

**Czech University of Life Sciences Prague**  
**Faculty of Economics and Management**  
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Food and its social context: Factors that influence people's food choice. Case study – Russian Federation.

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# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

## DIPLOMA THESIS ASSIGNMENT

Aleksei Rinchinov

Economics and Management  
Economics and Management

Thesis title

**Factors Influencing Food Choice Among Young Generation (comparison of Czechia and Russia in a case of food shopping)**

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### Objectives of thesis

The goal of the thesis is to find out what factors influence young generation in term of food choice. The work will not only aim at finding these factors but will also measure their intensity or importance for young generation. A comparative approach utilised in the investigation of young people in Czechia and Russia will be used to provide detailed and in-depth views into the studies issues.

### Methodology

The thesis will start from literature review. It will outline how academic literature conceptualises various factors influencing food choice. The text will also address models presented in the literature applied to food choice. These models might be tested through the results of the research (not needed to be fully incorporated into the thesis). The empirical section will be based on the quantitative research conducted among Czech and Russian young generation (mostly students). Questionnaire survey will help to identify the factors influencing food shopping among young generation and will contribute to measure their strength. The findings will be juxtaposed with the models of the food choice found in the literature.

**The proposed extent of the thesis**

60-80 pages

**Keywords**

Food choice, young generation, influencing factors

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**Recommended information sources**

- Ayoura-Diaz, S.I. (2021): The Cultural Politics of Food, Taste and Identity: A Global Perspective. Bloomsbury Academic
- Corallo, A. , Latino, M.E., Menegoli, M., Spennato, A. (2019). A Survey to Discover Current Food Choice Behaviors. Sustainability 11 (18): Article Number5041
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- Sobal, J., Bisogni, C. A. (2009) Constructing Food Choice Decisions. Annals of Behavioral Medicine, 38: S37-S46 (Supplement 1)
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## **Declaration**

I declare that I have been using only the resources mentioned above to bring a topic of “Food and its social context: Factors that influence people’s food choice on bakery products.” As being an author of the bachelor thesis, I declare the thesis doesn’t break any copyrights and doesn’t correspond to any plagiarism.

In Prague on \_\_\_\_\_

Aleksei Rinchinov \_\_\_\_\_

## **Acknowledgment**

I would like to say the heartiest thanks to my family for the support and the help that has been a big motivation to write the Diploma Thesis of the given topic. Additionally, a big support was received from prof. PhDr. Michal Lošťák, who helped me with the topic and guided me throughout the whole process of writing.

# **Food and its social context: Factors that influence people's food choice on bakery products.**

## **Abstract:**

The Diploma Thesis investigates the behaviour of consumer to bakery products. However, the author has taken into consideration different factors that might influence the choice of bakery products. As the main tool, the author applies a survey with 9 questions of multiple-choice options and 5 questions of scaling method, where each question consists of different criteria that could affect the consumer's choice. The research was gathered for two different countries, Czech Republic, and Russian Federation. Theoretical parts cover all the factors that might influence the consumer choice. All the data obtained from a survey will be processed in Excel Software to either approve or reject the stated hypothesis.

**Key words:** Food, consumer choice, bakery, bread, price, quality, availability.

# **Jídlo a jeho sociální kontext: Faktory, které ovlivňují výběr potravin u pekařských výrobků.**

## **Souhrn**

Diplomová práce zkoumá chování spotřebitele k pekařským výrobkům. Autor však vzal v úvahu různé faktory, které mohou výběr pekařských výrobků ovlivnit. Jako hlavní nástroj autorka používá anketu s 9 otázkami možností výběru z více odpovědí a 5 otázkami metody škálování, kde každá otázka obsahuje různá kritéria, která by mohla ovlivnit výběr spotřebitele. Výzkum byl shromážděn pro dvě různé země, Českou republiku a Ruskou federaci. Teoretické části pokrývají všechny faktory, které mohou ovlivnit spotřebitelskou volbu. Všechna data získaná z průzkumu budou zpracována v Excel Software za účelem schválení nebo zamítnutí uvedené hypotézy.

**Klíčová slova:** Jídlo, spotřebitelský výběr, pekárna, chléb, cena, kvalita, dostupnost.

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## **1 Introduction**

The importance of bakery products in people's life is a very important intake. Historically, people used to bake bread in ovens and even on a fire and it became an important part of human's diet. Bread could be made in any shape with different flavours and typically made of accessible ingredients, which eventually help to fill nutrition gaps in a diet as well as helps to be fully satisfied and well-fed. However, not everyone prefers to eat bread or consume it daily. Some people might have an allergy or just don't like it. In general, it is recommended to consumer bread in the morning and as a snack. However, the excessive intakes of bread might negatively impact the human health, as any other type of product.

However, the consumer choice also depends on many factors such as: personal, cultural, social, and personal factors. That's why the author has covered a wide range of theoretical background in order to understand the consumer choice behaviour and potential factors that might influence the choice in general. Every consumer is either consciously or unconsciously tries to fulfill his/her needs, it is assumed that after purchase of a product, the consumer will benefit the most out of it. Bread/bakery products are consumed by billions of people around the globe and has a vital part of our daily dietary. The assortment has enlarged with different tastes, shapes and extra. People have more options to pick and choose to the point where it gets difficult. The price behaves accordingly and correlated with every factors it could, such as quality, assortment, and availability. That is the main reason of this diploma thesis. In order to find out, the author covers every single criterion which is supported by the theoretical framework of the different literatures. The whole thesis is divided into two parts, theoretical and practical, where all theory is based on the views of consumer behaviour, mentioned consumer models and other personal factors of human being. However, the practical part entails own research, where the author has conducted a survey in two different states, Russian Federation and Czech Republic. Both countries historically are used to consumer bread, hence the survey will be a useful tool to gather the data.

## **2 Objectives and Methodology**

### **2.1 Objectives**

The objective of the thesis is to discover the factors that might affect the food choice within bakery products in two countries, Czech Republic, and Russian Federation. The author also wants to analyze what factors influence the most the consumer behavior. The factors that author considers are personal, social, and cultural factors. However, the other factors that usually impacts the consumer's choice are also considered at those are: price, assortment, quality, and availability.

### **2.2 Metodology**

The main tool which is used in the Diploma Thesis is a survey of 9 questions of multiple-choice options and 5 questions of scaling method, where participants can rate from "Strongly agree to Strongly disagree". All the data were processed in Excel. The data was obtained online. There were two different countries analyzed and for both authors stated the same hypotheses:

H0: There is no dependency between gender and consumption of food. bread/bakery products.

H0: There is no dependency between age and consumption of food bread/bakery products.

H0: There is no dependency between occupation of students and consumption of food bread/bakery products.

H0: There is no dependency between income and consumption of food bread/bakery products.

The sampling size of each country is 240 participants.

The author uses the contingency table, where based on the participants answers the data will be obtained

### Two-Way Contingency Table (2x2)

Firstly, the hypothesis needed to be set, starting that there is no relationship between 2 variables and alternatively, there is a relationship between two variables, at 0,05 alfa level.

Contingency table:

<b>Var A/Var B</b>	<b>B1</b>	<b>B2</b>	<b>Total</b>
<b>A1</b>	a	b	a+b
<b>A2</b>	c	d	c+d
<b>Total</b>	a+c	b+d	n

There are, however, more that (2x2) tables in the obtained research, which is demonstrated below, (Rn X Cn).

<b>Var A/Var B</b>	<b>B1</b>	<b>B2</b>	<b>...</b>	<b>Bj</b>	<b>Total</b>
<b>A1</b>	<b>n11</b>	<b>n12</b>	<b>...</b>	<b>n1j</b>	<b>n1.</b>
<b>A2</b>	<b>n21</b>	<b>n22</b>	<b>...</b>	<b>n2j</b>	<b>n2.</b>
<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>
<b>Ai</b>	<b>ni1</b>	<b>ni2</b>	<b>...</b>	<b>nij</b>	<b>ni.</b>
<b>Total</b>	<b>n.1</b>	<b>n.2</b>	<b>...</b>	<b>n.j</b>	<b>n</b>

Chi-Square Test of independence:

Where: Expected frequency is calculated by

Expected Frequency = Row Total \* Column Total/ n, where n – is the number of observations

And the following formula find the Test Statistics because the sample size is 240 participants.

Decision if  $E_{pi} > 0,05 > H_0$  is accepted, there is relationship between two variables. (Hlavsa & Pacakova, 2020).

### **3 Literature Review**

This chapter will provide an overview of the literature addressing various factors influencing the choice of the food among the consumers. Highlighting main ideas in the studied text will provide conceptual framework for empirical research.

Carolyn and Rogus (2014) is one of the studies revealed the factors which influence directly on the food choices of the population. The research which was described in their article did not concern Russia and the Czech Republic, but it helps to understand what factors we needed to take into consideration when analyzing the topic of the thesis. Among all these factors the authors may name different social elements like ethnic specifiers and marketing tricks, which are very important, of course, but they stress that economic drivers and the aspect of income are no less important as factors which might have place in our society.

Suresh, Shailendra and Hallam (2016) highlighted the idea to combine the fields of economics and nutrition together to address the problems of nutrition, economy, and politics. Significant chapters of their books are dedicated to such problems as: studying current tendencies and challenges which nutrition policy faces across the world; considering macroeconomics and microeconomics aspects. The conclusion of the book follows the concept that with understanding the nutrition policy process in which multiple actors and players operate from the global to local levels, we should use the methods demonstrated in the chapters of the book.

Bitler and Wilde (2013) stated the importance of relations between nutrition and sustainable economy and vice versa. The authors claim that economic conditions influence nutrition. They showed this correlation by citation the book by Fogel (2004) in which the latter proved his hypothesis about the importance of food in economy. In other words, the improved nutrition was a decisive factor for successful economic development in Europe and the United States during the 19th and 20th centuries. They mostly based their research on the highly developed countries (mainly, on the example of the USA), but their concepts might be applicable for the Russian Federation and Czech Republic.

Okrent and Alston (2011) stated that prices and incomes are leading determinants of food choices, dietary quality, and household food security. On the basis of the aforementioned books and articles, it should be concluded that the analysis of the current economic situation in the country and incomes of the population will help to grasp the understanding of what should be done with the condition of nutrition in the country, to what consequences the current economic policy of the state will lead and how it affects socioeconomic process of the society of the country.

Other sources used in the thesis cover such important topics as how the economics of nutrition influences behavior of people, health, and healthy lifestyle of the population. The emphasis in the countries of Europe, for instance, is already being placed not on protein and “energy-giving” products, but on a healthy diet, even at the expense of energy. Epidemiological and scientific evidence demonstrate clear links between food and health maintenance development. In developing countries, morbidity and mortality are directly related to protein and energy malnutrition, while in many Western countries, health officials have begun to actively promote the consumption of healthy foods while reducing the amount of energy in the diet. It is necessary to study in a broader and more scientific way the connection between medicine, which establishes proper nutrition, and economics, because there is still the question of how to optimize the use of scarce resources. Big food companies may play a decisive role in their ability to influence the penetration rate of cost-effective health-enhancing products and finally focus on the health food.

However, there are still some issues which the authors want to discuss. To take as an example, it is important to define nutrition economics as the discipline dedicated to research and characterize health and economic outcomes in nutrition for the benefit of society. The paper of Shcherbak (2016) reveals the relationship between the improvement in human diet and the transition to democracy. According to him, the politics is ruled by diet of the population. People who consume more food which contains protein tend to support democracy and to establish democracy in their countries. Moreover, the author states that calories, protein, and food which contain more fat affect political process and democratic transition as well more than economy does. Sustainable nutrition level of the population leads to the economic growth and modernization of the country. But the most interesting fact that was revealed by the author is that the whole political culture changes under the influence of diet. People tend to get away from more authoritarian type of regime to the more democratic one. With the change of diet, but not with the growth of income and GDP, people start feel better and try to protect their political rights in order to have better diet. The author proves all his statements by using a bunch of statistics models.

Kaplan (2019) gives a very original interpretation of the philosophy of nutrition. The author argues that there is no universal opinion about what we should produce and consume. This is a subjective concept, since a huge number of culinary practices, cuisines and tastes preclude the possibility of generalizing the experience of different people. Being an associate professor of philosophy, explores the philosophical aspects of food. It touches on the nature and meaning of food, its perception by consumers, social role, moral and political aspects. The author points out the connection between various disciplines in philosophy and the concept of food. He emphasizes that philosophy contributes to a broader understanding of food by answering questions: what food is,

how we perceive food, how we should prepare and eat food, how governments should regulate food, and why food is important to us. Research also covers topics such as culinary identity and authenticity, tasting and food criticism, and consumerism and conformity.

In this book, the most useful for research are the chapters dealing with food justice and food sovereignty. Kaplan (2019) says that the food system is directly related to political and economic institutions. There are also a lot of so-called food injustices. Lack of safe, adequate, and culturally appropriate food manifests itself in injustices in other spheres of life, for example, in housing and employment. Another important aspect of his explanation is the “authenticity” in terms of existentialism. It affects what kind of people we are. Typically, the cuisines of our cultures are crucial to one’s experiences. The smells and tastes shape our identity and relationship to other people and cultures.

Long (2017) analyzes the relationship between cultural tourism, ethnic food business and cultural policy. He gives several definitions of the concept of "cultural policy", noting that in almost all of the quotes she cited, it was recognized that cultural policy covers issues of the right to determine the meanings and ideas about food and eating, how these concepts were established and how they are used. These are important aspects as cultural food policy is determined by the authorities and affects the geographic access to food or its pricing. Observing culinary tourism and ethnic food through the lens of cultural politics, the author stresses the great role of power in how these concepts are defined and applied by both academics and the public. She says that the culinary tourism industry currently plays an important role in the global economy. In this regard, it identifies several problems and offers examples of their solutions. For example, is it possible for culinary tourism to strengthen people's bonds with their national roots and identities through cooking and eating; how to properly integrate national cuisine into the economy, for practical and business benefits? The first step in considering cultural politics is to recognize that food itself is complex, intertwined with all aspects of life, and has many meanings. It is also necessary to consider the complexities of ethnic identity. In other words, ethnic groups are made up of people with different interpretations of identity, which extends to their views on food. L. Long Culinary tourism must recognize this diversity, allow different voices to be heard and play a role in the selection and presentation of ethnic products.

Caldwell (2021) conducts research on food products at the intersection of related disciplines: anthropology of nutrition, sociology, geography. The author questions the general understanding of food and identifies new trends that will define this area for years to come. This work is useful for this research on this thesis, as it covers a wide range of theoretical perspectives and disciplinary approaches, which provides the necessary scientific and theoretical basis.

Ayoura-Diaz (2021) examines the social, cultural, and political processes that shape the experience of taste. According to the book the notion of flavor involves all the senses and describes the multiple ways in which taste becomes tied to local, and cosmopolitan politics of identity. The study of different cases included various countries, such as Japan, China, India, the United States, France, Italy, and Poland. Chapters of the book discover how what answer might be used from the local side against food industry and how professional culinary practice has become the foundation for local identities. In socio-cultural dimensions the book examines the construction called “local taste”. Also, the question what is the connection between cultural and political preferences and meat consumption and vegetarianism? What is behind innovation and tradition, heritage and social class, popular food and authenticity, and street and restaurant food? In addition, contributors discuss how different food products-such as kimchi, quinoa, and Soylent-have entered the international market of industrial foods, connected different places, and shaped taste and political identities. The book simply discovers a new view on the problem of how food influences our cultural and political identity. How our tradition is affected by the local food and the “local taste”. And what influence big food companies and the process of internalization of food have on our food traditions and preferences.

### **3.1 Values, Consumer Behavior and Food Choices**

One of the central aspects of values and at the same time one of the reasons of why politicians and companies want to understand is the predictive power. That’s what this chapter will deal with. Understanding people’s values and understanding what consumer wants or what they desire. Rohan (2000) states that a link between personal value priorities, attitudes and behavior reflect the widely held assumption that people’s personal value priorities are being guided by their own behavior, or no conscious awareness. The persuasive value role in all value of human life has caused interests and desires of their particular role in various consumption context (Homer and Kahle, 1988).

Kahle (1988) mentioned a few reasons for this. First, as noted above, values help clarify our understanding of consumer’s buying motivation such as attitudes can explain brand and product choices, but it is not able to clarify why consumers evaluate products differently and thus prefer one to another). Second, value behavior linkages or value chains, such as Gutman’s means-end chains, which could disclose consumer’s adaptive engagement with a product, services, or choice. Consequently, third, it is possible to use value chains for developing advertising and communication programs that link, the product or service to consumer’s personal meaning and values at several levels (Reynolds and Gutman, 1988).



Fourth is tightly linked with a measure of advertising and communication effectiveness that can be improved by analyzing how well the communications actually cover the pursued personal values. To sum-up, there is ample evidence that discovering consumer's values, it is beneficial over and above, getting a deeper understanding of consumer's needs and wants.

### **3.2 Models of Food Choice**

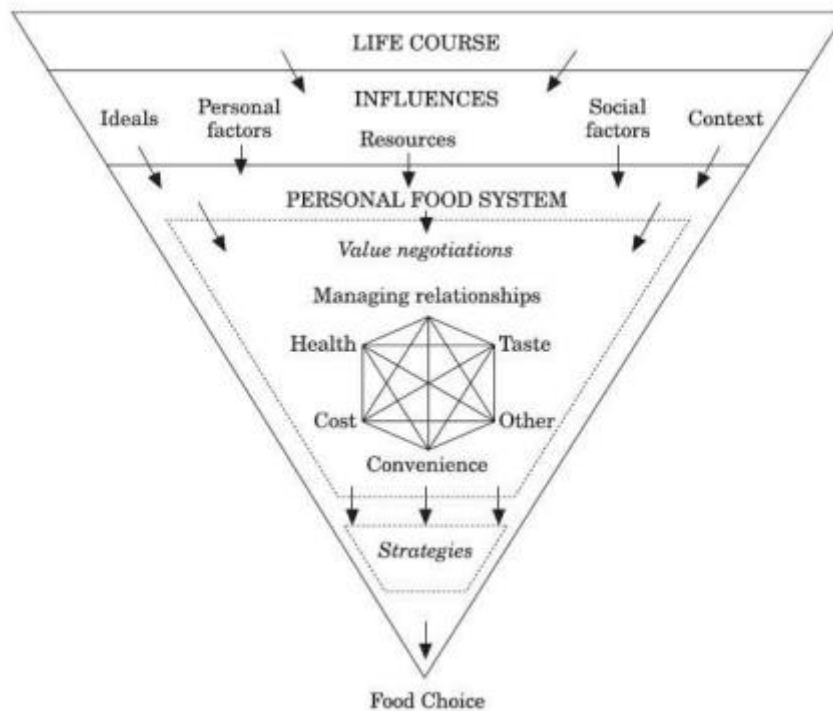
Due to complexity of food choice behavior and the intervening variables, there is no such model or theory which is commonly accepted for the food choice. There are many food models which will be presented in this chapter.

If people think of food intake and judge it as a main foundation to live and function, a simple mechanism that is merely based on physiological needs. Why do people, within the same culture and place and even with an identical market offer, demonstrate such different eating behavior?

In a review of physiological mechanism, I found an answer of food choice. Rogers and Blundell (1990) concluded that social factors play a crucial role in shaping preferences for food and that food choices will probably be guided by a valuation of individual that consumes a particular food. Eating as an action, is not about what people eat, but it also takes into consideration the facts of where to eat, how to eat and with whom.

Food choice, however, is not that simple meaning so to say, in countries of post-industrial food choice such as Switzerland, it is a complex and the food choice is influenced by a multi-interactive variable, such as personal level (ideals, resources available, monetary income). Social factors (relationships with other people, and the context of food choice itself, (i.e., physical surroundings and behavior settings) that explained by Sobal, Bisogni and Jastran (2001) and their structured model of food choice process.

**Figure 1: The Food Choice Model by Connors**



Source: Connors et. el., 2001, p.190.

The food choice process model demonstrates a relevant role of personal food systems and value negotiations within personal food systems. But it does not directly measure food choice behaviors and their relationship among personal values, nor does it indicate the importance of eaten food and food which was bought.

### 3.2.1 Socio-psychological food choice model

There is one way to reduce the complexity in food choice models is to take into consideration the social psychological core mechanisms, which lie deep in human behavior. Which entails the theory of planned behavior by Ajzen (1991) which had been used successfully to demonstrate and predict intentions of food choice and related behavior. (e. g. Conner, Povey, Sparks, James and Shepherd, 2003). They found that this theory of planned behavior has explained over 58 % of the variance in intentions to intake food five times a day, which consisted of fruits, vegetables and 33% of the variance in actual fruit and vegetable consumption measured one month later.

Nevertheless, the findings demonstrated that, generally, those relationships do not correspond to reality of attitude in relation to behavior, is less predictable and actual than the relation between attitude and intent of behavior. This led to the discrepancy of the theory focus of planned behavior on cognitive and rational impact on behavior, which considered to be effective components of

human behavior (such as sensory liking, habits, attitude, preferences) are meanwhile underrepresented.

The theory of planned behavior will provide the valuable insights into the determinations of food opportunities and its choice, which eventually will be linked with eating behavior and interventions – for example, motivation to eat more healthier or more of a sustainable eating behavior. Nevertheless, it largely disregards the motivation behind cognitively embedded attitudes, that complicate an understanding of change and reluctance to change.

### **3.2.2 Lifestyle and food behavior**

This is a different approach to reduce the complexity of food choice that is based on explanation of actual food behavior by internalized values that are inherent of an individual's lifestyle (Brunso, Grunert and Bredahl, 2001). They defined lifestyle as a system of person's preferences and the habitual use of declarative and procedural knowledge structures that intervene between abstract goal states (individual values) and situational based product perception and its behavior. (Brunso et. al., 2001). Which means, that personal lifestyle is supposed to be the translation of the abstract and global personal values into specific aims, as they are tightly linked with the behavioral routines to carry out goal directed action.

In fact, Brunso (2001) claimed that lifestyle related with food are a strict mediator of the correlation between personal values and situation-specific product perception and food behaviors, which means that personal values explain food-related lifestyle and as a chain-effect lifestyle predicts behavior. The theory and its findings consequently confirm that correlation between the rather abstract of personal values and concrete behavior which is linked by personal lifestyle. However, this particular framework doesn't consider the food-related values (instead it considers the food-related lifestyle, covering ways of cooking, shopping and purchase motives). It provides valuable insights on the mechanism of the values-behavior chain.

### **3.2.3 Context-dependency Food Choices**

Food choices differs among cultures and even within culture, and even more, within individual, depending on the food choice context or situation. Saba (2001) explained in his framework of cross-cultural differences in food choice, geographical differences in food consumption patterns across Europe have declined since the 1960s. He concluded that, fundamental differences will exist yet for a long time between the Mediterranean, Northern, and East-Central Europe diets. He compared six different cultures withing Western eating habits.

Fischler and Masson (2008) have found dispersive eating motives and differences in the role of meaning food in everyday life. For example, “in comparison to Americans, French eats smaller portions, take longer meals, consider food a more important part of life, worry less about the health effects of foods, organize its social life, and celebrate accordingly, and they are less receptive in terms of food of other cultures (Rozin, 2006).

Food preferences obviously vary within a culture, and even on the individual level, food decisions are not always consistent as well as attitudes of people and their motives, they might contain evaluations that are ambivalent and have mixed feelings, both positive and negative (Maio et al., 2003). In addition, he stated that consumers are always torn apart in between price and quality of product, the feeling of hesitation comes into its place, when it is about making the right choice, the taste cravings versus healthy aspects. As a conclusion by Connors (et al., 2001), food choice processes are very complicated and involve, dynamic and situational aspects.

Research of food choices should, however, take a cultural aspect into account, in order to understand the more clear and holistic understanding of food choice within a culture. It is very important to consider varieties of different everyday eating habits and food choices, to reveal the food choice patterns.

### **3.2.3 Buying food with a low involvement interest**

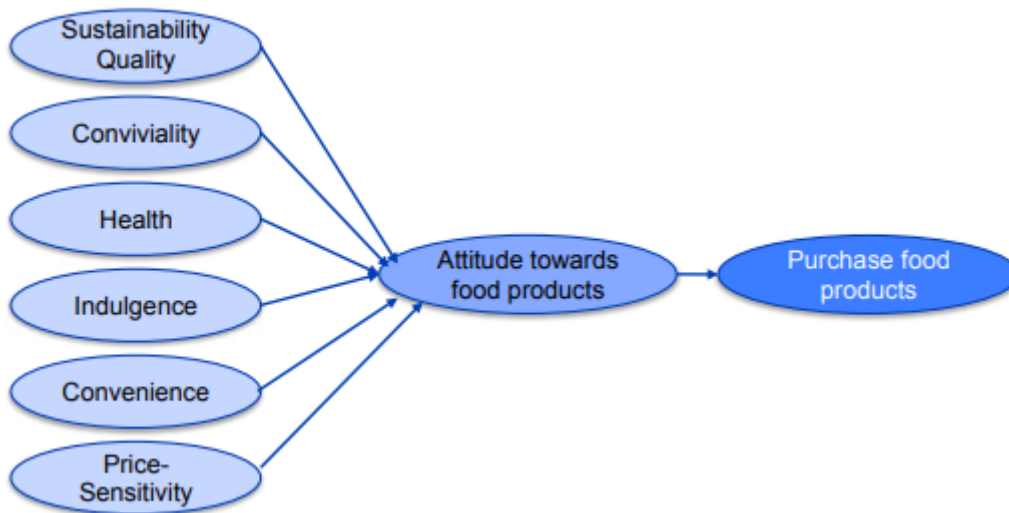
Tanner (2006) stated that the reasoning of the planned theory behavior does emphasize eating behavior is quite a habitual thing, and often does it elude rational thinking. Probably, because it is an everyday activity, people establish an eating routine with a repetition of a food consumption and eating context.

Bisogni, Sobal, Blake and Devine (2009) demonstrated that eating routines are embedded in our daily schedule of work, family, and recreation. They say that the regular eating practices enhance the quality of life and health for individuals and families, due to its predictability and stability. In fact, due to a reflective-impulsive model which was developed by Strack, Werth and Deutsch (2006) for consumer behavior, both of these components contribute to a stated behavior. The reflective component is based on a rule reasoning that generate explicit, propositional decisions. Meanwhile, the impulsive component works comparatively effortlessly, because information process is done automatically, without any impact of cognitive resources. That system works in the sense that saves mental effort and while executing the impulsive behavior. The most common examples of impulsive behavior are habitual consumption and impulsive buying process.

Habitual actions can derive from values that become central and are part of person’s self-concept (et., el. Werth, 2006). This is supposed with the premise that people’s central actions and values are prescribed repeatedly in different situations, which is a pre-step of forming a habit, where habits are formed on a base of sufficient and satisfactory repetitions in a stable context. If values can manifest themselves in habits, then it is feasible to assume that values can also influence eating behavior and at the same time might not have a direct effect, mediated by attitudes.

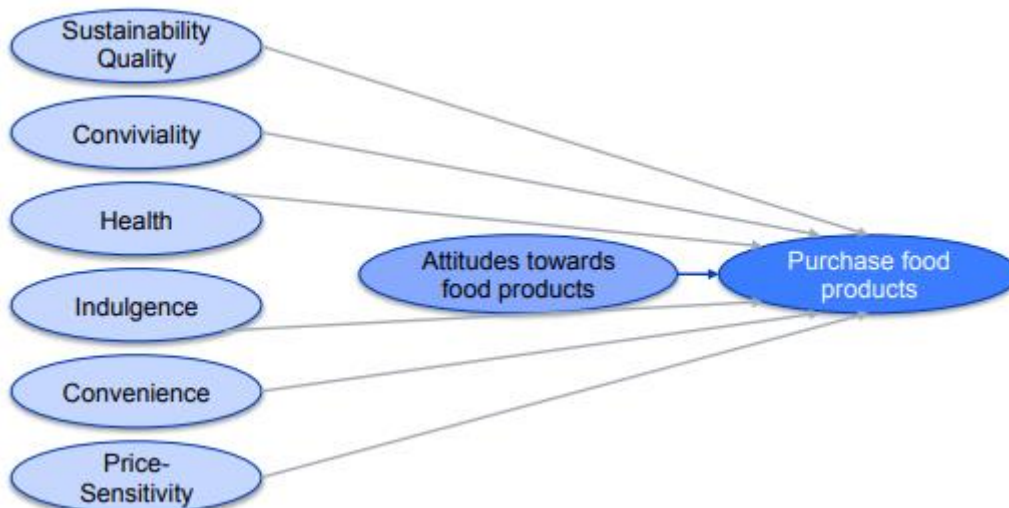
As a conclusion of different theories, based on the different theories about the value-attitude-behavior chain, there are at least three competing patterns of values on food purchase behavior. (See Figure 2, to 4.)

**Figure 2:Mediation Model, theory of Planed Behavior**



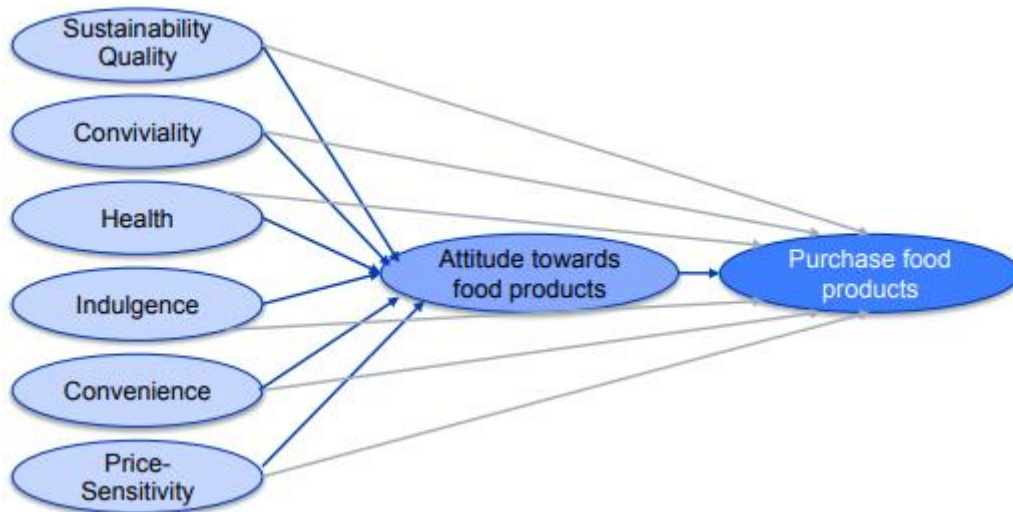
Source: own processing, based on Ajzen (1991).

**Figure 3: Direct Effects Model, values through attitude**



Source: own processing, Werth, (2006).

**Figure 4: Partial mediation model, direct and indirect effects on behavior**



Source: own processing, Bisogni, Sobal, Blake and Devine (2009).

#### Measuring Food-related values

There are however, too many measurement processes as there are theories about good choices. Regarding food choices, it could be distinguished by two main approaches. The first is (et., el. Sobal, 2009) and her existing model, framework, and theory (such as a theory of basic individual values, the theory of planned behavior and means-end approach) have been used and analyzed behavior of food and used the measurement models (such as List of Values, Schwartz value survey and extra). There are however, two different tools to work with, qualitative and quantitative tools. Secondly, new models to explain food choice have been developed inductively using almost exclusively research methods (e.g., food choice process model). The models assume that people actively construct their food choices based on cognitions and social experiment (Sobal et. el., 2009).

#### **3.2.4 Impact of Food-Related Values and Attitudes on Consumption**

Food-related values were hypothesized to influence attitudes and hence influencing food purchase behavior (Homer and Kahle, 1988). In other words, some food-related values were supposed to have an influence directly on behavior, omitting more cognitively and consciously represented attitudes (Strack et al., 2006). Hence, it would imply questioning central assumptions of planned

behavior theory (Ajzen, 1991) and substantiating the additional explanatory power of food-related values with regards to understand the behavior of food purchase.

Behaviour and consumer food choice is a complex action and in post-industrial countries such as Switzerland, Russia and USA. However, Russian is being challenged by post-industrial modernization on the logic of catching-up development.

To understand the food choice behavior, psychologists have investigated the antecedents of behavior. Attitudes, mood, and values towards consumed product, which predicts and explains consumer's choices, across products and services, including food product (Maio, Olson, Bernard and Luke, 2003) for food and attitudes relation, see (Verbeke and Van Huylenbroeck, 2009).

Maio et., ell (2003) stated that attitudes and values share the same conceptual features. Human attitudes are evaluative and tend to be subjective as well, and as a result might impact positively or negatively. Values, in contrast are abstract ideals that function as important, trans situational guiding principles in life. Whereas the variation of attitudes is related to evaluative dimensions, favorable and unfavorable. The characteristic aspect of a value is its variation in importance.

However, people differ in their values of priorities. It is supposed that the structure of value system of each human being is universal, which is why, values are called global values (Schwartz ,1992).

Feather (1999) argues that some value types may be partly indifferent with only a few associations, whereas other types have a high degree of differentiation with a complex network of associations. He believes that values are structured in a way of cognitive belief hierarchy, consisting of global values (as mentioned above) main specific, value and attitudes. There is a list of values that are assumed to influence food choice, quality, price, hedonism (e.g., taste), health and family time, to name only a few. Geographical variations in food consumption varies across the whole Europe, and has decreased since 1960's, there is a growing shared concern over diet and health, food safety and the environment.

### **3.3 Factors affecting the food choice**

#### **3.3.1 Price**

The price of food, or another terms, cost of food is the main determining factor, which affects some groups of the population, and some are not affected by that factor at all. Based on the finding of Mintel (2001) reports an ongoing shift in the fruit and vegetable market from loose to prepacked, and already-cooked products. Over 60 % of expenditures in the vegetable sector is now on prepared product. He claims that the production of such products is more expensive and still are in demand, regardless of its price and cost, people still buy it. Consumers are willing to pay extra

cost in a tradeoff for convenience. Nevertheless, obviously there are customers who are not ready to pay an extra-cost. Still, the price itself, has not been found the most influential factor on the food choice in the lower socioeconomic groups, as a reasoning, he claimed as a proof group of students and unemployed people. It has also been found that in some socio-economic groups, people just consume less fruits and vegetables than the higher socio-economic groups.

Another study was done in relation to the cost of food and the dietary food choice by (Mooney, 1990). He concluded that healthy diet is more expensive in monetary terms than alternative food choice. In his research, women were assigned to groups according to where they belonged to, which is called Healthy Diet Indicator (HDI). Its range was from 0 to 8, and group having 8 was the healthiest diet. Subjects with the healthiest diet spent 4 times more on fruits and vegetables than those, who had lowest healthy diet score. The results showed the significant difference in cost was found between HDI groups of 0 and 7, at 1.70 USD/diet and 660 USD/diet.

In the European study of a wide geographical variation existed as to the number of subjects who mentioned "price" as an important barrier to healthy eating. In the overall EU sample of 15 per cent, claimed "price" as a factor, but UK respondents were at the top range with 23 per cent of respondents have claimed that price was as a barrier of a purchase decision (Lappalainen., et., el. 1997). He claimed that it has been shown previously and demonstrated that those in lower socioeconomic group would and will consume less fruits and vegetables than those in higher socioeconomic groups (Ministry of Agriculture, Fisheries Food, 1999; Anderson and Morris, 2000). In order to increase the consumption within this groups, it is relevant to consider a price factor. Anderson and Morris (2000) showed a study of UK, with a conclusion that it would be right to focus on balancing of the perceived higher cost of fruit with less expensive vegetable-based dishes. Nevertheless, eating the vegetable-based dishes does not take too much of effort and experimenting with the new recipes and varieties of vegetable. In low-income households, that would be very risky to experiment with the new recipes, in case family don't like them, in case a substitutive meal must be found and, that might lead to an increase of cost for households. He found an optional and probably non-cost option for such type of consumers, by just visiting cooking-shops in order to try something new and decide whether it would fit them or not.

When households replace meat, fruits, vegetables and other micronutrient foods with high carbohydrate staples, their calories may remain above the minimum requirement, but macronutrient and micronutrient intake decrease, increasing the risk of stunted growth, micronutrient deficiencies and related these diseases. Resulting, for example, vitamin A deficiency (VAD) and iron deficiency anemia (IDA), the two most common nutritional deficiencies in the world - are caused by diets low in animal products, fat, and certain fruits and vegetables. VAD is



associated with impaired immunological function, increased risk of maternal and infant death, and visual impairment. IDA affects the physical performance of adults, as well as the cognitive and physical development of children. This is especially detrimental during pregnancy when women have an increased need for iron. Both disadvantages are associated with increased health care costs and compromised human capital (Horton and Ross, 2003).

If prices rise further and downgrading dietary quality is not enough, total caloric intake will be reduced. In addition to further increasing malnutrition, leads to reducing total energy intake also increases risk of health shocks. This is because inadequate dietary intake weakens the immune system and increases susceptibility to disease. Infectious disease, in turn, increases nutrient requirements and weakens the immune system. This vicious circle can begin when dietary intake is inadequate in terms of quality but still acceptable in regard to total caloric intake. The situation worsens once energy requirements are no longer met.

In addition to declining food quality and quantity, high food prices also have a secondary impact on households and individuals, which can indirectly affect nutrition (Thompson ,2009). The two most damaging are declining school attendance and reduced health care costs. As described above, infection increases malnutrition and vice versa. Thus, reducing health care costs implies an increased risk of malnutrition. The relationship between education and nutrition is more distant, but equally important, schools provide an important platform for nutrition education as well as direct interventions in nutrition. Both are especially important for girls, who, as described below, will have an important role to play in ensuring household food security in the future.

Another second-tier influence is the increased participation of women in the workforce. Mothers have been shown an effective care for their children in non-crisis settings, with a net positive effect (Ross, 2003). In contrast, when women seek employment in difficult conditions, such as those caused by a surge in food prices, the well-being of children, including nutrition, she is more likely to be affected. Hence Ross concluded that a busy person, depending on his daily tasks and duties, the price of any product might not be something that is directly influence purchasing power. At the same time, he questions the range of age, he is not sure whether young generation might imply for that particular conclusion.

Steenhuis and Waterlander (2011) found that consumer with a low level of income have higher price awareness value compared to the high-income level consumers, which means that the cost of food is much more of a concern for low income, and it significantly impacts the purchasing decisions. They also found another interesting result, that people who have diet restrictions, among 25-36 years old, are less affected by price in comparison to the ones who do not have any

restrictions. In that case concluded, the price is not important as the desire to eat healthy and limited number of calories (Pollard and Wardle, 1995). Therefore, decrease of prices for health food could be more effective way to increase consumption for healthy food, however, they claim it would be lasting, as the demand at one point will increase, hence the price for healthy products will increase as well.

Et., el. Furst (1996) interviewed random shoppers and found that purchasing decisions are mostly based on a processes of value negotiations between different factors, they believed that (monetary concern, quality, convenience, sensory perceptions, relationship of health and nutrition). Respondent's monetary consideration extended beyond the "Cheapest" and included concepts such as value for money and volume for money. For the products with a high price, respondents mentioned that they decided not to buy highly priced products, because of the wrong time and place, the relevance of high-priced products were weighted with other factors such as, need for a product, overall quantity, pleasure derived from a product.

Most of the quantitative evidence linking food prices with food purchase are based on the economics and marketing literature, which hints at the relationship of "price-elasticity", demonstrating the change in average consumption (Hoch. et., al., 1995). He claimed that the change of price of one good can impact the change in price of the substitutional good, so-called cross-price elasticity. For example, fruit and vegetable are influenced by the price of meat and cereals. When the price of food increases, purchase of a substitutional good increases as well, however the purchasing of complementary food decreases.

### **3.3.2 Availability**

Initial definition of food availability stands in between food security and accessibility. The conference of World Food in 1974, focused on volumes and food supplies globally, exploring food security as having available and adequate world food supplies of basic food to maintain a stable increase in food consumption and make balanced the variability in food production and price. However, the definition is quite simple, it is an access by all people at any time to enough food for an active and healthy life".

Ahmad and Farooq (2010) identified availability and access in two different dimensions of food security. Barrett (2010) however, identified availability, access, and utilization as the main hierarchical pillar of food security. Availability is obviously necessary but not enough to ensure access, whole access is not enough no ensure utilization.

Food Availability refers to having enough quantity of food and appropriate quality which are supplied through domestic production or purchased from local markets or imported from abroad as a food aid. Food availability encompasses the quantity, quality of food which is available to households (Barret, 2010).

Food Access: It refers to gaining a sufficient resource (entitlements) needed for acquiring appropriate foods for a nutritious diet, where entitlement stand for an ability of household to express effective demand for food. Effective demand is expressed through a household's own production of food or ability to purchase food with income from other activities (Barret, 2010).

Utilization of food is expressed through individual needs and health status. Food utilization and nutrition covers an adequate diet and non-food inputs, such as clean water, health care and sanitary standards to meet all individual physiological.

Speaking about availability of food is another factor that has a big impact on the food choice. The availability factor is significant to consider in relation to socioeconomic areas, where income is vital, when making a purchasing decision. In the study of Cummins and Macintyre (1999) and Hayes et al (2000) mixed results were found. Based on product baskets that supposed to meet daily dietary needs, population with different economic abilities were analyzed. Overall dietary costs were quite similar for low and high socioeconomic areas. They studied the price variation in small numbers of the most common food items, which varied minimally in its quality. The study found a small difference in food-price of low and high socioeconomic consumers. Based on the commercial and governmental price data, a low income was linked with significantly low prices, however when there is a reduction in income over time, it is usually associated with the high prices for the same type of products.

The other study of Hayes et al (2000) found an interesting factor of how population density and near by shops correlate with each other. He concluded that the nearby shops per square kilometre and per capita, store size, store sales and market share, are also factors that influence the food choice and availability of food within a certain region. His research was mased in Ohio, USA, where average prices within an area were influenced by proportions of different shops, same type of offers, and its volumes.

Another example was done in Glasgow by Cummins and Macintyre (1999) that concluded that the lack of large shops does not impact the price and there is not evidence that socioeconomic factor is relevant. The shop-types were all standardized, prices were compared on a base of a common dietary needs (eggs, bread, oil and meat). The deviation of prices was only linked with logistic

costs for different households, the supermarkets and small shops didn't bear any costs in that regard.

Morris (2000) made the same conclusion in regards of transportation means. Those people without transportation means, are more likely to skip buying heavy basket volumes, since the delivery of the baskets will be on their own, which makes food choice decisions deviate time to time. However, for households with their own means of transport, transportation makes it very easy. The volumes of food purchased, and experiences related to transport were mentioned as a quite frequent factor in the UK Studies, using a focus group session to discuss an intake increase with fruits and vegetables (Anderson and Morris, 2000).

Morland and Pole (2002) prices for food are higher in small, independent, inner-city stores in comparison with a large, chain stores in more sub-urban areas. That tendency was explained as, low-income areas located in the inner cities, have a disproportion of independency, small stores contribute to the higher food prices, comparing low prices which are in line with high socioeconomic areas.

Thus, in low-socioeconomic areas, certain products appeared to be better value for money, such as Newcastle, and worse value for money in Glasgow.

### **3.3.3 Assortment**

The assortment factor is one key strategy in product management and policy that usually demonstrates the success of firm's apart price policy. Varley (2014) argues that in retailing business, different assortments of depth product and breadth of product can be successful and complete with each other. The breadth of product was denoted by the number of product lines a retailer carries, and the depth of product is defined as the variation within a product line. Both factors characterize retailer's product assortment.

Consumers are dependent on the retailer's assortment, and it matters for selection choice of every consumer in a grocery store. According to the research of Arnold et al. (1978), consumers reported the most important determinants of their choice:

- Convenient location
- Low prices
- Attractive assortment

However, the analysis of Briesch (2009) concluded the role of assortment on a higher level. Different model of (Ibid, p.178) has proved that the choice-decision as a function of product assortment together with price, convenience, and feature advertising. The authors have proved that

fact that product assortment is more of a relevant factor than price. Briesch however, proved that economic factors are crucial in making such a conclusion. Whenever he detected that the price for a certain product wasn't an obstacle for consumers, the assortment became more relevant and vice versa. An income alignment with the assortment diversity is inter-connected, and consumers do realize that.

Conceptually, assortment strategies were assessed under an assumption of maximization of consumer utility and profit-maximization of retailers by Baumol and Ide (1956). They developed a model where consumers had maximized their expected utility by three factors:

- An attractiveness of retail stores which rises with an increased assortment of products, hence due to more choice-options
- Transactional costs, that are results of many visitors, which increases with the assortment as well as a result of higher search costs.
- Seasonality, as a result of increased visitors and hence search costs increase.

Consumers will be visiting stores whenever the expected net benefit rises.

Briesch (2009) stated the rule "more choice is better" was discussed quite extensively and has challenged different literature of business-management and welfare economics. However, he claims that sometimes, customers could lose an interest in shopping due to an excessive assortment option. Ide (1956) claimed that the greater the number of options in the choice set, the higher the chance of consumer to find an option matching their purchasing goals. Additionally, he claimed that consumer might experience additional utility simply from having multiple items in the choice set, the vast assortment might lead to stronger preferences because it offers more of option values and give consumers a sense of uncertainty regarding future tastes.

Large assortment of any product brings to customers a job of choice freedom and feeling of personal control over shopping and overall shopping satisfaction. Baumol (1956) claimed that customers when having a wide range of assortment can learn about available products. However, research of Furst (1996) had shown that reduction in size of assortment can actually increase sales from that assortment. Making a choice from large assortment needs greater cognitive effort than choosing from smaller assortments because it entails evaluating skills of a greater number of options. Additionally, consumers who are uncertain in their preferences, a large assortment was a confusing point to evaluate products and finally make decision. Consumers had to compare different aspects of products, its price structure, volumes, origin of production and extra. It is recorded that most of the consumers were dissatisfied with the shopping when a large assortment is available as an option. However, Furst (1996) claimed that the factor of where consumers buy

their products was the key. He asked over 1204 people, where 76 percent of them were mostly buying products from hypermarkets, and the rest were buying products from small shops. He noticed a tendency of those, who make their purchases in supermarkets or hypermarkets, have a higher tendency to have a problem with a large assortment option.

### **3.3.4 Quality**

Quality could be defined as evaluation of excellence and superiority of the product. Some researchers argue that quality cannot be defined and quality as a fact, is an objective which can be measured. In other thought, others believe that quality cannot be measured.

Objective of quality is an evaluation of product based on physical characteristics. The purpose of quality is to evaluate a product based on physical characteristics. While the perception of quality considers subjective notation, which is a consumer assessment of a product and a judgment based on some attributes.

Waterlander (2011) defined perceived quality in terms of consumer judgment of inner attributes (taste, ingredients, nutrition value and overall quality). According to Collins (2003) consumer evaluates quality with the perception of physical characteristics of products, such as (color, size, flavor, scent) and additionally appearance of a products, such as (package, pricing, advertising, and peer pressure). He also claims that most of the consumers associate the quality with the brand. Brand and its logo might affect on purchasing decision.

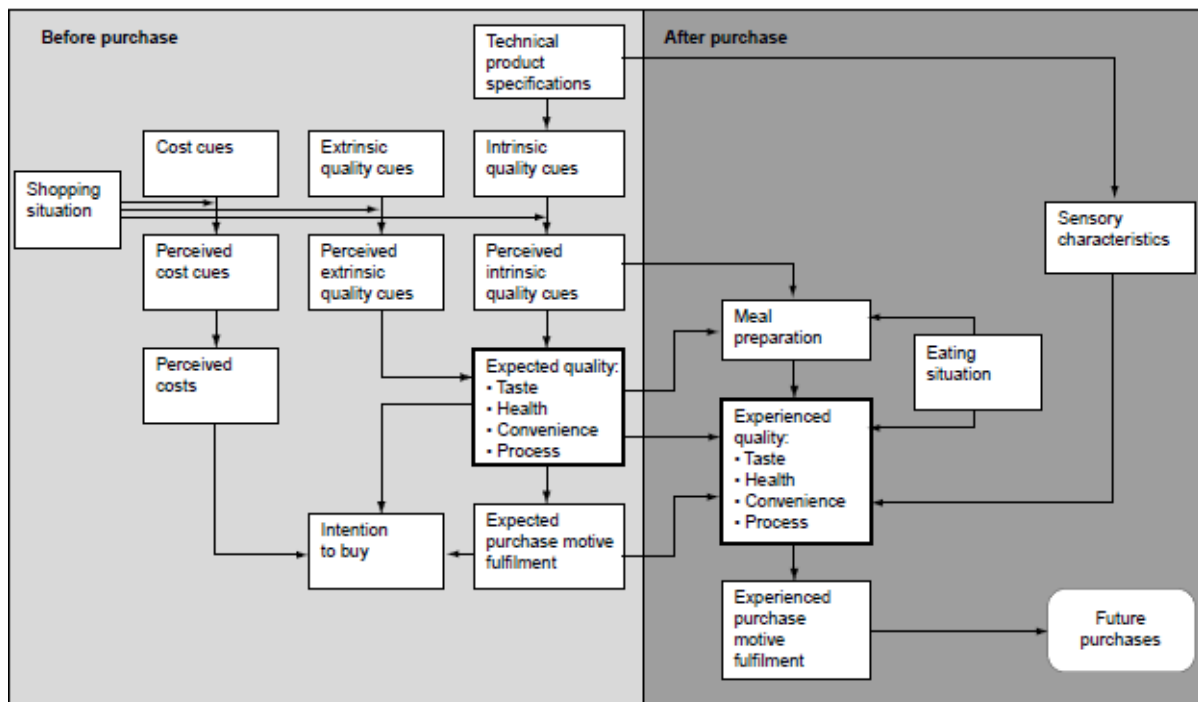
The food quality is distinguished between before and after purchase evaluation, since the customers have their own perception about a product before they buy it. (See Figure 5). The whole mode is based on the quality expectations which are formed on the quality cues available. Cues are pieces of information used to inform about quality expectations (Steenkamp, 1990). There are intrinsic cues quality that cover the physical characteristics which are mentioned above. The way consumers use quality cues sometimes seem to be very irrational. For example, consumers use the color of mean to conclude delicacy, the consistency of yogurt to conclude its taste, and packaging of chocolate box to conclude its usefulness. The cues consumers are exposed to and those they perceive, are affected by the shopping situation, the amount information in the shop available, whether the shopping is planned or spontaneous, the pressure of time and extra. After a purchase, consumers will usually have a quality experience and compare it with the expected quality experience which will eventually deviate from each other. He believes that food has always been a matter of pleasure. It is generally believed that the relationship between quality expectation and quality experience (e.g., before and after a purchase) determines satisfaction with a product and

therefore the likelihood of a repeat purchase of a product. There are different quality dimensions of food where consumers have shown an increasing interest.

Health: is a quality dimension that become very important to many consumers and a numerous studies have shown that, today, health is as important as taste, and consumer preferences are formed on the base of both, longer life, and higher quality (Roinine and Tuorila, 2001). However, consumers are also concerned with the risk-related issues and its safety.

Convenience is another factor that consumers consider nowadays. Such factors such as use of GMOs in the products, consumers started paying more attention to the origins of production and its consistency, more and more consumers are focused on naturalness. The product should be process with an organic line, animal welfare should be taken into consideration as well. (Tourila, 2001). For the most part, taste is correlated to the healthiness of a product.

**Figure 5: The Total Food Quality Model**



Source: Graaf, 2001 – p.56.

## **4 Practical Part**

The survey was done in two different states, Czech Republic, and Russian Federation. There are 14 questions in general that were asked the two group. The survey was in Czech language for Czech participants and Russian language for Russian participants. There were mainly students who participated in the survey aged from 15 up to 30 years old. The criteria before participating in the survey were the following:

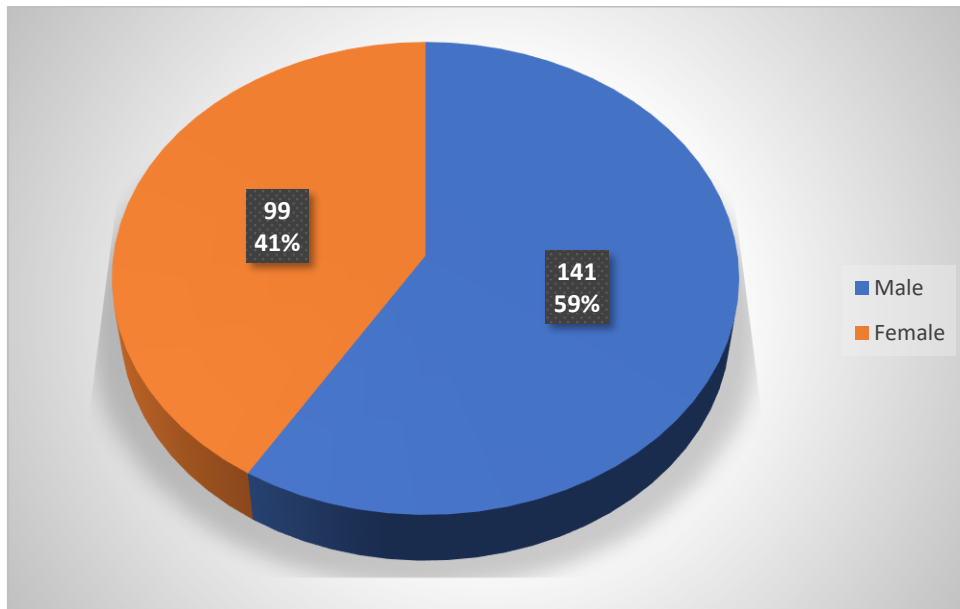
The survey consists of 14 questions, with the multiple-choice options. The goal of that survey is to identify what are the factors that influence people's food-choice and its decision. It has an anonymous character, but if you prefer you can put your name and surname as well. The survey is voluntarily, you can quit the survey at any time you want to, in this case all the data will be erased. All the data will be strictly confidential, and the author of the survey is the one who will have access to all the answers with the stated names. The data within the survey will only be analysed for the Diploma Thesis of the author. All the data will be processed by the author and used for the defence of the Diploma Thesis, with the Czech University of Life and Science, faculty of Economics and Management. The list of questions could be found in Appendix 1, the survey was translated in English.



## 4.1 Output of the survey for Czech Republic

There were 240 participants in total divided into two genders, male and female, the survey's options was also "Prefer not to answer" option, however all participants answered that question, which are shown in the Figure – 1.

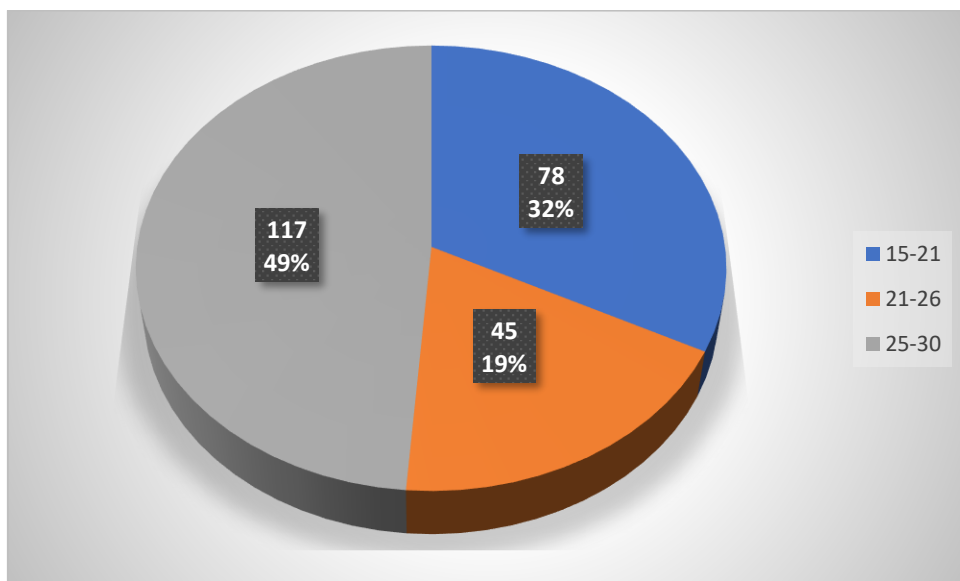
**Figure 6: Gender**



Source: Own, Excel.

The age category was distributed in the following way, See Figure – 7.

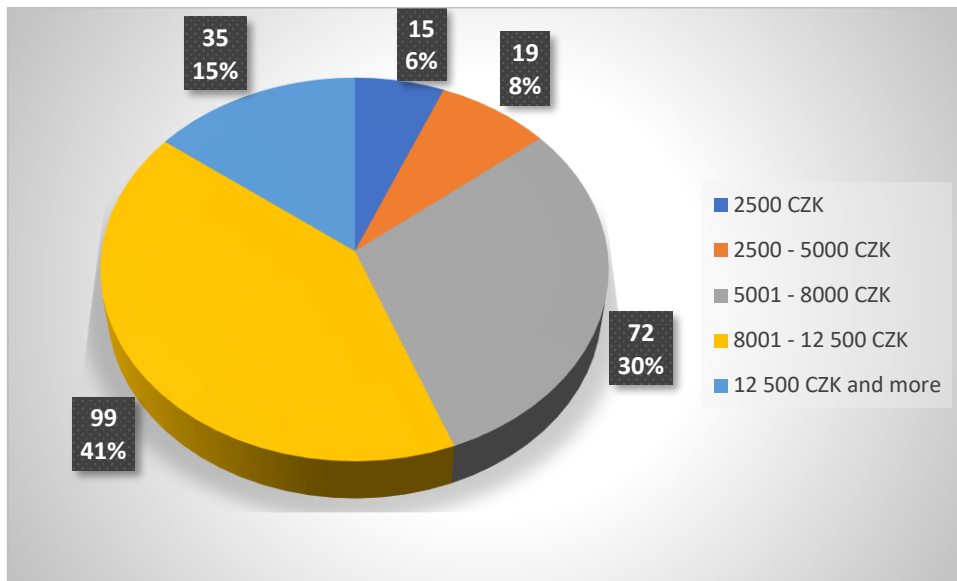
**Figure 7: Age category**



Source. Own, Excel.

As it was mentioned above, students are the ones who participated in the survey, and it covers three different age categories (See Figure -7).

**Figure 8: Monthly Income in CZK**

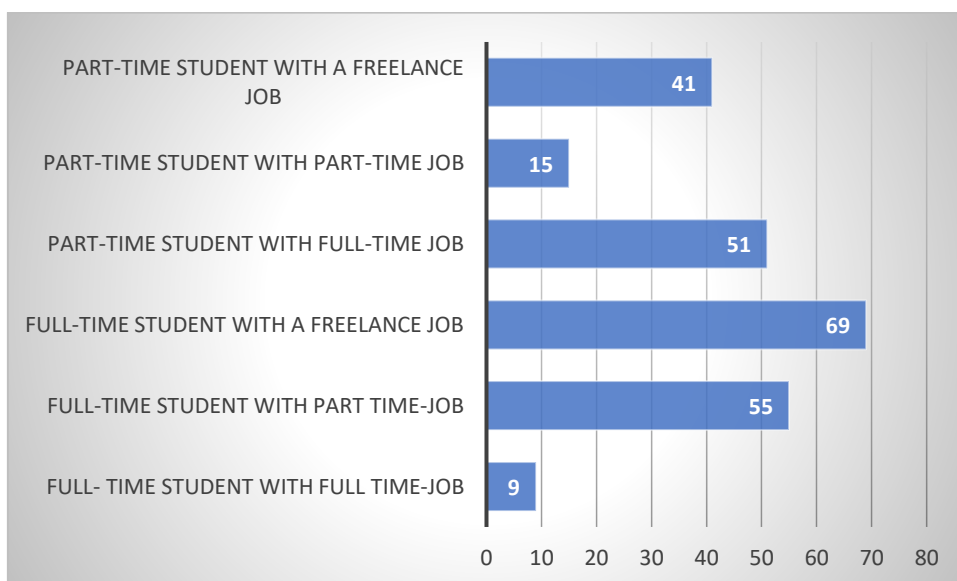


Source: Own, Excel.

Most of the participants belonged to the so-called higher income category, which might be seen on the Figure – 8, (99 participants) which accounted for 41 % of the total sampling, followed by an average income of (5000 – 8000 CZK) – (72 participants) of 30 %.

Even though all participants fall into the group of students, the following question concerned an occupation which is demonstrated in the Figure – 9.

**Figure 9: Occupation**

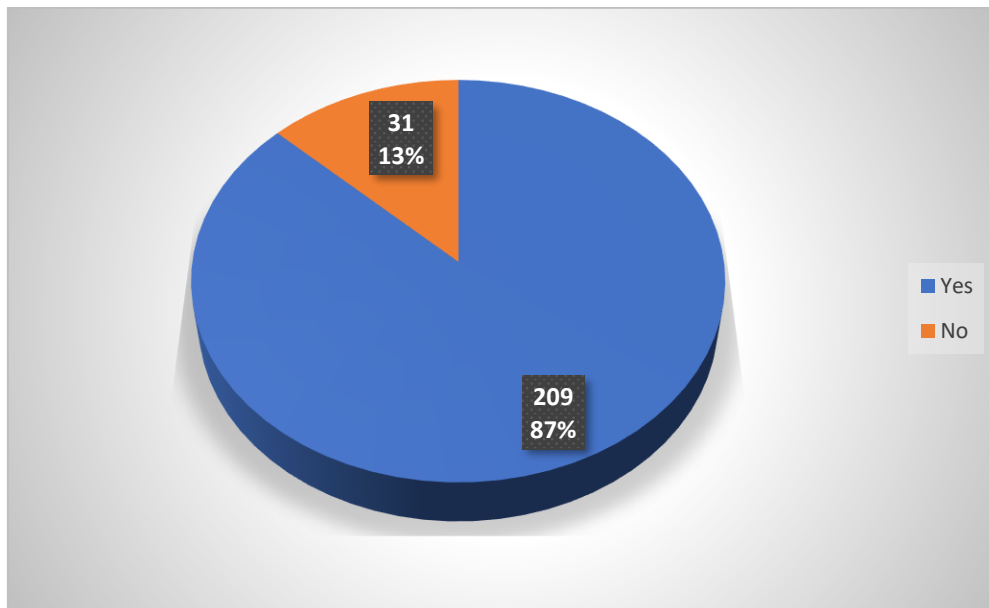


Source: Own, excel.

All of the students were involved in working positions, whether it concerned freelancing or part-time job. Which could eventually show better results of the stated hypothesis, whether occupation and consumption of bakery products have dependency between each other.

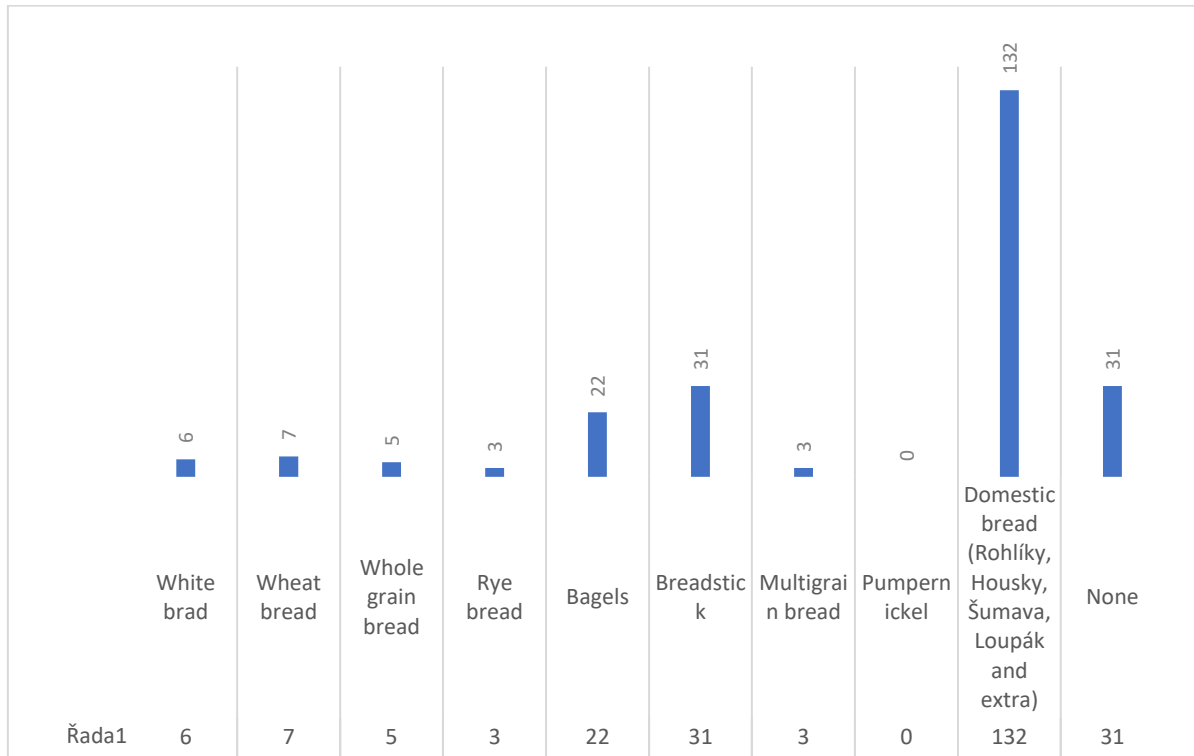
However, not all the set of respondents group eat bread, the survey showed the following results, See Figure – 10. 31 participants don't eat bread/bakery products. Based on the survey data, has allocated participants answers the way that eventually helped the author to create contingency tables and verify the hypothesis.

**Figure 10: Preferences of eating bread**



Source: Own, Excel.

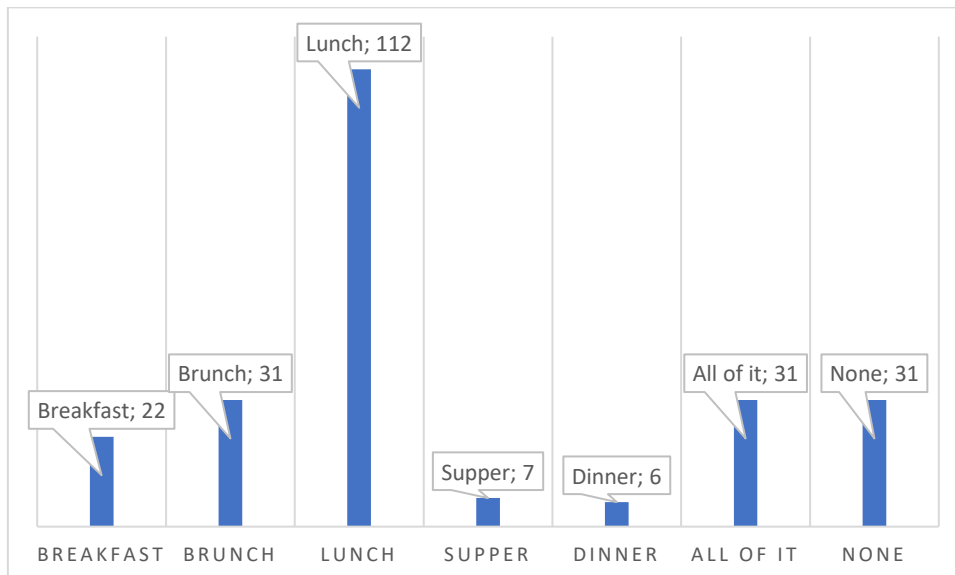
**Figure 11: Preferences of bread by types**



Source: Own, Excel.

Most of the participants from Czech Republic prefer domestic bread such as: rohlíky, housky, šumava, loupak etc. Which might detect the cultural preference in the question.

**Figure 12: Course of meal and consumption of bread**

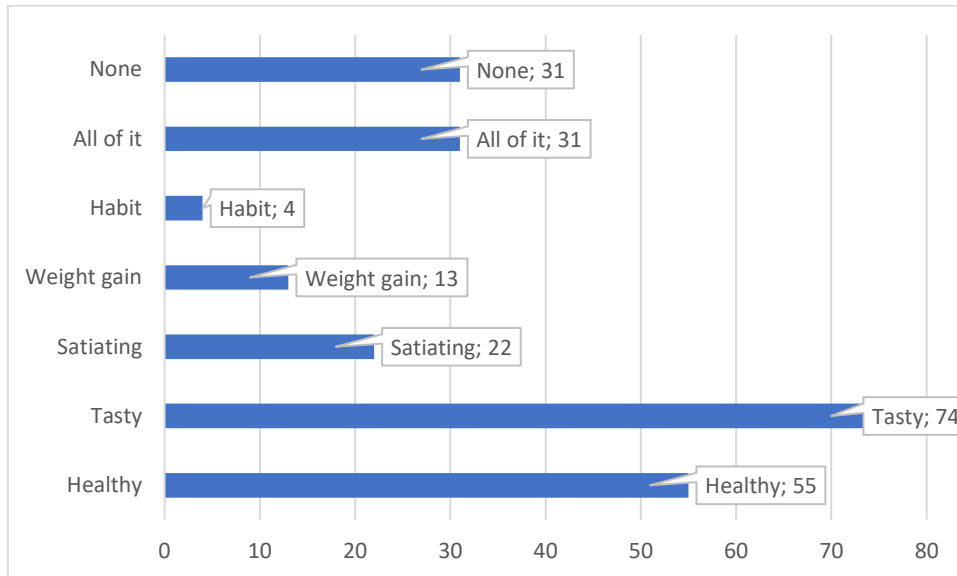


Source: Own, Excel.

Figure – 12, indicates when participants intake/consume bread the most. “Lunch” is preferred by most of the participants, which again, might indicate a cultural habit in the question. The following

question dealt with the purpose of eating habit, obviously this might be based on the personal factors as well as cultural and social, the Figure – 13 demonstrated the main reasons of why participants consume bread.

**Figure 13: Purpose of eating bread**



Source: Own, Excel.

Based on the sampling for Czech Republic, participants eat bread because it is “Tasty” which is accounted for 31 % (74 participants). 23 % (55 participants) consider that eating bread is healthy and only 9 % (22 participants) consider it to be “Satiating”.

The following questions were structured in way of scaling method, where participants had to choose from “Very important” to “Not important at all”, and the following factors were considered:

- Scent
- Size
- Composition
- Taste
- Freshness
- Appearance
- Color
- Consistency

**Table 1: Importance of factors related to bread**

Please, scale from “very important to not important at all the following criterions”	Very important	Important	Indifferent	Less Important	Not important at all
Scent	35%	65%	0%	0%	0%
Size	31%	31%	14%	21%	4%
Composition	26%	20%	9%	26%	21%
Taste	88%	12%	0%	0%	0%
Freshness	100%	0%	0%	0%	0%
Appearance	88%	10%	2%	0%	0%
Color	20%	20%	35%	13%	12%
Consistency	26%	41%	21%	12%	0%

Source: Own, Excel.

The number of participants who had access to these scaling questions, were reduced due to the fact that 31 participants didn't eat bread at all, hence the author excluded the option for those participants to vote further on, nevertheless, the results are demonstrated in Table – 1, based on the answers of 209 participants.

Scent as a factor is very important for the whole sample group in Czech Republic. Size is not the main factors that is important for all, however majority of participants (62 %) chose size as important as scent. Composition was equally answered by the whole sampling. Freshness is for all participants is very important factor together with “Appearance”. Color of the bread is indifferent for majority of participants and “Consistency” of bread is important for 67 % of participants.

**Table 2: Assumptions of participants**

Please, scale from “very important to not important at all the following criterions”	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The higher the quality of bread/bakery products (Rich in nutrients) the higher the price.	88%	12%	0%	0%	0%
With the vast assortment of bread/bakery products the price seems to be equally distributed among the producers and vice versa.	24%	18%	33%	13%	12%
With the low availability of bread/bakery products, the price seems to be higher and vice versa.	25%	10%	35%	21%	9%
When a large assortment option is available, I find it difficult to make a purchasing-decision regarding bread/bakery products.	44%	12%	0%	0%	44%

Source: Own, Excel.

Based on the author's assumptions, the participants answered their opinions on how price and quality, assortment and price, availability and price and assortment and difficulties to make a purchase decision, the results are demonstrated in Table – 2.

All participants agreed that the higher quality of bread/bakery products usually will result in higher prices.

The vast assortment doesn't seem to influence the price based on the results of the survey where 42 % of participants agreed, 25 % disagreed and the rest were unsure.

Low availability of bread/bakery products doesn't seem to influence price either. Only 35 % of participants agreed with the statement, 30 % disagreed and 35 % unsure.

When there is a large assortment option, most of the participants find it difficult to make a decision, 56 %. The rest 44 % have disagreed.

#### 4.1.1 Hypothesis Testing for Czech Republic

Based on the stated hypothesis, the author processed all the data in Excel, with the help of Chi-Square test and Test Statistics, which is described step-by-step in Methodology Chapter - 2.2.

H0: There is no dependency between gender and consumption of bread/bakery products.

H0: There is no dependency between age and consumption of bread/bakery products.

H0: There is no dependency between occupation of students and consumption of bread/bakery products.

H0: There is no dependency between income and consumption of bread/bakery products.

#### Gender and consumption of bread/bakery products

H0: There is no dependency between gender and consumption of bread/bakery products.

HA: There is dependency between gender and consumption of bread/bakery products.

*Alfa level = 0,05 %.*

#### Data:

Gender Dependency	Do you eat bread/bakery products?		
	Yes	No	Total
Male	120	21	141
Female	89	10	99
Total	209	31	240
Degree of Freedom	1 (R-1)*(C-1)		

Source: Own, Excel.

**Outcome:**

Alfa	0,05	
X2	1,18768	
Chi.Square	3,84146	
P-value	0,2758	Accept H0

Based on the p – value, which equals to 0,2758 which is higher than Alfa level 0,05, we accept the H0, stating that there is no dependency between gender and consumption of bread/bakery products.

**Age and consumption of bread/bakery products**

H0: There is no dependency between age and consumption of bread/bakery products.

HA: There is a dependency between age and consumption of bread/bakery products.

*Alfa level = 0,05 %.*

**Data:**

Age dependency	Do you eat bread/bakery products?		
	Yes	No	Total
15-21	75	3	78
21-26	40	5	45
25-30	94	23	117
Total	209	31	240
Degree of Freedom	2 (R-1)*(C-1)		

Source: Own, Excel.

**Outcome:**

Alfa	0,05	
X2	10,5629	
Chi.Square	5,99146	
P-value	0,00509	Reject H0

Source: Own, Excel.

Based on the p – value, which equals to 0,00509 which is lower than Alfa level 0,05, we reject the H0, concluding that there is a dependency between age and consumption of bread/bakery products. Meaning, the more mature participants are, the less chance that they will prefer to eat bread, based on the results.



## Occupation of students and consumption of bread/bakery products

H0: There is no dependency between occupation of students and consumption of bread/bakery products.

HA: There is dependency between occupation of students and consumption of bread/bakery products.

Alfa level = 0,05 %.

### Data:

Occupation	Do you eat bread/bakery products?		
	Yes	No	Total
Full-time student with full-time job	7	2	9
Full-time student with part-time job	50	5	55
Full-time student with a freelance job	54	15	69
Part-time student with full-time job	46	5	51
Part-time student with part-time job	12	3	15
Part-time student with a freelance job	40	1	41
Total	209	31	240
Degree of Freedom	5 (R-1)*(C-1)		

Source: Own, Excel.

### Output:

Alfa	0,05	
X2	11,2931	
Chi.Square	11,0705	
P-value	0,04587	Reject H0

Source: Own, Excel.

Based on the p – value, which equals to 0,04587 which is lower than Alfa level 0,05, we reject the H0, concluding that there is a dependency between occupation and consumption of bread/bakery products. Meaning, the more students of full-time will participate in the survey, the higher probability that those students will not prefer to eat bread/bakery products.

### Income and consumption of bread/bakery products

H0: There is no dependency between income of students and consumption of bread/bakery products.

HA: There is dependency between income of students and consumption of bread/bakery products.

Alfa level = 0,05 %.

#### Data:

Income dependency	Do you eat bread/bakery products?		
	Yes	No	Total
2500 CZK	14	1	15
2500 - 5000 CZK	15	4	19
5001 - 8000 CZK	66	6	72
8001 - 12 500 CZK	89	10	99
12 500 CZK and more	25	10	35
Total	209	31	240
Degree of Freedom	4 (R-1)*(C-1)		

Source: Own, Excel.

#### Outcome:

Alfa	0,05	
X2	11,3071	
Chi.Square	9,48773	
P-value	0,02332	Reject H0

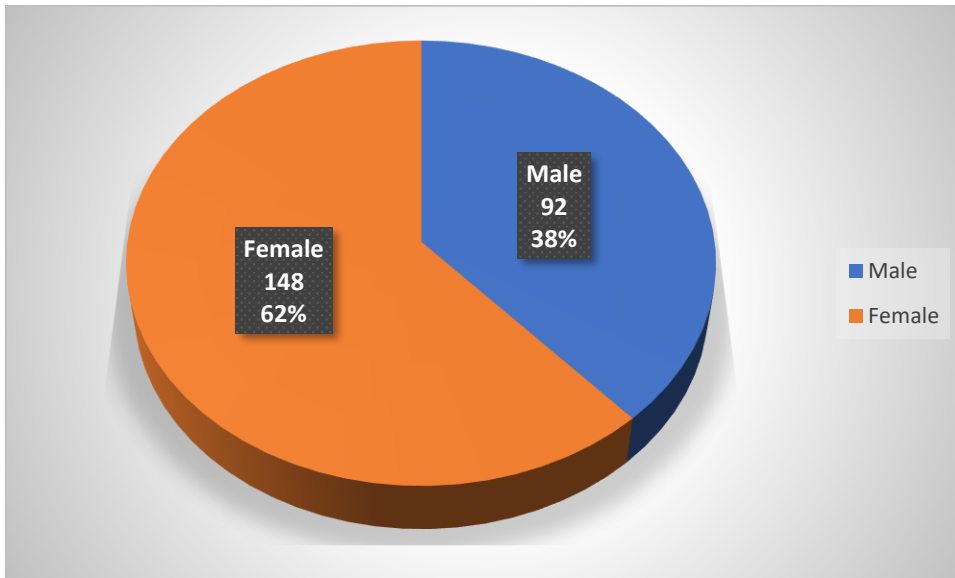
Source: Own, Excel.

Based on the p – value, which equals to 0,02332 which is lower than Alfa level 0,05, we reject the H0, concluding that there is a dependency between income and consumption of bread/bakery products. Meaning, the more students earn a monthly income the higher probability that those will not prefer to eat bread/bakery products.

## 4.2 Output of the Survey for Russian Federation

There were 240 participants in total divided into two genders, male and female, the survey's options was also "Prefer not to answer" option, however all participants answered that question, which are shown in the Figure – 14. The numbers of both samplings are equal which helps the author to make conclusion based on equality.

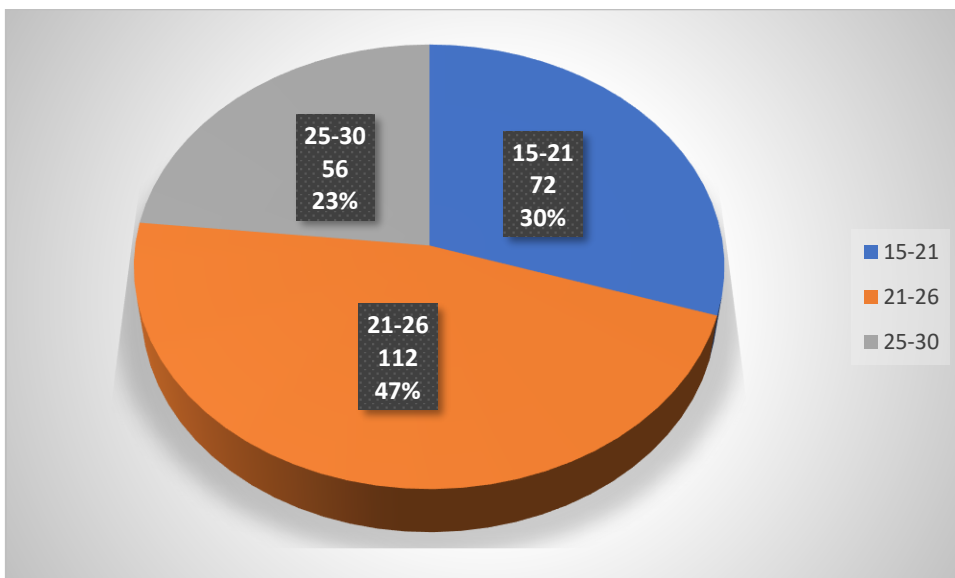
**Figure 14: Gender**



Source: Own, Excel.

Based on the Figure – 14, there were 92 males accounted for 38 % and 148 females accounted for 62 %.

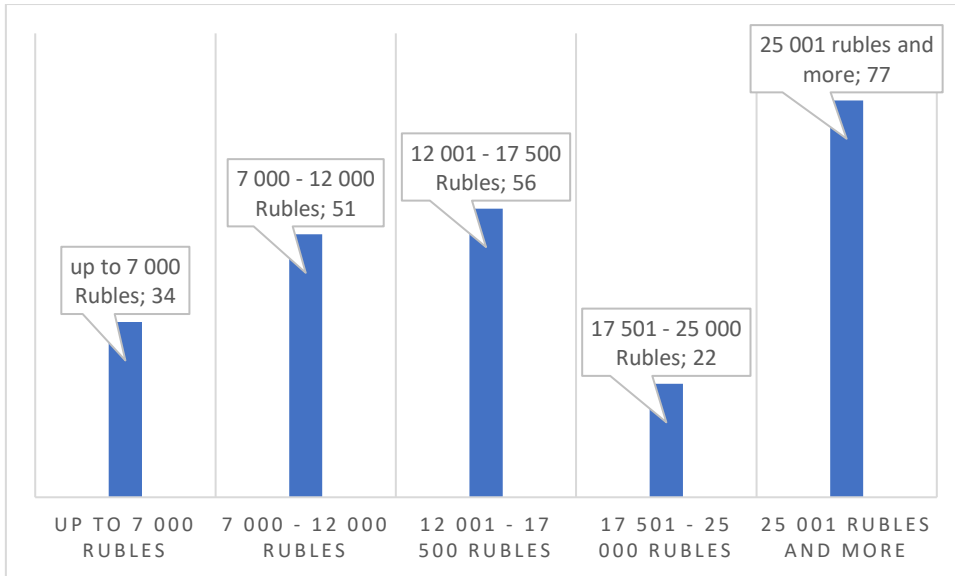
**Figure 15: Age category**



Source: Own, Excel.

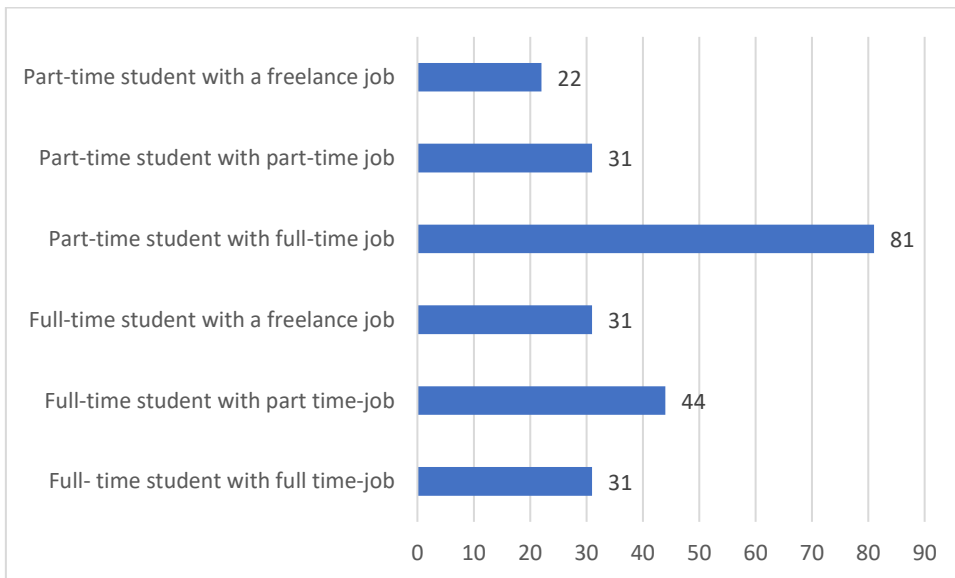
The age group is the same as in Czech Republic, however its distribution is different than in Czech Republic, most of the participants fall into the middle age group, based on the answer-options 47 % (112 participants) aged 21 – 26. Concerning the monthly income questions, most of the participants belonged to the group of a higher income as for the students, the author considers an average Exchange rate of Rubles to CZK, It is 3,3 Rubles equal to 1 CZK.

**Figure 16: Monthly Income in Rubles**



Source: Own, Excel.

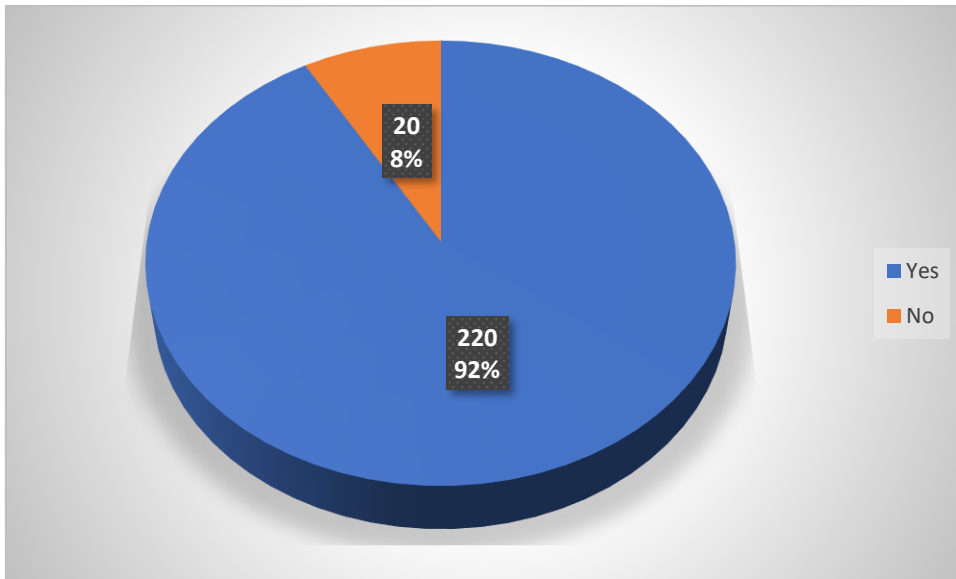
**Figure 17: Occupation**



Source: Own, Excel.

In Russian Federation, students of part-time prevailing more than in Czech Republic. Hence it might influence the results of dependency.

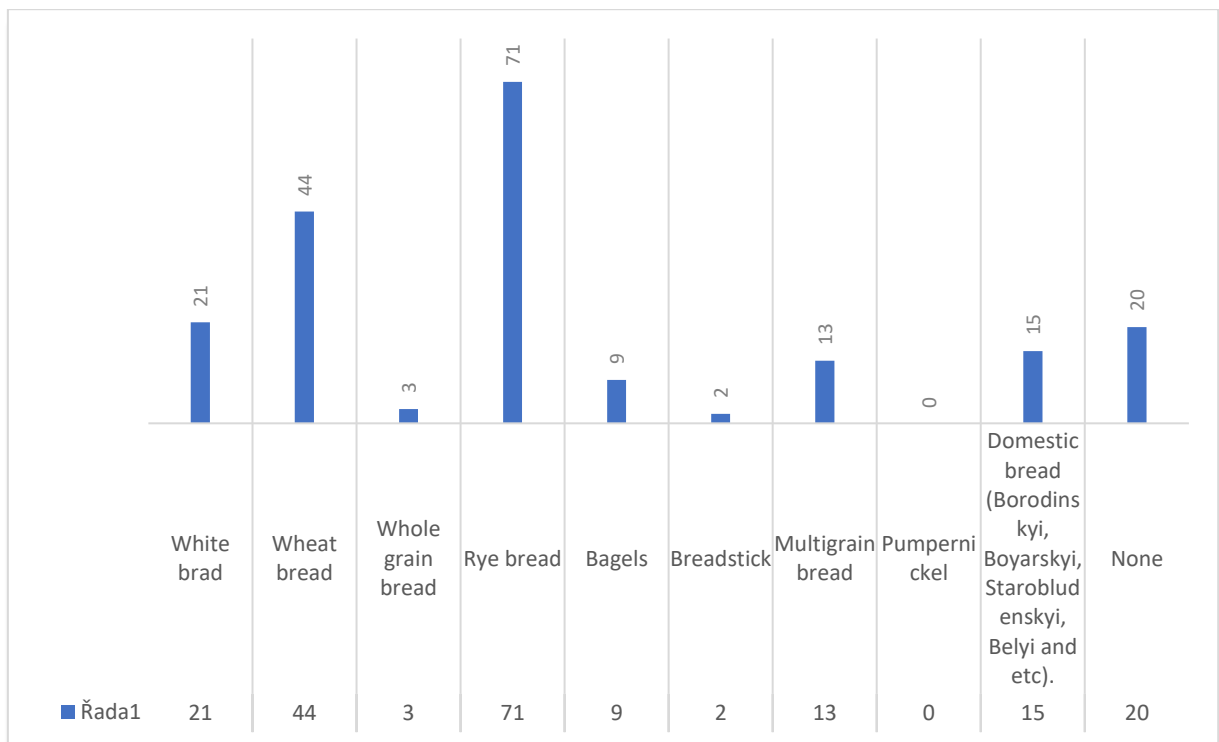
**Figure 18: Preference of eating bread**



Source: Own, Excel.

This is the main question that help the author to verify hypothesis, based on the contingency tables. However, there are more participants who like eating bread than in Czech Republic.

**Figure 19: Preferences of bread by types**



Source: Own, Excel.

Based on the answers of participants, most of them preferred “Rye bread” which is indeed is the same as the domestic bread “Borodinsky”. The author might assume that these answers could be

put together, however, it still demonstrated that Czech participants would rather choose the domestic bread comparing to Russian participants.

**Figure 20: Purpose of eating bread**



Source: Own, Excel.

Most of the participants eat bread because it is “Satiating” after all, accounted for 52 % of participants. “Healthy” was chosen as a secondary fact of why participants eat bread, by 18 %.

The following questions were structured in way of scaling method, where participants had to choose from “Very important” to “Not important at all”, and the following factors were considered:

- Scent
- Size
- Composition
- Taste
- Freshness
- Appearance
- Color
- Consistency

**Table 3: Importance of factors related to bread**

Please, scale from “very important to not important at all the following criterions”	Very important	Important	Indifferent	Less Important	Not important at all
Scent	54%	27%	14%	5%	0%
Size	23%	30%	23%	10%	14%
Composition	19%	35%	37%	10%	0%
Taste	74%	26%	0%	0%	0%
Freshness	78%	10%	13%	0%	0%
Appearance	15%	19%	26%	34%	5%
Color	20%	14%	30%	17%	19%
Consistency	28%	10%	19%	10%	34%

Source: Own, Excel.

Scent was important for 81 % of participants, which is accounted for 177 participants, the author has excluded the participants who didn't eat bread (20 participants) and the rest did (220), the same step was done in the survey for Czech Republic. Size is important for majority participants, 53 % and the rest are either indifferent to the “Size” criterion or it is not that important. Composition was also important for most of the participants, 54 %, however 37 % and 10 % were less worried about that factor. Taste was absolutely the favorite for all participants, the factor was the most important for the whole sampling. Freshness was important for 87 % of participants and the rest 13 % were indifferent towards “Freshness” criterion. Appearance was not important much for the participants, only 34 % responded that it is important, the rest were either indifferent or didn't consider it to be important and the same with color of bread/bakery products. Consistency was also not remarkably important for the sampling, only 38 % considered it to be important.

**Table 4: Assumptions of participants**

Please, scale from “very important to not important at all the following criterions”	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The higher the quality of bread/bakery products (Rich in nutrients) the higher the price.	40%	6%	6%	36%	12%
With the vast assortment of bread/bakery products the price seems to be equally distributed among the producers and vice versa.	32%	18%	25%	13%	12%
With the low availability of bread/bakery products, the price seems to be higher and vice versa.	18%	18%	45%	13%	6%
When a large assortment option is available, I find it difficult to make a purchasing-decision regarding bread/bakery products.	22%	8%	28%	20%	22%

Source: Own, Excel.

### 4.2.1 Hypothesis Testing for Russian Federation

Based on the stated hypothesis, the author processed all the data in Excel, with the help of Chi-Square test and Test Statistics, which is described step-by-step in Methodology Chapter - 2.2.

H0: There is no dependency between gender and consumption of bread/bakery products.

H0: There is no dependency between age and consumption of bread/bakery products.

H0: There is no dependency between occupation of students and consumption of bread/bakery products.

H0: There is no dependency between income and consumption of bread/bakery products.

#### Gender and consumption of bread/bakery products

H0: There is no dependency between gender and consumption of bread/bakery products.

HA: There is dependency between gender and consumption of bread/bakery products.

*Alfa level = 0,05 %.*

#### Data:

Gender	Do you eat bread/bakery products?		
	Yes	No	Total
Male	87	5	92
Female	133	15	148
Total	220	20	240
Degree of Freedom	1 (R-1)*(C-1)		

Source: Own, Excel.

#### Output:

Alfa	0,05	
X2	1,640850337	
Chi.Square	3,841458821	
P-value	0,205308839	Accept H0

Source: Own, Excel.

Based on the p – value, which equals to 0,1143 which is higher than Alfa level 0,05, we accept the H0, stating that there is no dependency between age and consumption of bread/bakery products.



## Age and consumption of bread/bakery products

H0: There is no dependency between age and consumption of bread/bakery products.

HA: There is a dependency between age and consumption of bread/bakery products.

Alfa level = 0,05 %.

### Data:

Age	Do you eat bread/bakery products?		
	Yes	No	Total
15-21	69	3	72
21-26	100	12	112
25-30	51	5	56
Total	220	20	240
Degree of Freedom	2 (R-1)*(C-1)		

Source: Own, Excel.

### Output:

Alfa	0,05	
X2	2,493506494	
Chi.Square	3,841458821	
P-value	0,114316776	Accept H0

Source: Own, Excel.

Based on the p – value, which equals to 0,2053 which is higher than Alfa level 0,05, we accept the H0, stating that there is no dependency between gender and consumption of bread/bakery products.

## Occupation of students and consumption of bread/bakery products

H0: There is no dependency between occupation of students and consumption of bread/bakery products.

HA: There is dependency between occupation of students and consumption of bread/bakery products.

Alfa level = 0,05 %.

### Data:

Occupation dependency	Do you eat bread/bakery products?		
	Yes	No	Total
Full-time student with full time-job	30	1	31
Full-time student with part time-job	40	4	44
Full-time student with a freelance job	28	3	31
Part-time student with full-time job	74	7	81
Part-time student with part-time job	27	4	31
Part-time student with a freelance job	21	1	22
Total	220	20	240
Degree of Freedom	5 (R-1)*(C-1)		

Source: Own, Excel.

### Output:

Alfa	0,05	
X2	2,435854143	
Chi.Square	11,07049769	
P-value	0,036123045	Reject H0

Source: Own, Excel.

Based on the p – value, which equals to 0,036 which is lower than Alfa level 0,05, we reject the H0, concluding that there is a dependency between occupation and consumption of bread/bakery products.

## Income and consumption of bread/bakery products

H0: There is no dependency between income of students and consumption of bread/bakery products.

HA: There is dependency between income of students and consumption of bread/bakery products.

Alfa level = 0,05 %.

### Data:

Income dependency	Do you eat bread/bakery products?		
	Yes	No	Total
up to 7 000 Rubles	27	7	34
7 000 - 12 000 Rubles	44	7	51
12 001 - 17 500 Rubles	50	6	56
17 501 - 25 000 Rubles	22	0	22
25 001 rubles and more	77	0	77
Total	220	20	240
Degree of Freedom	4 (R-1)*(C-1)		

Source: Own, Excel.

### Outcome:

Alfa	0,05
X2	18,04125286
Chi.Square	9,487729037
P-value	0,001211397
	Reject H0

Source: Own, Excel.

Based on the p – value, which equals to 0,00121 which is lower than Alfa level 0,05, we reject the H0, concluding that there is a dependency between income and consumption of bread/bakery products. Meaning, the more students earn a monthly income the higher probability that those will prefer to eat bread/bakery products.

## 5 Analysis

Based on the questionnaire that was run in two different states with the equal sampling size, the results were however different. Nevertheless, at the beginning the author has stated the hypothesis and with the help of a survey which consisted of 9 multiple-choice questions and 2 scaling questions which had sub-questions. The survey has covered 240 people for each state and the author has stated different hypothesis to identify the dependencies between the consumption of bread/bakery products. The author has taken into account the different criteria to detect the dependency of age, gender, monthly income and occupation.

For the Czech Republic the dependency was not identified between gender and consumption of bread/bakery products. For the rest of, the dependency was detected, such as: monthly income, age category and occupation.

In terms of the assumption for criteria between price, availability, assortment, and quality. The participants from Czech Republic have confirmed that the price is highly dependent on quality. The equality of prices is equally distributed between the products when there is a vast assortment available and vice versa.

With the low availability of bread/bakery products the prices seem to be higher. When a vast assortment is available, the participants found it difficult to make decision.

In terms of Russian Federation, the results were slightly opposite in a way that, the dependency was detected between monthly income and occupation. There was no dependency detected between age and gender. Additionally, the surveys deviated from the gender point of view. The Czech survey was mainly male oriented and the survey for Russian Federation was female oriented. The participants from Russia didn't confirm the assumption between the price and quality as it was confirmed in Czech, as majority considered that the price is not dependent on quality. However, when the vast assortment is available, the price seems to be equally distributed. With the low availability however, the prices seem to be higher, which has also been confirmed by the responses of participants, in the favour of "Strongly agree and Agree". Concerning the assortment option, participants don't find it difficult to make a purchasing-decision, comparing to Czech survey, which confirmed opposite.

## **6 Conclusion**

The diploma thesis covers the topic of Food and its social context: Factors that influence people's food choice. Case study – Russian Federation and Czech Republic. The thesis was divided into two parts theoretical and practical. Theoretical part covered all the factors that influence the purchasing behaviour and consumer behaviour in general. The author has considered the personal social, psychological factors. However, factors such as price, quality, assortment and availability have also been considered to see whether they could have an impact on purchasing behaviour. In order to find out, the author has run a survey in different states, Czech Republic and Russian Federation. The survey has helped to verify the stated hypothesis (See Chapter 2.2) and also see the dependency of prices, availability, assortment and how they could impact the purchasing behaviour and whether people in both states notice the difference in general. All the planned procedures were done by the author, the results of each state have deviated from each other. There were not expected results for the author, the survey was run in order to find out the factors that might influence the shopping behaviour. The results demonstrate the reality of each factor and how people view: price in relation to quality, assortment in relation to price, and availability in relation to price. Both states have different economic situation, which might have impacted the results for both states, as they are not quite the same. In order accomplish better precision of results, the author might advise to extend the sampling size with the same criteria. Nevertheless, the procedures went as planned, the results have been analysed in Chapter 5.

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## Appendix 1

1. What is your gender?
  - a) Male
  - b) Female
  - c) Prefer not to answer
2. What age group you belong to?
  - a) 15-21
  - b) 21-26
  - c) 25-30
3. What is your monthly income?
  - a) Up to 100\$
  - b) 100 \$ - 249 \$
  - c) 250 \$ - 449 \$
  - d) 450 \$ - 700 \$
  - e) 700 \$ and more
4. What is your occupation?
  - a) Full- time student with full time-job
  - b) Full-time student with part time-job
  - c) Full-time student with a freelance job
  - d) Part-time student with full-time job
  - e) Part-time student with part-time job
  - f) Part-time student with a freelance job
5. Do you eat bread/bakery products?
  - a) Yes
  - b) No
6. What kind of bread do your prefer the most?
  - a) White brad
  - b) Wheat bread
  - c) Whole grain bread
  - d) Rye bread
  - e) Bagels
  - f) Breadstick
  - g) Multigrain bread
  - h) Pumpernickel

- i) Domestic bread (Rohlíky, Housky, Šumava, Loupák and extra) for Russian students will be different options!
  - j) None
7. Where do you usually buy bread/bakery products?
- a) Supermarkets
  - b) Hypermarkets
  - c) Bakery shops
  - d) Small shops
  - e) Online shops
  - f) Other
8. What is the course of meal you usually prefer to eat the bread/bakery products with?
- a) Breakfast
  - b) Brunch
  - c) Lunch
  - d) Supper
  - e) Dinner
  - f) All of it
  - g) None
9. What is the main purpose of yours to eat bread/bakery products?
- a) Healthy
  - b) Tasty
  - c) Satiating
  - d) Weight gain
  - e) Habit
  - f) All of it
  - g) None
10. Please, scale from “very important to not important at all the following criterions”

Scent

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

Size

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

## Composition

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

## Taste

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

## Freshness

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

## Appearance

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

## Color

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

## Consistency

1: Very important; 2: Important; 3: Moderately important; 4: Less Important; 5: Not important at all.

11. The higher the quality of bread/bakery products (Rich in nutrients) the higher the price.

- a) Strongly agree
- b) Agree
- c) Neither agree nor disagree
- d) Disagree
- e) Strongly disagree

12. With the vast assortment of bread/bakery products the price seems to be equally distributed among the producers and vice versa.

- a) Strongly agree
- b) Agree
- c) Neither agree nor disagree
- d) Disagree

- e) Strongly disagree
13. With the low availability of bread/bakery products, the price seems to be higher and vice versa.
- a) Strongly agree
  - b) Agree
  - c) Neither agree nor disagree
  - d) Disagree
  - e) Strongly disagree
14. When a large assortment option is available, I find it difficult to make a purchasing-decision regarding bread/bakery products.
- a) Strongly agree
  - b) Agree
  - c) Neither agree nor disagree
  - d) Disagree
  - e) Strongly disagree