28.6 Imported food is checked and controlled tightly and is safe.	**0,637**	-0,237
28.5 Food from street vendors is safe.	**0,617**	-0,374
28.7 I am worried about the quality of food available.	**-0,543**	0,469
28.8 8 Need to improve information on food quality	**-0,503**	0,404
28.10 Reinforcement of official measures in case of poor quality is necessary.		**0,894**
28.9 I consider it necessary to improve the quality control of food.	-0,168	**0,802**

Source: own research. Missing fields in the chart denote values ranging from 0.1 to -0.1.

In conclusion, food safety has two dimensions for consumers.

- **Component 1: safety and quality**, which comprises 8 of the 10 variables (covered in questionnaire items Q28.1 to 28.8), and accounts for all aspects of consumer behaviour related to safety, irrespective of location of purchase of source of the food items.
- **Component 2: quality control and sanctions** is a composite of the remaining 2 variables (Q28-9-28.10), which are related to the necessity of intervention and control by national authorities.

Cluster analysis was conducted in order to identify and analyse groups that are heterogeneous otherwise, but have a similar attitude in the issue of food safety. Clusters are presented in Figure 12, with axis x representing component 1 and axis y showing variations in component 2.

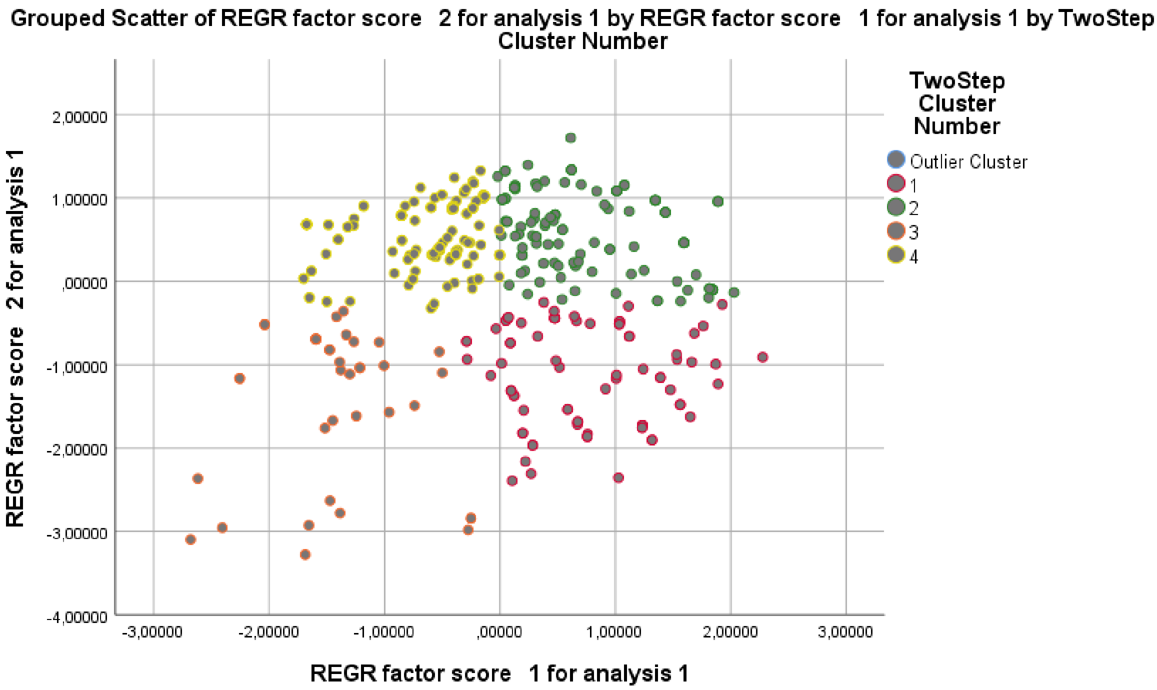

Figure 12
Clusters of food safety perception

Source: own research

Four distinct groups of consumers can be identified, based on the four directions away from the centre of the graph.

1. The quietly contented: In the group displayed in purple, safety and quality satisfaction is above average, and there is low demand for quality control and sanctions. This group trusts the quality of available foods, and does not think that sanctions or tight control would improve it any further.

2. The willing to improve: In this group, indicated in green, both components score above average, meaning that they consider current standards adequate, but at the same time, a call for further improvement is detected, by using stricter control and measures.

3. The resigners: This group, displayed in orange, is below average in both components. In other words, they are dissatisfied with available quality and safety standards, and at the same time, are negative about the possible impact of tighter government controls. This indicates a deep distrust of the functioning control system, or a belief that their opinions do not count. This group is aware that the situation is dire, but they accept it, and try to make the best of it.

4. The restless critics: This group, indicated in yellow, has a realistic assessment of the flaws of food quality and the resulting dangers, and they urge steps towards improving quality control. This group is the most likely to take active steps in order to force the administration to safeguard the interests of the general population, and take action against those who do not comply with regulations.

By comparing the clusters with demographic data, the following cluster profiles emerge:

Cluster 1, The group of the quietly contented: (N:81; 21.4%) comprises mostly males who live in small or medium-sized families in outlying areas of the capital, have low or medium qualifications, and low income. Typically, they purchase food once a month in local markets, small shops, or retail stores. In these households, according to 75% of respondents, females do the shopping and conduct all aspects of planning and decision-making. They complain that prices are expensive; however, they are most satisfied with the choices and variety available (N: 68/81, 84%). At the same time, 66% are not concerned at all with food quality, they have no doubts or worries regarding quality or safety ($p<0.01$, Cramer's V: 0.375). 75% are not aware of the meaning of organic food.

Cluster 2, The group of the willing to improve: (N:117; 30.9%) has a relatively even distribution of age and gender groups with minimal, non-significant female majority (N: 117, males: 45.3%, females: 54.7%; young 50.4%, middle-aged or elderly: 49.6%). They tend to have more favourable living conditions, such as homes in the suburbs, small or medium-sized families. Their educational background varies. 65% responded that females are responsible for shopping, but also in 24% of respondents, it is a joint family responsibility. They are moderately satisfied with their income and financial situation, have varying opinions on price levels, and tend to be satisfied with the range of choices. They shop at local markets and shops, but also visit supermarkets and large stores further away. 58% responded that healthful choices are important, but generally they do not believe they have an impact on the environment. Overall, their consumer behaviour is most similar to the members of cluster 4.

Cluster 3, The group of resigners: this group has the lowest number of respondents (N: 38; 10.0%). They come from all ages and both genders. They are typically from outlying districts (95%) and traditional large families (60.5%), and the significant majority have not even completed primary education (68.4%). Most households declare that women make decisions on shopping and they mostly purchase whatever they need or what is available in local markets or small shops. Hardly any of them are satisfied with their financial situation, and significantly fewer are interested in healthy eating and environmental protection, which makes the behaviour of the group members similar to that of the respondents in cluster 1.

Cluster 4, The group of restless critics: this group comprises the most members, at 37.7% of respondents (N: 143). It is dominated by women (73.4%), also the highest proportion of women (51.7%, N: 105/203) in the cluster comparison. The *critics* tend to belong to the mature age group, although the difference is not significant. This group has the best living conditions, with the highest proportion of small or medium households, and tends to be higher educated. In terms of educational attainment, the distributions are similar to those of cluster 2, with the only difference being the high proportion of graduates. This cluster has the best satisfaction with their financial situation, even though nearly half (N: 60) say that it is difficult to make ends meet. This cluster is the most likely to have couples shop together, mostly at shops, retail centres or supermarkets, less likely in markets. They consider prices high but still affordable. Divided on satisfaction with choice, with a majority of those who have objections (N: 104 out of 143, 72%). Nearly 80% consider it important to strive for healthful choices, and respondents in this cluster are most likely to be aware of organic foodstuffs. Only a third show any sign of environmental consciousness, though.

In conclusion, three out of the four consumer clusters show a pattern of opinion that could contribute to a consumer-oriented food market with lower safety risks. Cluster 2 suggest that changes are necessary, whereas members of cluster 4 are louder in demanding improvements. It is necessary to explore the roots of cluster 3's resigned attitude.

Tables 5 and 6 summarise the distribution of agreeing and disagreeing responses regarding food safety and the necessity of changes and improvements.

Table 5
A summary of respondents' view on food safety

	Q28.1	Q28.3	Q28.4	Q28.5	Q28.7	Q28.8	Total
Safe	71.30%	46.50%	34.10%	23.40%	56.70%	33.80%	44.20%
Not safe	28.70%	53.50%	65.90%	76.70%	43.30%	66.20%	55.80%

Source: own research

Table 6
A summary of respondents' opinions on food quality control

Opinion on food quality control	Q28.2	Q28.6	Q28.9	Q28.10	Total
Adequate	34.20%	34.90%	23.50%	22.40%	28.80%
Inadequate	65.80%	65.10%	76.50%	77.60%	71.20%

Source: own research

Table 5 demonstrates that 44.2% considers food safety adequate, whereas 55.8% responded that they are not safe enough. The results in Table 6 show that 28.8% of the respondents consider the level of food control to be rather good, while 71.2% disagree.

3.2.2.6 Consumer Awareness Survey

I examined the food consumption characteristics of awareness along three dimensions. The results are summarised in Table 7.

Table 7
Results of the cross-tabulation on health and environmental awareness among all respondents and by gender.

	Females %			Males %			All population %		
Item	**Yes**		**No**	**Yes**	**No**		**Yes**		**No**
Q23.	66.3		33.7	34	66		51.4		48.6
Q25.	63.7		36.3	28.6	71.4		48.4		51.6
Q26.	34.1		65.9	24	76		29.6		70.4
	yes	**somewhat**	**Unknown**	**yes**	**somewhat**	**Unknown**	**Healthy**	**No chemicals**	**Unknown**
Q24.	16.1	18.5	65.4	16.7	12.6	70.7	16.4	15.8	67.9

Q23: Is it important to you that the food you buy is good for your health?
Q24: What does "organic food" mean to you?
Q25: Do you consider environment protection when purchasing food?
Q26: Do you think your food purchase choices can contribute to protecting the environment?

Source: own research

The following three aspects were examined.

- I drew conclusions about health awareness based on two direct questions. I also observed consumption data and attitudes towards some products considered nutritionally preferable.
- Two questionnaire items focused on environmental concerns.
- Ethnocentric considerations were examined using questions about opinions regarding locally produced and imported food items.

In two aspects (Q23 and Q25), supportive and negative responses are almost evenly distributed.

However, there is a significant difference and moderately strong correlation by gender: two thirds of females consider the factors important, whereas only one third of males agree. Women have higher quality expectations and are more aware of the need to protect their health and, at the same time, the environment. There is pessimism when looking at questions on the awareness of organic food and the influence of pollution on the environment, where both sexes scored similarly.

Looking at the impact of other demographic factors on awareness, the following summary conclusions were drawn:

- Health awareness reflects traditional approaches and attitudes: the population is not ready for exposure to the possible perils and unhealthy consequences of their food choices.
- In general, the level of education in the population is low, and the young generations receive hardly any instruction or information about the basic concepts of healthy nutrition, which is now quite widespread in more developed nations.
- Due to the general lack of information, the population follows traditional models and beliefs; as most of them live on large households, they adopt and adapt to the behaviour patterns and consumer habits of more elderly family members.
- It is dominantly “matriarchs” who make consumer decisions and are responsible for feeding all family members. This traditional role and responsibility mean that they have a leading role in providing healthful options to their family members.
- Consumers are unlikely to renounce favoured food items because of environmental considerations, even if they are aware of sustainability constraints.
- The country is visibly missing a system of food quality assurance and control, which would provide checks, standards and guarantees, as well as disseminate information regarding healthful choices and organic ingredients, using a widely known and accepted annotation system.
- External factors are likely responsible for lack of consumers who would prefer healthful choices but are prevented by narrow range of options.
- Considering healthful choices important and actually choosing healthful products are correlated.

Regarding ethnocentric considerations, Q21 explored preferences of locally produced or imported food. The majority indicated preference for *locally produced* (31.2%) or responded that it *does not matter whether local or imported (*64.9%). Only 4% had a clear preference for imported food. Figure 13 summarises the corresponding data.

Respondents marked 1.3 responses on average, meaning, they selected 1 or 2 possible reasons out of the listed 5. 22% say imported foods are of better quality. The top answers refer to the *lack of similar locally produced items* (42.9%) and the similar quality of locally produced and imported food (66.8%).

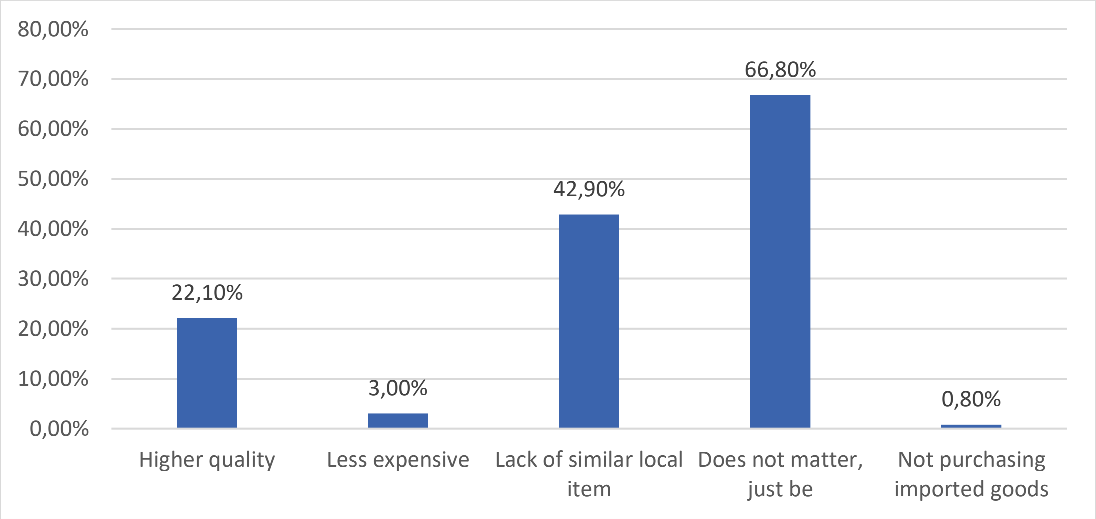

Figure 13
Reasons for purchasing imported food (Q22 1-5; N:682)

Source: own research

Conclusions based on the distribution of responses to ethnocentric thinking:

- Respondents do not prefer imported food.
- The overwhelming majority do not think imported food is cheaper, nevertheless, almost everybody consumes them.
- Those who prefer imported food usually consider them to be of better quality, which is of course a reason and motivation to choose these items.
- The majority are motivated by factors typical of societies with impoverished consumers and limited supplies: people purchase and consume whatever is available and affordable.

Since local suppliers are unable to meet demand, there are significant external obstacles to ethnocentric considerations and the preference of local items, and it is unrealistic to expect them to appear in practice.

3.2.2.7 Diversity of food consumption

In the international literature, the diversity of food consumption is an important qualitative indicator of consumption. For the current research, I presumed that consumers who purchase more kinds of food regularly tend to consume more diverse dishes, therefore, have higher quality nutrition. 38 food groups were compiled for the purposes of this survey, and respondents selected frequency of purchase on a five-point Likert scale (*daily, 1-2 times per week, weekly or fortnightly, monthly, less frequently*). Non-buyers could also express their attitude towards the possibility of buying (positive: never bought but would like to; negative: never bought but would not like to).

The lowest frequency I have yet to consider regular was the "monthly" response. Those who bought less frequently were assigned a value of "0" for the food group in question, and those who bought regularly were assigned a value of "1". As a second step, the 38 food groups were summed to give a percentage measure of dietary variety, the categories of which are illustrated in Table 8. Each category reflects a different range of products purchased per 25% of the total.

Table 8
Categories of food purchase index

Categories	Values (%)	Description
1.	0-25	Absolutely not diverse
2.	25-50	Not diverse
3.	50-75	Diverse
4.	75-100	Very diverse

Source: own research

Further cross-tabulation analysis of the variability categories for gender revealed a significant ($p<0.01$), moderately strong (Cramer's V: 0.543) relationship with Khí2 test. The purchase index of male shoppers is concentrated in categories 1 and 2. It would be expected that women, on the other hand, would appear in greater numbers in the much more favourable categories 3 and 4. Figure 14 illustrates the results. It shows that just over 10% of women reach the highly diverse category, with over 34% of women in the below 50% range.
Only 8% of all respondents achieve a diversity index over 75%. Examining the cumulative distribution, 54% of the population can be classified in the two least varied categories, suggesting a serious nutritional inadequacy in the population.

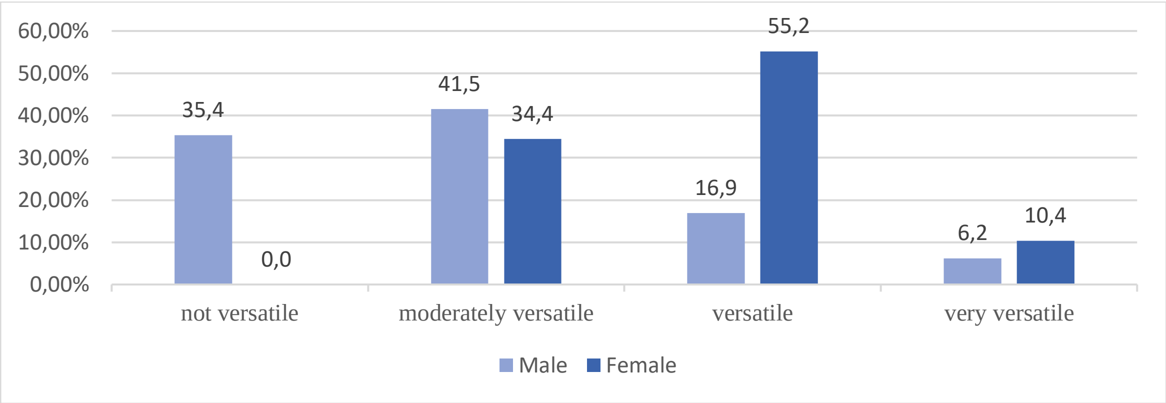

Figure 14
Gender distribution of food purchase index categories (N:559)

Source: own research

The spectrum of food consumption for a modern, health-promoting dietary structure can be summarised as follows.

- Foods of plant origin are clearly ahead of foods of animal origin in both breadth and frequency of consumption.
- The consumption of less processed, fresh, raw foods is more widespread than that of processed products.
- The primary source of calories in the diet comes from the consumption of complex carbohydrates, with proteins taking a back seat.
- The primary source of protein is less valuable plant protein.
- Fats are typically vegetable oils, with olive oil being used to a lesser extent. Animal fats (bacon, poultry fat) are not used for cooking or frying.
- Functional and organic foods and vitamin preparations are consumed only by a very narrow segment of the market. However, a positive attitude towards these products can be detected among a significant proportion of non-consumers. The factors behind this underconsumption need further analysis.

- Food consumption is not diverse. Just over 8% of those surveyed regularly buy at least 75% of the food groups listed, which can be detrimental to adequate mineral, essential amino acid, trace mineral, vitamin intake.
- There are significant differences in consumption between white bread, white sugar, milled rice and their nutritionally more beneficial 'counterparts' (wholemeal bakery products, brown sugar, paddy rice), which may be partly due to a lack of up-to-date scientific knowledge and partly due to barriers to access.

Further, more detailed studies are needed to better understand the composition of the diet, the underlying motivations, and the external and internal determinants.

4. CONCLUSIONS AND SUGGESTIONS

Based on the results of my secondary and primary research, the validity of my hypotheses was as follows.

Table 9
Evaluation of hypotheses

Hypothesis		Result
H1	The economic and political processes of the past decades have negatively influenced the current state of the food economy and its position in the national economy.	Confirmed
H2	The purchasing frequency of the population of Luanda is below that of developed countries.	Confirmed
H3	Consumption is primarily for functional purposes, with emotional motivation factors taking a back seat.	Confirmed
H4	Consumers' knowledge of food is poor and they perceive a need for more relevant information. In the current situation, they rely mainly on the opinions of themselves, their family and friends.	Confirmed
H5	The main determinants of choosing the place of purchase are:	
	H5 a) accessibility	Confirmed
	H5 b) Affordability	Confirmed
H6	Respondents' opinions on the food safety of the products they are offered to buy:	
	H6 a) The majority of respondents consider the food offered for consumption to be safe.	Rejected
	H6 b) The majority of respondents consider that measures should be taken to improve food safety.	Confirmed
H7	Certain elements of consumer awareness are present in the sample.	Confirmed
	H7 a) Behavioural manifestations of health awareness are limited	Confirmed
	H7 b) Behavioural manifestations of environmental awareness are limited.	Partially confirmed
	H7 c) Behavioural manifestations of ethnocentric awareness are limited.	Confirmed
H8	Diversity of food consumption is low, with more than 50 percent of respondents not buying varied food	Confirmed

Source: own research

Secondary research provides a clear description of the processes leading to the current state of affairs by exploring historical aspects, longitudinal and cross-sectional analysis of the macro and food economy. The main conclusion that can be drawn from the data is that the food sector is in need of fundamental and comprehensive reform. The remaining elements of the successes of the past need to be salvaged in order to build on them, by introducing new knowledge and technologies, to re-establish the country's own competitive and sustainable sector strategy and to lift it out of its marginalised position. The process is underway, with government support. The first indicators show the positive effects of economic diversification. Oil exports will remain an inescapable source of state revenue for decades to come, but import dependence, especially food imports, can be greatly reduced.

Another conclusion that can be drawn from the secondary research is that Angola is undergoing demographic, social, technological, cultural and social change. The pace of change is rapid, but it is also very uneven from one region to another. The winners from the oil economy are emerging on the demand side of the market, forming a new, more affluent and more demanding social class with new consumer needs.

For a number of reasons, the structure of food purchase differs significantly from that in developed countries. The research has shown the most typical purchasing patterns that local populations can use to best cushion the negative effects on their own consumption, reducing perceived risk. The knowledge gained from a consumer-centred perspective can give a competitive advantage to rival businesses, even in demand (unsaturated) market conditions.

Consumption motivations have been pushed towards functional consumption for economic and social reasons, with the eclipse of the individual's internal (health, psychological, sustainability, etc.) drives, and a great dissonance between needs and opportunities. A serious problem is the lack of information and modern nutritional knowledge. In these communities, chronic diseases, mostly of nutritional origin, which are common in developed societies, are still rare, and it is therefore important to study the specificities and advantages of traditional nutrition over the modern food industry's offer. The aim is to give everyone access to the knowledge needed to avoid chronic conditions such as obesity, high blood pressure and diabetes, which are already widespread in developed societies, by learning from the bad practices of these societies.

No exporter should think that anything can be sold to developing countries! Import requirements and their official control are becoming stricter, and my research has shown that a significant proportion of consumers express dissatisfaction with the safety and quality assurance of goods. As the solvent demand increases, it is expected that the trend in consumption will be more and more to seek quality.

My primary research has shown that a conscious approach to consumption is already present in the group under study. Many of them are concerned about maintaining their health, which is a key factor in a country with an underdeveloped health system. They strive to achieve this, but face many obstacles. Ignorance and misconceptions, family traditions, good and bad practices are inherited and mixed with a lack of education in schools and knowledge about food and eating from here and there. They are also confronted with the high cost of food that is considered healthy and of a varied diet. Speciality and dietetic foods are accessible to far fewer people than would be expected in the population concerned, as they are available in very few shops. The concepts of organic food (functional food) are poorly understood, product labelling is incomplete and the range of products is narrow. Consumption of vitamins and food supplements is minimal among those surveyed.

The situation is similar for environmental awareness. In conclusion, consumers do not believe that they can positively influence the state of the environment through their purchases. Developing countries are (or will be) exposed to large amounts of waste from imported products and newly developed local processing technologies. The disposal, environmentally sound disposal or reuse of non-degradable waste is not addressed, and consumers are not aware of the risks arising from its management (eg. incineration, burial). The objective for decision-makers and enforcement bodies should be to promote the adoption of environmentally friendly technologies in the food sector. In addition to education, the public should be informed through the useful and responsible use of traditional and electronic media to raise awareness of responsible consumer behaviour. This is the only way to prevent the irreversible environmental damage that has occurred in developed countries.

The primary research will also result in a positive attitude towards domestic products. Locally produced food is not only accepted but also trusted. Ethnocentric attitudes are also hindered when consumers are confronted with insufficient domestic production and are forced to buy imported products. Imported products are seen by many as a "necessary wrong", which they expect to be replaced by increased domestic production.

In conclusion, the feedback from the research participants provides us with a valuable snapshot of food consumption, the functioning of the food chain, consumer perceptions and behaviour. The sustainable use of abundant renewable natural resources (wind, water, solar energy, clean rivers, unpolluted soil) is a means of preserving national wealth, which, in the light of global consumption trends, can provide a competitive advantage to developing countries that are lagging behind in technological development. A holistic approach to the food economy, from ensuring the conditions for production to assessing the feedback from actors in the food chain, can ensure a modern, consumer-centred approach to the sector, which is competitive in external markets.

In my plans for the future, in order to broaden the horizons of further research, it would be necessary to explore not only food buyers' but also food distributors' views on market conditions. Knowledge of the needs and problems of businesses operating in different formal and informal food outlets, under different circumstances, is essential to assess the potential of the supply side of the market. I am not aware of any recent or ongoing research among producers, wholesalers, retailers, market vendors, owners of supermarkets and hypermarkets, or employees with (out) commercial qualifications.

The change in the direction of economic policy that started in 2017 is spectacularly reshaping the structure of the food market. The impact of the government's measures to promote domestic food production and raise consumer awareness could be assessed in the near future.

It would be essential to explore regional nutritional inequalities in the country, to compare the consumer behaviour of people living in towns and rural areas in provinces other than the capital, which would provide a snapshot of socio-economic conditions through nutrition, the diets of the population in the regions most at risk in terms of food safety and food security, and could form the basis for future studies.

It would be instructive to analyse the impact of the ongoing COVID-19 epidemic on consumer behaviour. Changes in purchasing habits in response to external pressures are generating unmet demand on the demand side for purchases that do not require face-to-face contact, which is accelerating the pace of e-commerce penetration and changing market conditions, forcing the supply side to react.

5. NEW SCIENTIFIC ACHIEVEMENTS

The novel findings of my research are summarised in the following points.

1. My research has confirmed that the needs of the majority of food consumers are not met by the services provided by the food market.

I have shown the existence of a gap between consumer needs and opportunities in terms of perceptions of accessibility, quality and control, affordability of volatile food prices, and variety of consumption. There is also a tendency to match purchases to the time of earning an income, with a predominance of demand for products with a long shelf life, bought in bulk for several weeks, to provide basic needs. The results were verified using univariate (frequency analysis, calculation of means) and bivariate (Khí2 test, Cramer's V, analysis of variance - ANOVA) methods.

2. I showed that the motivations for shopping are primarily concerned with providing functional components (priority of using material resources for food purchase, avoiding hunger, and storing food if possible).

My questionnaire survey confirmed that the physiological level (the lower level of Maslow's hierarchy of needs) is still dominant in terms of consumption motivations. Using the rank correlation method, I showed that the higher, security level motivations are still weak, which was also shown by the low scale weights.

3. I identified consumer clusters according to their perception of food safety and controllability. I determined the demographic profile of each cluster.

Using a multivariate (principal component, KMO, Bartlett test, followed by cluster analysis) method, I detected two principal components of food safety perceptions, and, in a second step, four distinct clusters of the population under study. By correlating the principal components with demographic data, I constructed a demographic map of each consumer cluster, indicating the dimensions of consumer thinking along the two axes of food safety and control/sanctions.

4. I have demonstrated the presence of three dimensions of consumer awareness, exacerbated by the inadequacy of the supply side of the market. I have pointed out that health awareness and ethnocentricity are part of traditional consumer thinking, which has limited potential. I concluded that a more precise definition of environmental consciousness requires further investigation.

My results from frequency studies and khí^2 tests demonstrate that traditional dietary patterns are strong and that the majority of consumers are not aware of the basic concepts of healthy, environmentally friendly consumption. Positive attitudes towards domestic food are measurable.

5. I have confirmed that the range of foods consumed regularly, i.e. the variety of meals, is low in the study population.

I used Likert scale and indexing method to assess the composition of diet, frequency of purchase. I have shown that modern, health-conscious nutrition is not achieved even among the more affluent social groups.

6. A LIST OF PUBLICATIONS RELATED TO THE TOPIC OF THE DISSERTATION

6.1 Publications in Hungarian

Books and book chapters

Manuel, T., 2019. Gazdasági válságok Angola egyes makroökonómiai mutatóira gyakorolt hatásai. In: B. Almádi, A. Lajos & K. S. Morauszki, szerk. *Folyamat - Kapcsolat - Menedzsment (PRM: Process Relationship Management).* Gödöllő: Szent István Egyetemi Kiadó, pp. 57-70.

Manuel T., Juhász P. G., Szilágyi T. P., Vinogradov Sz., Almádi B., 2017. Fogyasztói magatartás vizsgálata a világ egyik legdrágább országában, élelmezésbiztonság és élelmiszerbiztonság Angolában. In: Csiszárik-Kocsir Á. szerk. *Vállalkozásfejlesztés a XXI. században. VII. tanulmánykötet.* Óbudai Egyetem Keleti Károly Gazdasági Kar. pp. 401-414. 14 p.

International conference presentations

Manuel, T., 2016. A kávétermesztés gépesítésének adaptációja Angolában. XXI. Fiatal Műszakiak Tudományos Ülése, Kolozsvár, 2016. március 16-17.

Manuel, T., 2017. Disszonanciát keltő marketing kommunikáció hatásának elemzése. Tavaszi Szél konferencia, Miskolc, 2017 március 31-április 2

Publications in international conference manuals

Manuel, T., 2016. A kávétermesztés gépesítésének adaptációja Angolában. In: E. Bitay, szerk. *A XXI. Fiatal műszakiak tudományos ülésének előadásai. Műszaki Tudományos Közlemények 5.*. Kolozsvár: Erdélyi Múzeum Egyesület, pp. 397-400. Lektorált közlemény.

Manuel, T., 2017. Disszonanciát keltő marketing kommunikáció hatásának elemzése. In: G. Keresztes, Z. Kohus, K. Szabó P. & D. Tokody, szerk. Tavaszi Szél Konferencia 2017 Nemzetközi Multidiszciplináris Konferencia Tanulmánykötet vol. II. Budapest: Magyar Doktoranduszok Országos Szövetsége, pp. 458-470.

Manuel, T., 2017. Disszonanciát keltő marketing kommunikáció hatásának elemzése. In: G. Keresztes, Z. Kohus, K. Szabó P. & D. Tokody, szerk. Tavaszi Szél Konferencia 2017 Nemzetközi Multidiszciplináris Konferencia Absztraktkötet Budapest: Magyar Doktoranduszok Országos Szövetsége p. 259.

Manuel, T., 2018. Vásárlói döntéshozatal vizsgálata egy feltörekvő gazdaság élelmiszerpiacán. In: B. C. Illés, szerk. *Gazdálkodás és szervezéstudomány: új kihívások az elméletben és gyakorlatban című nemzetközi tudományos konferencia tanulmánykötete II. kötet.* Gödöllő: Szent István Egyetem, pp. 663-671.

Publications in Hungarian periodicals

Manuel, T., Lehota, J., 2020. Vásárlói döntéshozatal vizsgálata egy fejlődő gazdaság élelmiszerpiacán. *Gazdálkodás 64. (2), pp. 103-116.*

6.2 Publications in foreign languages

Conferences abroad

Manuel, T. & Almádi, B., 2015. Possibilities for a post war rural economic development in Angola. *Sustainibility of Rural Areas in Practice (SURAP) International Scientific Conference, 3-4th of December, 2015.* Nitra POSTER

Publications in conference manuals abroad

Manuel, T., 2016. Boomerang effect of a negative campaign - a case study from the market of beverages. In: E. Horská & Z. Kapsdorferová, szerk. *Agri-Food Value Chain: Challenges for Natural Resources Management and Society.* Interntional Scientific Days 2016, Nitra: Slovak University of Agriculture, pp. 850-857.

Manuel, T. & Almádi, B., 2016. Possibilities for a post war rural economic development in Angola. In: L. Mura, M. Bumbalová & M. Gubánová, szerk. *Sustainibility of Rural Areas in Practice (SURAP). Conference Proceedings from International Scientific Conference 3-4 December 2015.* Nitra: Slovak University of Agriculture. pp. 338-345

Manuel, T., 2017. Analysis of Main Factors of Food Customer Behaviour. In: I. Košičiarová & Z. Kádeková, szerk. Book of Scientific Papers of International Scientific Conference, Managerial Trends in the Development of Enterprises is Globalization Era. Nitra: Slovak University of Agriculture, pp. 696-705.

Publications in periodicals abroad

Lehota J., **Manuel T.,** Rácz G., 2014. Focus points of health tourism in the view point of changing customer values. *Applied Studies in Agribusiness and Commerce 8: (4) pp. 23-29.*

Csíkné Mácsai É., **Manuel T.**, Rácz G., Komáromi-Gergely A., Lehota J., 2014. Food Purchase Habits in Field of Direct Sales. *Journal of International Scientific Publications: Agriculture and Food Vol.2.* International Scientific Publications pp. 480-491.

Manuel.T., 2020. Current Situation and Trends for Food Security in Angola. *Vadyba Journal of Management № 2 (36)* Lithuania Business University ofApplied Sciences. *pp. 91-99.*