

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**



**Bachelor Thesis**

**Determinants of Online Shopping**

**Julija Pešlová**



# **BACHELOR THESIS ASSIGNMENT**

Julija Pešlová

Economics and Management

Thesis title

**Determinants of Online Shopping**

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## **Objectives of thesis**

The aim of the bachelor thesis is to determine the main factors influencing on-line shopping as well as the preferences of consumers.

The aim will be fulfilled based on the partial aims. Then, several hypotheses will be defined and verified. Based on the results of an empirical analysis the final conclusions will be introduced.

## **Methodology**

The bachelor thesis will cover both, theoretical and empirical part. Theoretical part will contain theoretical background of the selected topic as well as the methodological framework. Scientific literature will be used to prepare the literature overview. Based on the empirical analysis the results will be presented and some recommendations will be suggested.

To fulfill the aim of the thesis the selected methods will be employed as following:

- regression analysis (trend function)
- index analysis (base index, chain index)

## The proposed extent of the thesis

40 – 50 pages

## Keywords

On-line shopping, determinants, consumers, preferences, regression analysis.

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## Recommended information sources

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**Declaration**

I declare that I have worked on my bachelor thesis titled “Determinants of Online Shopping” by myself and I have used sources mentioned at the end of the thesis. As the author of the Bachelor thesis, I declare that the thesis does not break copyrights of any other person.

**In Prague .....**

.....

**Julija Pešlová**

## **Acknowledgement**

I would like to thank my supervisor Ing. Lenka Rumánková, Ph.D. for her guidance and useful advice during writing the bachelor thesis.





## **Determinants of Online Shopping**

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### **Abstract**

The aim of the thesis is to analyze consumption and consumer behavior in the Czech Republic in years 2015 – 2022. The theoretical part explains definitions of consumption and consumer behavior, factors influencing consumer behavior, determinants of online shopping. It is important to approach each person individually as they come from different background and different things influence their behavior.

Practical part of the thesis is dealing with more detailed study of people in different age categories, with different levels of education in the Czech Republic. There are also analyzed people preferences in online shopping and the amount of money different groups of people are willing to spent.

### **Keywords**

On-line shopping, determinants, consumers, preferences, regression analysis

## Determinanty online nakupování

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### **Souhrn**

Cílem práce je analyzovat spotřebu a spotřebitelské chování v České republice v letech 2015–2022. Teoretická část vysvětluje definici spotřeby a spotřebitelského chování, faktory ovlivňující spotřebitelské chování, determinanty online nakupování. Je důležité nahlížet na jedince individuálně, protože pochází z různého prostředí a různé věci ovlivňují jeho chování.

Praktická část práce se zabývá podrobnějším studiem lidí z různých věkových skupin, s různou úrovní vzdělání v České republice. Jsou zde také analyzovány preference lidí ke vztahu k online nakupování a množství peněz, které jsou ochotni utratit.

### **Klíčová slova**

On-line nakupování, determinanty, spotřebitelé, regresní analýza

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## **1 INTRODUCTION**

Humans have always traded during history, whether it was an exchange of goods or services, trading is an important part of the human population. Before money invention people used barter to acquire food, animals, or different goods. Nowadays, the opportunity to buy different types of products, regardless of seasonality, from the different countries of the world is almost endless. We can come across exotic fruit in a store, buy a bottle of good wine from a country thousands of kilometers away, or buy a train ticket in a moment.

With the development of technology, all online shopping processes became faster, easier, and more and more popular. We can make online purchases from home, while traveling without having to visit a store with the use of a smartphone, computer, or any other device.

The trend of online shopping continues to grow and adapt to the needs of the customer. The segment of offer of goods is almost unlimited, from food, through house equipment, to even cars. Each customer is unique and has their own needs and preferences. Some characteristics may be common to a larger group of customers, for which manufacturers produce a specific group of products.

During the Covid-19 pandemic, shopping behavior changed very quickly, and companies had to respond to this fact immediately in order to retain their customers. With the advent of lockdowns, majority of shops, establishments and companies closed, firms had to react quickly to this and if they did not have e-shop, they lost profits. All shopping has moved to the online world, and even after the stores reopening, some of it remains online.

Marketing companies are always looking for new ways how to attract more customers, because purchasing behavior is also changing due to various factors. Therefore a better understanding of customer behavior is important. This study deals with consumer attitude towards online shopping and decision-making process.

## **2 OBJECTIVES AND METHODOLOGY**

### **2.1 Objectives**

The aim of the thesis is to evaluate determinants of online shopping. The goal of this work is to show how consumers think about online shopping and what criteria are important to them when shopping online. Is the price of the products or the review of others important to consumers?

To fulfill the main goal, partial aims are set.

The partial aims:

- To discover whether there is relationship between online shopping preference and personal factors such as gender, age, occupation, level of education and income
- To discover consumers buying preferences

The following hypotheses are established:

- H<sub>01</sub>: There is no significant relationship between gender and online shopping preference.
- H<sub>02</sub>: There is no significant relationship between age and online shopping preference.
- H<sub>03</sub>: There is no significant relationship between occupation and online shopping preference.
- H<sub>04</sub>: There is no significant relationship between educational level and online shopping preference.
- H<sub>05</sub>: There is no significant relationship between monthly income and online shopping preference.

### **2.2 Methodology**

This thesis is divided into two parts, the theoretical part and the practical part. Theoretical part contains theoretical background from various scientific articles, books, journals and studies. The practical part consists of quantitative analysis with a descriptive design. Index analysis is used, specifically fixed and chain base index.

Descriptive statistics explain values like mean, mode, median and etc. In the next part linear trend function is used to analyze and explain long-term tendency in the analysis time series.

Based on a questionnaire with a close-ended question design, primary data are collected. Those findings provide a better understanding of consumers perception towards online shopping.

Finally, the presented hypotheses are tested and when needed, rejected or accepted. Results are described in the final part.

### **2.2.1 Questionnaire**

For the purposes of this bachelor thesis, a questionnaire was created with the help of the Survio website. This portal enables easy creation of questionnaires, their editing and clear analysis. The questions of the questionnaire are compiled on the basis of previous theoretical knowledge and cover the issues of the topic.

In the beginning of the questionnaire there is a brief summarization of the purpose and its use. All results are fully anonymized and available to respondents over the age of 18.

The questionnaire consists of two parts, where in the first part there are 5 close-ended questions of respondent's demographic profile.

In the second part, there are 10 close-ended questions related to respondent's perception to online shopping.

### **2.2.2 Hypotheses testing**

Hypothesis testing is a key tool in statistical inference next to point estimation and confidence sets. All three concepts make an inference about a population based on a sample taken from it. Hypothesis testing aims at a decision on whether or not a hypothesis on the nature of the population is supported by the sample. (Taeger & Kuhnt, 2014)

**Proposed hypothesis:**

- H<sub>01</sub>: There is no significant relationship between gender and online shopping preference.
- H<sub>02</sub>: There is no significant relationship between age and online shopping preference.
- H<sub>03</sub>: There is no significant relationship between occupation and online shopping preference.
- H<sub>04</sub>: There is no significant relationship between educational level and online shopping preference.
- H<sub>05</sub>: There is no significant relationship between monthly income and online shopping preference.

**2.2.3 Categorical data analysis**

The simplest categorical variable is one that has just two categories, usually labeled as “yes-no” or “success-failure”. Such a variable is called binary. Categorical variables of more than two categories are distinguished, accordingly to their measurement scale, to nominal and ordinal. Categorical variable, such as nationality and denomination, the categories of which cannot be ordered in any aspect, are nominal. The categories of an ordinal variable exhibit a natural ordering. Characteristic example of ordinal variables are the social class, the education level, or any scale of opinion measurement with categories expanding from “strongly disagree” to “strongly agree” and the middle category being the “neutral”. (Kateri, 2014)

**2.2.4 Contingency table**

A Contingency table, also called a cross-tabulation, is a table in matrix format that displays the observed counts of categorical variable. It is most often used to describe and analyze the relationship between two or more categorical variables. We classify contingency tables according to the number of categorical variables they display. A tabulation of the observed counts of a single categorical variable is a one-way contingency table, a cross-tabulation of two categorical variables is a two-way contingency table, and so on. (Fagerland, Lydersen, & Laake, 2017)



### **3 LITERATURE REVIEW**

#### **3.1 Consumer Behavior**

At the beginning, it is necessary to define the terms that are key for the further continuation of the researched topic. It is important to understand what consumer behavior is, how it is characterized, what are types of consumer behavior and what influences consumer behavior.

Consumer<sup>1</sup> behavior is an activity when people are willing to purchase goods or services to satisfy their needs. This activity is influenced by many factors.

Consumer behavior<sup>2</sup> is the totality of consumer's decisions with respect to the acquisition, consumption, and disposition of goods, services, time, and ideas by human decision-making units over time. (Hoyer, MacInnis, & Pieters, 2013)

Solomon explained consumer behavior as study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy need and desires. (Solomon, 2010)

Consumer behavior is a reflection of group of people, not only individuals. It could be group of friends, family or co-workers. They can make plans of where to go for diner and share ideas on the phone, through social media or email. During decision making process different group members can divide tasks with each other, one can do information research, other one can affect the outcome, one can make final decisions. This is how many people can be involved in one task. Consumer behavior also involves many decisions like why, what, when, how much and many others. (Pieters, 2021)

Sethna and Blythe (2019) also say that “All of us are consumers: all of us behave in a particular way. This does not mean that all of our behavior can be defined as consumer behavior, of course. Specific consumer behavior has been defined as follows:

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<sup>1</sup> Consumer: Someone who uses, consumes and/or enjoys the benefit of a product/service. (Sethna & Blythe, 2019)

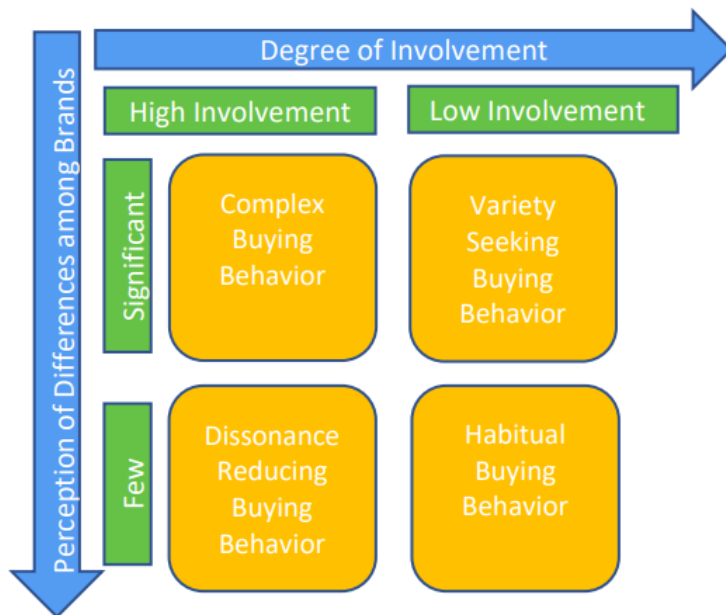
<sup>2</sup> Consumer behavior: The process through which the ultimate buyer or household consumer makes purchase decisions (Boone & Kurtz, 2021)

Many types of consumer behavior are explained as shown in (Figure 1), and we can also confirm that there are differences between consumer behavior and types of product consumer needs to buy. These differences come from product use, quality, features, purchase frequency and most importantly price. (Business Jargons, 2021)

### 3.2 Types of Consumer Behavior

Types of consumer behavior are demined by the degree of involvement and perception of differences among brads. There exist four main types of consumer behavior, see Figure 1.

Figure 1 Types of Consumer Behavior



(Business Jargons, 2021)

#### I. Complex Buying Behavior

Complex buying behavior is when consumers experience high level of involvement in purchase. It happens when the purchase is expensive and high in risk also those purchases are rare and uncommon. Usually, the buyer has not much information about the purchase. (Business Jargons, 2021) For example, it can be a car purchase, the consumer needs to plan and collect information about the product. The buyer also takes advice from experts or friends to choose the right car. (Ellis, 2022)

## **II. Dissonance Reducing Buyer Behavior**

This type of behavior starts when the buyer has some small knowledge about brands and their differences. The consumer is also highly involved, and the purchase is expensive and uncommon. (Business Jargons, 2021) It can for example happen after purchasing furniture, the consumer can experience some dissonance after finding out that other brands can offer same quality products or even slightly better. (Ellis, 2022)

## **III. Habitual Buying Behavior**

This behavior is applied when the consumer buys some products frequently and it is economical. The involvement is quite low, he makes decision base of some familiarity of the brand or taste. (Business Jargons, 2021) Such behavior occurs when consumers buy frequently products such as tea, milk, butter. (Ellis, 2022)

## **IV. Variety Seeking Buying Behavior**

This is a low customer involvement situation when buyer chooses between brands just to try something new not because of some disappointment. (Business Jargons, 2021) It can be such products as lipstick, shoes, soap etc. (Ellis, 2022)

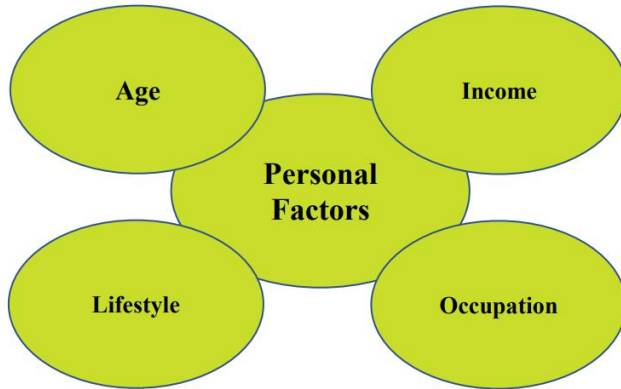
### **3.3 Factors Influencing Consumer Behavior**

Individual determinates include Psychological and Personal factors are taking part in consumer behavior. Psychological factors include individual consumer needs and motivations, perceptions, attitudes, the learning process and personality characteristics are the similarities which operate across different types of people and influence them. (Syed & Milind) See (Figure 2) Amongst the social influences affecting, we can classify the influences of family, leaders and the social class to which the consumer belongs. A personal factor includes age, life cycle, occupation, income, personality. (Syed & Milind)

#### **A. Personal Factors Influencing Consumer Behavior**

The personal factors are factors influencing consumers attitudes, perceptions, motives, feelings and decision-making processes that affect one's level of involvement with a product or service. (Business Jargons, 2021)

Figure 2 Personal Factors Influencing Consumer Behavior



(Business Jargons, 2021)

a) Age

Buying behavior of consumers is affected by the age and human lifecycle. Buying is also shaped by the stage of the family life cycle. (Sarangapani, 2009)

b) Income

Individuals with higher income will spend more money and more likely they would buy expensive or premium products. People with lower income would buy necessary items only. (Business Jargons, 2021)

c) Occupation

Consumer's occupation affects the goods and services people buy. People usually buy products and services that correspond with their social status and profession. For example, the CEO will buy different products than businessman or doctor. (Sarangapani, 2009)

#### d) Lifestyle<sup>3</sup>

Lifestyle is another component influencing consumer behavior. (Business Jargons, 2021)

For example, people with healthy lifestyle will consume more healthy food.

### B. Psychological Factors Influencing Consumer Behavior

It is important to for a prosperous business to understand what makes customers buying some product. Why they buy certain product in certain company. There are four main psychological factors: motivation, perception, learning and beliefs.

#### 1. Motivation

Motivation is the basic psychological factors for making a purchase. The higher the level of motivation is, the stronger is the perception of need. This will help the consumer to satisfy his needs by making a purchase. (Sisk, 2018)

According to Maslow's hierarchy of needs (Mcleod, 2023) people satisfy their needs from the bottom of the hierarchy (see Figure 3). Firstly, they satisfy their psychological needs like food, water, shelter, etc. After they are done with basic needs, they focus on satisfying higher needs.

Consumers satisfy their need in following order:

#### I. Psychological needs

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<sup>3</sup> Lifestyle: The particular way that a person or group lives and the values and ideas supported by that person or group. (Cambridge Dictionary, 2021)

- II. Safety needs
- III. Social needs
- IV. Esteem needs
- V. Self-actualization needs

Figure 3 Maslow's Hierarchy of Needs



(Mcleod, 2023)

## 2. Perception

Perception is about the way we make sense of the worlds. Each of us has a particular view of the worlds, a perceptual map, which enables us to make sense of what is happening around us. We assemble this map by taking in information through our senses and using it to develop an understanding of how the world works and where different things fit into it. (Sethna & Blythe, 2019)

The marketplace's perception of a brand or industry is extremely important, which is why big brands work so hard to ensure that the general perception surrounding them, and their industry is as positive as possible. (Connolly, 2010)

### 3. Learning

Learning is the behavioral changes that result from experience. How we learn is critical to marketing communication, because marketers want people to remember the messages and act upon them in ways that are favorable to the organization. (Sethna & Blythe, 2019)

### 4. Beliefs and attitudes

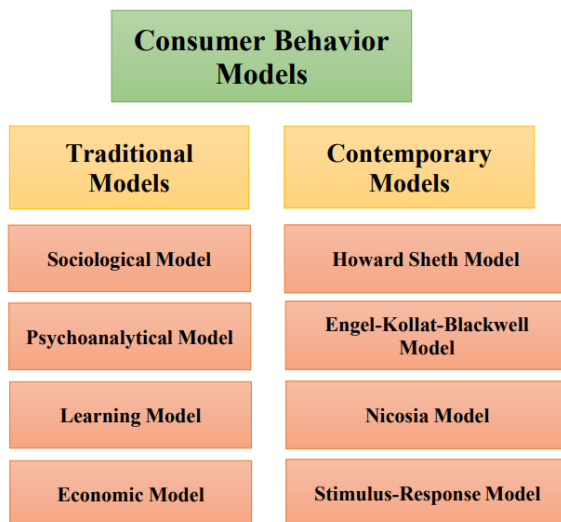
A consumer's beliefs and attitudes affect buying decision of a consumer. Attitudes consists of knowledge, feeling and proposed behavior. An attitude is a tendency to behave in a consistent manner towards a given stimulus; people tend to react the same way every time towards something about which they have an attitude. (Sethna & Blythe, 2019)

Beliefs are the way people think about a particular product or brand. (Sisk, 2018)

## 3.4 Consumer Behavior Models

For organizations it is very important to accept and understand the customer's feedback towards product features, cost and expression of interest and their impact on products and their competitive advantage. Let's focus on two most common model, the traditional models and the contemporary models. (Kelwig, 2022) Shown in (Figure 4).

Figure 4 Consumer Behavior Models



(Anjali J. , 2020)

### **3.4.1 Traditional models**

Traditional models consist of four models, Sociological Model, Psychoanalytical Model, Learning Model and Economic Model. They were created to better understand the economic system. (Anjali J. , 2020)

#### **a. Sociological Model**

Those models explain how an individual is affected and how individual affects by living in society. There are many organizations which can strongly influence consumer behavior, such as company environment, family membership of some cultural organizations. (Aravind, 2014)

#### **b. Psychoanalytical Model**

Psychoanalytical Model is based on fact that consumer behavior is influenced by conscious and unconscious mind. This theory was developed by Sigmund Freud where he explained three levels of consciousness (id, ego, superego). It is the source of all psychic energy and it is present from birth. The ego is developed from id and it is dealing with reality. According to Freud, at the age of five the superego is being developed and it is our sense of what is good and what is right. (Anuith, 2015)

#### **c. Learning Model**

From marketer's point of view, they use this model to understand how consumers react in some new marketing situations. It can also help to observe how consumers responded in the past in similar situations. Consumer's experience from one product of a company is usually used on other product of the firm. (Anjali J. , 2020)

### **3.4.2 Contemporary Models**

Contemporary models consist of following models:

- Howard Sheth Model
- Engel-Kollat-Blackwell Model



- Nicosia Model
- Stimulus-Response Model

a. Howard Sheth Model

The Howard Sheth Model was introduced by John Howard and Jagadish Sheth in 1969. It is an analysis of the social, psychological and marketing factors and its collective impact on the buying behavior or consumer's preferences. Howard and Sheth defined three stages that consumers go through when thinking about buying a product. (Howard & Sheth, 1969)

Stages of decision making:

- Extensive Problem Solving
- Limited Problem Solving
- Routinized Response Behavior

i. Extensive Problem Solving

In this stage consumer has no establish criteria for evaluating product or brand in that category. The customer and has no preference for a product or service. Consumer is looking for more information needed before the purchase. (Schiffman, Kanuk, & Hansen, 2008)

ii. Limited Problem Solving

At this level, the consumer has established for evaluating product or brand in that category. They have not fully established preferences concerning a select group of brands. (Schiffman, Kanuk, & Hansen, 2008)

iii. Routinized Response Behavior

In this stage after the consumer had enough experience with shopping of a particular brand. He knows strengths and weaknesses of the product, have experience with the product. It is easier for the customer to make purchase in the future, because this behavior becomes habitual with each purchase. The consumer goes slowly from Extensive Problem Solving in the beginning to Routinized Response Behavior and becomes a regular customer of a brand. (Team, 2020)

Howard Sheth Model has four major components: stimulus variables, response variables, hypothetical constructs and exogenous variables.

Stimuli Input Variables:

1) Significant

If brand elements such as price, quality, service, distinctiveness, and availability are communicated through brand objects (significates), the stimuli are defined and classified as *significant* stimuli. (Howard & Sheth, 1969)

2) Symbolic

Brand attributes represented by linguistic or pictorial symbols are communicated via mass media, billboards, catalogs, salesmen, etc., the stimuli from these commercial sources are classified as *symbolic stimuli*. (Sethna & Blythe, Consumer Behaviour, 2019)

3) Social

The third stimulus input variable is the information that the buyer's social environment provides for a purchase decision. The most obvious example is word-of-mouth communication. (Howard & Sheth, 1969)

Hypothetical Constructs:

1) Learning Constructs

The learning constructs are labelled motives - specific and nonspecific, brand potential of the evoked set, decision mediators, predisposition towards brands, inhibitions, and satisfaction with the purchase of a brand. (Howard & Sheth, 1969)

2) Perceptual Constructs

This describes the way of how the consumers obtain and process information from the input. This influence consumer's brand selection and purchase, it comprises: sensitivity to information, perceptual bias and search for information.

#### b. Engel-Kollat-Blackwell Model

This model was developed to describe the consumer decision-making components and how consumers decisions are made when they are choosing between alternatives. The Engel-Kollat-Blackwell Model shows activities which occur in the decision-making process over time. (Jisana, 2014)

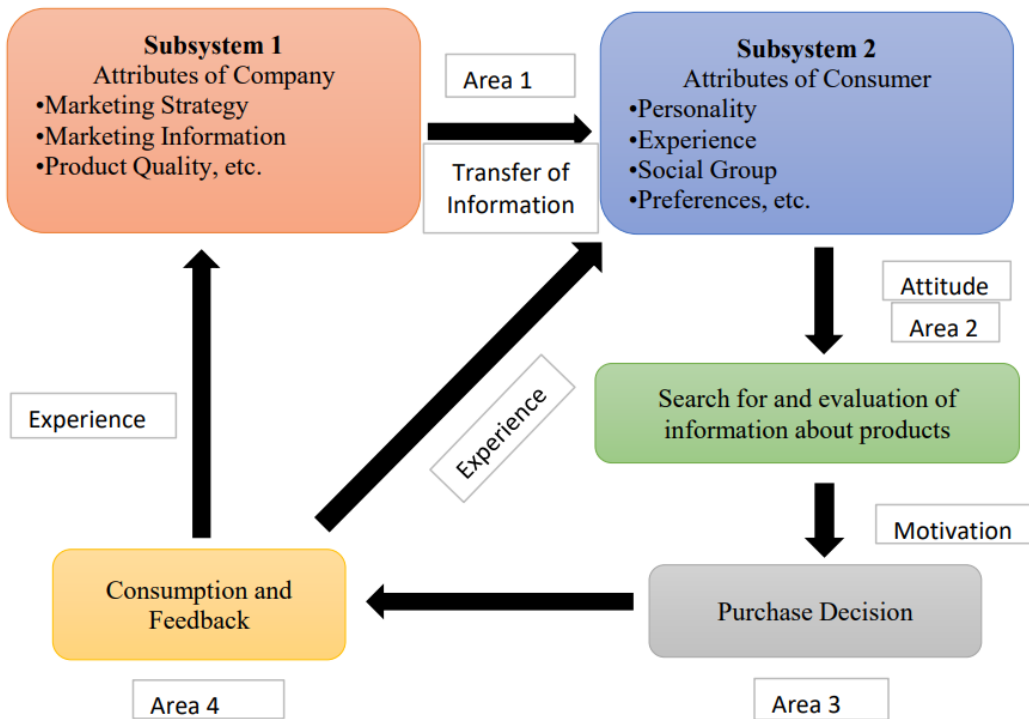
The activities are following:

- Information input
- Information Processing
- Product-brand evaluation
- General motivation influences
- Internalized environmental influences

#### c. Nicosia Model

A first approximation of the model consists of the flow: the firm its advertisement, the consumer's possible exposure to it, the interaction between advertisement and the consumer's predisposition to the product operating or evoked at the time of exposure, the possible formation of an attitude, the possible transformation of this attitude into a motivation, the possible conversion of this motivation into an act of purchase and back to the consumer's predisposition and back to the firm. (Naik & Reddy, 1999)

Figure 5 Nicosia Model



(Manoj, 2014)

Nicosia model is divided in four areas (see Figure 5):

- First area is consumer attitude which is formed by information from the market. Information goes straight to the consumer from very beginning.
- Second area is research and evaluation of information about the product.
- Third area is the act of buying the product.
- Last area is a form of feedback after purchasing the product, can be positive or negative.

#### d. Stimulus-Response Model

This model explains how consumer is making decision, while buying a product. Consumers mind is affected by stimulation from companies in order to buy a product. Marketers try to transfer consumer's wishes to real-time purchase.

### **3.5 Online shopping**

Today's world is changing very quickly, and we need to learn and follow the rules. Online shopping<sup>4</sup> is making things much easier and consumers are able to buy services and products just by pressing the button. Consumers can also make purchases no matter where they are or what time it is. There is also thing that influences consumers to by online.

#### **3.5.1 Determinants of Online Shopping Decision**

- Convenience

The biggest benefit of online shopping is the ability of making purchases anytime and customer services are available 24 hours a day. Some consumers also prefer online shopping to avoid personal interaction. Consumers also prefer online services which are provided 24/7 (Cheng Lu Wang, 2005)

- Information

It is much easier to find needed data. (Whysall, 2000) Even though consumers can not feel, smell or try the product, more information is given to the consumer. Consumers can also read products reviews before making a purchase. (Katawetawaraks & Wang, 2011)

- Available Products and Services

Some of the products are available only online and consumers can purchase them from all over the word and the transaction is also much easier. Many traditional retailers sells certain products only available online to reduce their retailing costs or to offer customers with more choices or sizes, colors or fatrues, etc. (Katawetawaraks & Wang, 2011)

- Cost and Time Efficiency

Online shopping offers the ability of time saving. Time is a common component of online and offline shopping. The digest difference in online shopping is that it saves time required to travel

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and reduces stress. Consumers are very sensitive to price of products. Cost is also very important whether consumers is satisfied with the purchase and people can buy same products online with lower price. (Vasic, Kilibarda, & Kaurin, 2019)

## **4 PRACTICAL PART**

The practical part consists of primary and secondary data collection which allow a better understanding of analyzed problems. In this empirical part, attention is paid to the quantitative analysis that was carried out as part of this bachelor's thesis. The data collection method is explained, and the individual types of analysis are described.

Primary data are being collected by spreading a questionnaire between respondents through social media platforms. This empirical method works with direct observation of reality.

Additionally, secondary data were collected, and then statistical conclusions were presented. These conclusions are finalized using index and regression analysis.

### **4.1 Methodology of data collection**

Data used in this empirical part were collected from publicly accessible statistical sources, such as Statista and CZSO. Those secondary data were edited and analyzed using Microsoft Office and SAS software. In order to obtain primary data collection, a questionnaire was created via Survio website. Hypotheses are the basis for creating the questionnaire, which are subsequently confirmed or rejected after the evaluation of the data. This questionnaire was distributed among people through various social media platforms.

Primary data is real-time data that is collected by researchers directly from main sources in prospective studies, while secondary data relates to the past and is data that was previously collected and made available for researchers to use for their own retrospective research studies. (Baker, 2020)

### **4.2 Index analysis**

For further analyzing purposes, chain based and fixed based index were used. It is the most frequently used method in values comparison. Fixed base index analyzes differences between the “base” which is the first value and the following ones. Chain base index works with comparison of current value with the previous value.

In Figure 5 There is a secondary data collection obtained from the Statista database. The selected data are based on time series from 2015 – 2022, showing the annual turnover of e-commerce in Czechia and the number of people shopping online in the Czech Republic.

Secondary data is data collected by someone else for a specific purpose, such as an opinion poll or a government census. Working with secondary data is time- and cost-efficient, particularly in the digital age, where due to the commitment by researchers, governments and other organizations to ‘Open Data’, large amounts of data is literally at our fingertips. In addition, such data has already been ethically approved and has high levels of validity and reliability, making it a great source for a student researcher. (Jones & Goldring, 2022)

According to fixed base index we can see that sales in online shopping in 2022 more than double since 2015. The popularity of online shopping is getting higher and higher every year, one of the reasons is the accessibility of online shopping from different parts of the world and the speed of order processing.

According to the chain base index, we can claim that the highest increase in online sales was in 2020, which can be attributed to the Covid-19 pandemic. During the pandemic, majority of shops were closed, which caused an increase in the demand for online shopping. There is a small 8% decrease in 2022, compared to the previous 2021, the reason may be the high inflation rate. The average annual inflation rate in December of 2022 was 15,1 %. (CZSO, 2023)



Figure 5 Analyzed Data Collection

Year	Annual turnover (in billion CZK)	Fixed base index	Chain base index	People shopping online (in thousands)
2015	81	1	-	2113,8
2016	98	1,21	1,21	2398,4
2017	115	1,42	1,17	2742,4
2018	135	1,67	1,17	3006,1
2019	155	1,91	1,15	3426,3
2020	196	2,42	1,26	4728
2021	223	2,75	1,14	5041,2
2022	197	2,43	0,88	5226,1

(Statista, 2023)

Figure 6 Descriptive Statistics

<b>MIN</b>	81	1	0,88
<b>MAX</b>	223	2,73	1,26
<b>MEAN</b>	150	1,85	1,14
<b>MODE</b>	-	-	1,17
<b>MEDIAN</b>	145	1,79	1,17
<b>Standart dev.</b>	51,5391668	0,64	0,12
<b>Coeff. of var.</b>	0,343594445	0,3436	0,1064

(Statista, 2023)

The average annual turnover from 2015 to 2022 is 150 billion CZK. Minimum annual turnover is 81 billion CZK, which was in 2015, on the other hand maximum annual turnover was in 2021 with 223 billion CZK, this was an absolute record with 14% year-on-year growth. There is no mode because no variable is present more than once. Median is 145 billion CZK, which is the middle variable in a set of data organized from smallest to largest. Coefficient of variation shows the ratio of the standard deviation to the mean. The coefficient is quite low, so the data is relatively stable.

Figure 7 Linear Trend Function (own processing)

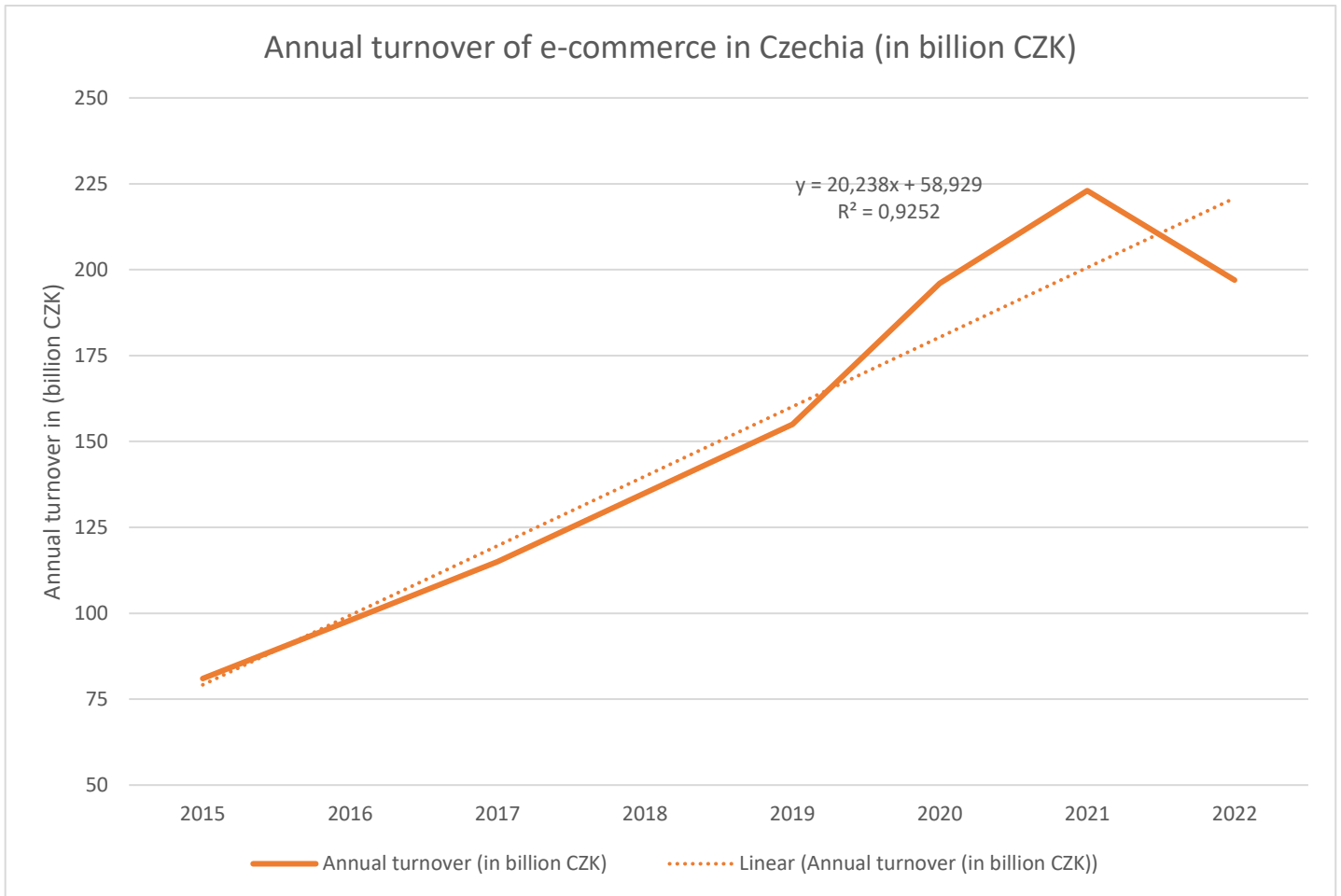


Figure 7 represents linear trend function  $y = 20,238x + 58,929$ ; where (+58,929) is an increasing slope, coefficient of determination is equal to  $R^2 = 0,9252$ ; which provides information about the goodness of fit of a model, in this case the trendline fits to this data.

### 4.3 Determinants of online shopping survey

#### 4.3.1 Respondent's demographic profile

Question 1: What is your gender?

Figure 8 Distribution of gender (Source: Author)

Gender	Number of respondents	In %
Male	66	22,1%
Female	233	77,9%
Do not want to mention	0	
<b>Grand Total</b>	<b>299</b>	<b>100%</b>

The distribution of the population of the Czech Republic based on gender is almost identical, data from 2021 show 50,7 % of women and 49,3 % of men. (CZSO, 2022) In this particular case, there are 77,9 % of women and 22,1 % of men. Based on those data, we could claim, that women shop online more often than men. One of the reasons is that women shop online more, because they need to take care of their families.

Question 2: What is your age category?

Figure 9 Age categories (Source: Author)

Age	Number of respondents	In %
less than 20	12	4,0%
20 - 25	51	17,1%
26 - 35	155	51,8%
36 - 45	33	11%
46+	48	16,10%
<b>Grand Total</b>	<b>299</b>	<b>100%</b>

According to data from Question 2, responses from different age groups are present. The most represented group is an age category from 26 to 35 years with 51,8%. The second most represented group with 17,1% is the age group 20 – 25 years old. The youngest generation of this questionnaire covers the smallest group of people shopping online. The reason why is that in such a young age, people study and usually do not have income or really small one.

### Question 3: What is your current occupation?

Figure 10 Occupation (Source: Author)

Occupation	Number of respondents	In %
employee - full time	193	64,5%
employee - part time	3	1,0%
entrepreneur	36	12,0%
student	30	10%
unemployed	1	0,3%
other	36	12,00%
<b>Grand Total</b>	<b>299</b>	<b>100%</b>

Full-time employees represent 64,5% of respondents, entrepreneurs, and other category both cover 12% of respondents. Under the other category, there are people on maternity leave (7%), seniors (9%) and people working full-time and being entrepreneur at the same time (3%)

### Question 4: What is your education level?

Figure 11 Level of education (Source: Author)

Level of education	Number of respondents	In %
Primary school	5	1,7%
Secondary school with degree	159	53,2%
Secondary school without degree	24	8,0%
University	111	37,1%
<b>Grand Total</b>	<b>299</b>	<b>100%</b>

According to answers collected, the majority of respondents have higher education level. 159 of people obtained degrees from secondary school and 111 of respondents obtained university degrees. Both groups together cover 90,3% of all respondents.

### Question 5: What is your estimated average monthly income?

Figure 12 Income (Source: Author)

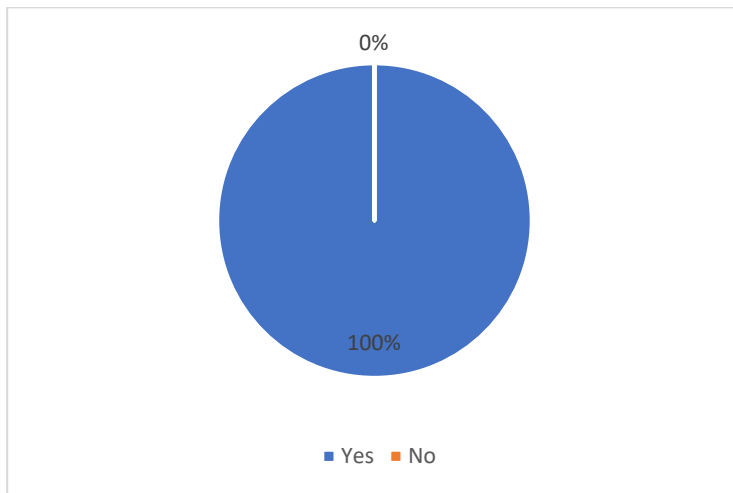
Monthly income	Number of respondents	In %
less than 25 000 CZK	66	22,1%
25 000 - 39 999 CZK	129	43,1%
40 000 - 54 999 CZK	66	22,1%
55 000+ CZK	38	12,7%
<b>Grand Total</b>	<b>299</b>	<b>100%</b>

43,1% of respondents stated that their monthly average income is between 25 000 – 39 999 CZK. Following groups with 66 respondents mentioned that their monthly average income is either less than 25 000 CZK, or between 40 000 CZK to 54 999 CZK.

### 4.3.2 Respondent's perception to online shopping

Question 6: Have you ever experienced online purchasing?

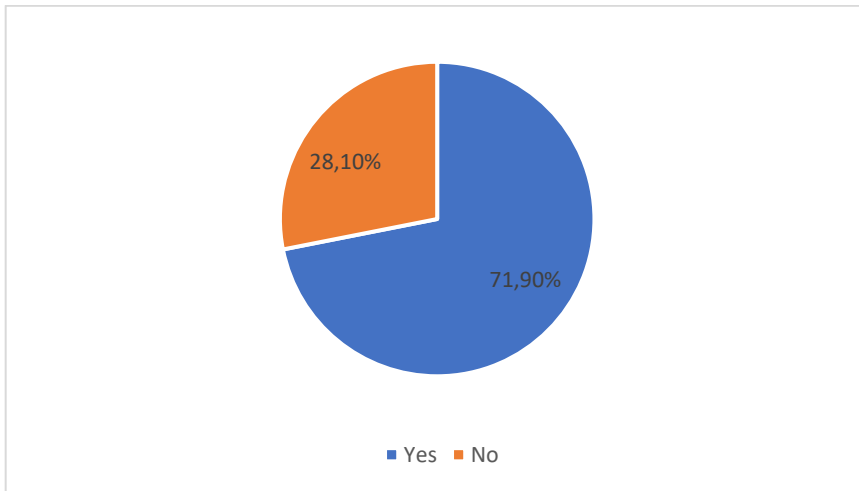
Figure 13 Respondents online shopping experience (Source: Author)



All 299 respondents (100%) have already experienced online shopping. The fact is that all respondents of this questionnaire answered in electronic form sent through social media platforms, thus it can be said that all respondents have at least basic or advanced knowledge about working with the Internet, which can lead to the conclusion why they have already experienced online shopping.

Question 7: Do you prefer online purchasing instead of going to the store?

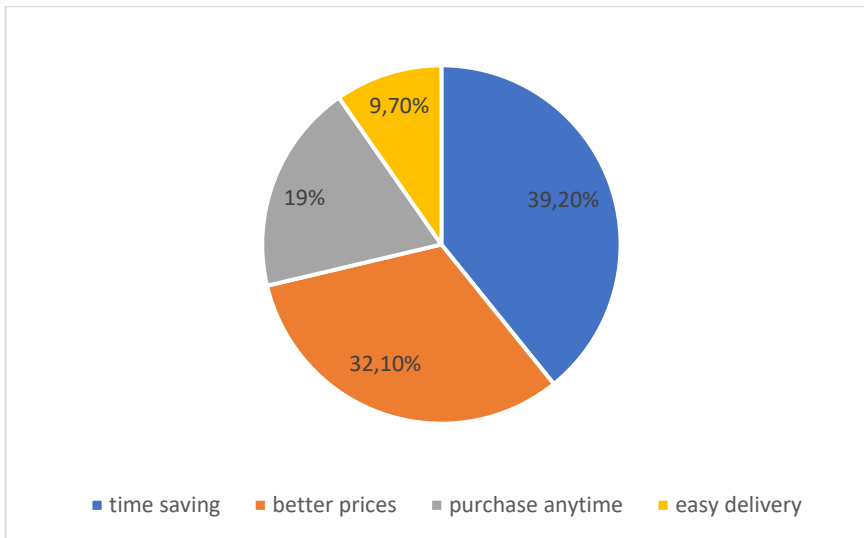
Figure 14 Respondents online shopping preference (Source: Author)



71,9% of respondents replied, they prefer online shopping instead of going to the store. There are many reasons for that, people's life is hectic, and they are looking for ways, how to make things easier and as quick as possible. This question is followed by Question 8, where for majority of respondents saving time is the key.

#### Question 8: What is the main advantage of online shopping?

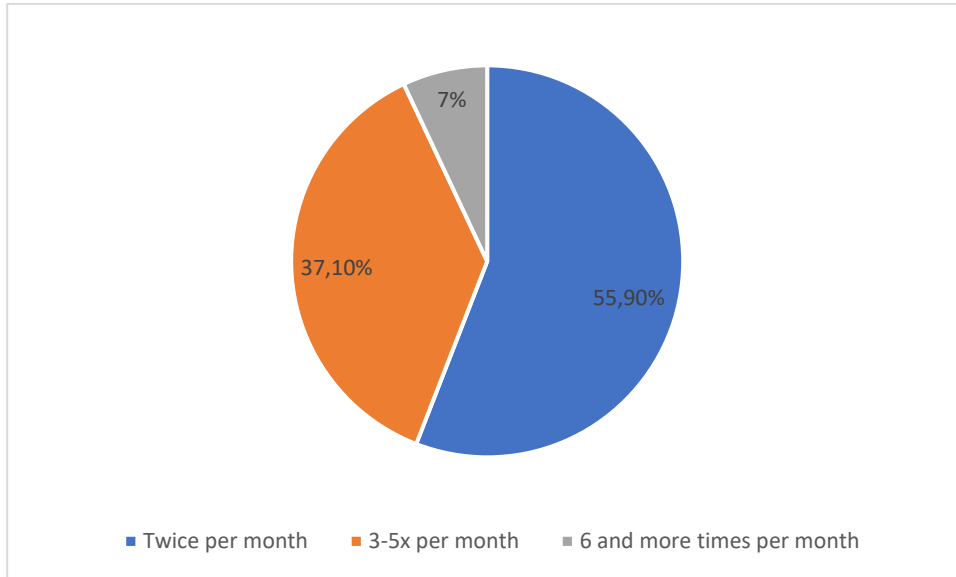
Figure 15 Online shopping advantages (Source: Author)



Time saving factor is the biggest advantage of online shopping for 39,2% of respondents. Consumers no longer must drive to the store, wait long lines for the cash register and spend so much time in the shopping mall. Another key factor that favors online shopping is the price of the product according to 32,1% of respondents. Online sellers are spared many costs associated with rental premises, salaries of sales assistants, etc. Those factors can be reflected in the price reduction of the products.

### Question 9: How often do you shop online?

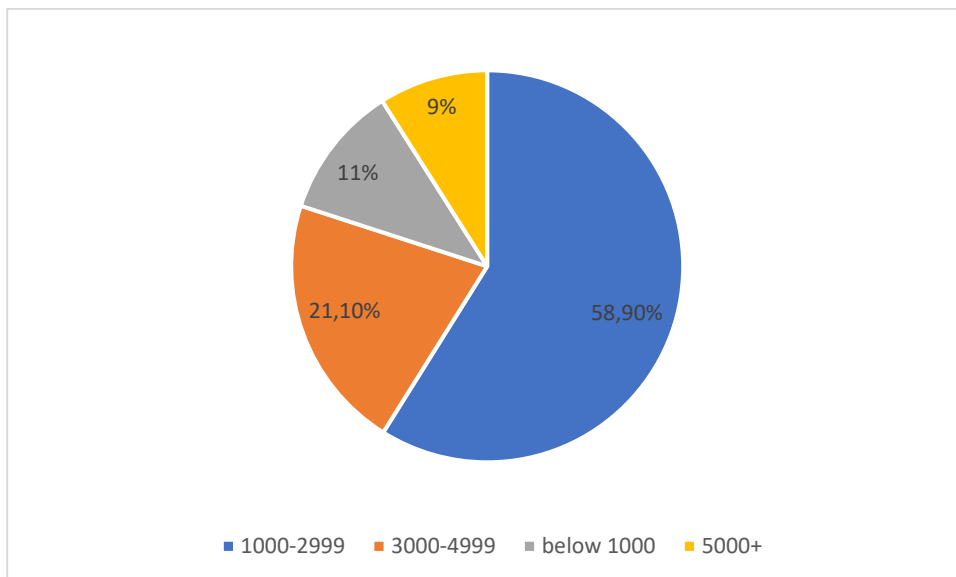
Figure 16 Frequency of online purchasing (Source: Author)



According to the results, we see that the majority of respondents (55,9%) shop online at least twice per month. 3-5 times per month shop 37,1% interviewed.

### Question 10: How much money per month do you spend on online shopping?

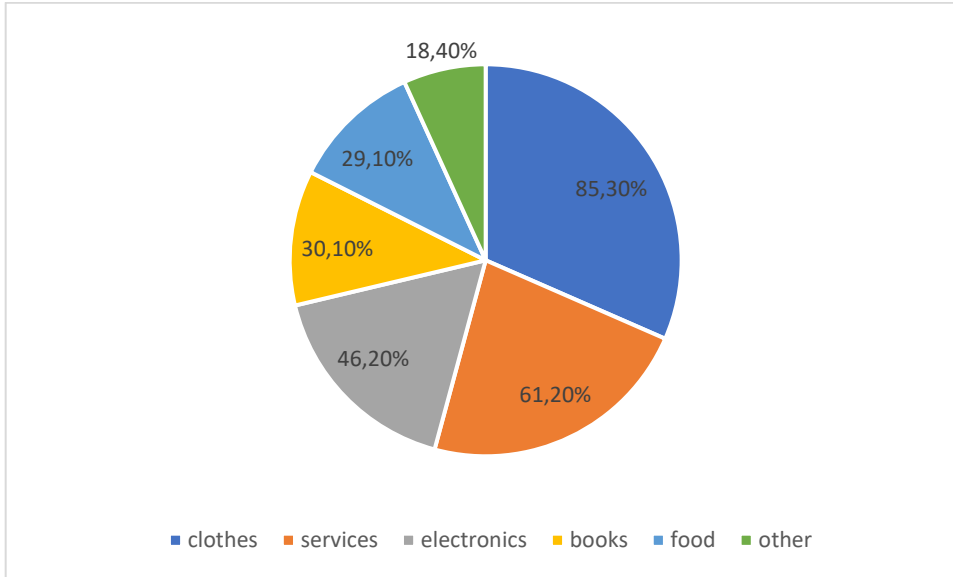
Figure 17 Money spent on online shopping (Source: Author)





### Question 11: What do you buy online?

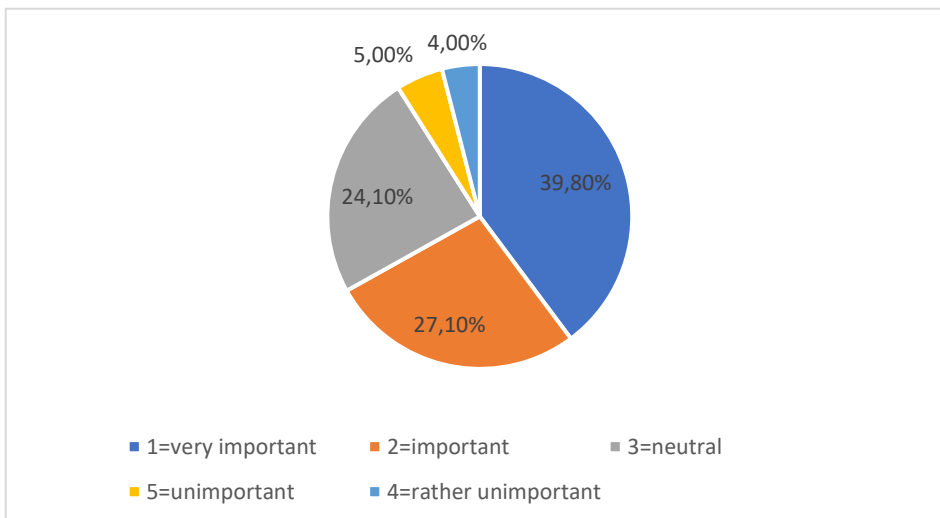
Figure 18 Items shopping online (Source: Author)



In Question 11, respondents could choose more than one factor they buy online. In most cases consumers prefer to buy clothes for themselves or others, 61,2% of people buy different kinds of services. Electronics takes the third place with 46,2%. About thirty percent of the respondents who took part in this research stated that buy food and books. Under the last group “other” with 18,4%, there are products such as: sports equipment, hobby equipment, home accessories or material for business purposes.

### Question 12: How important price is to you when choosing a certain e-shop?

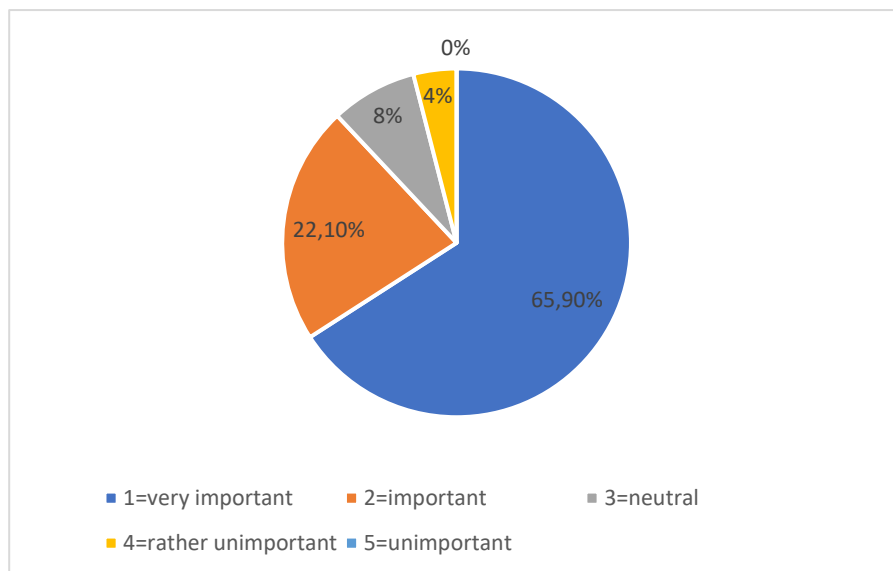
Figure 19 Importance of price (Source: Author)



Price is an important factor in 66,9% of cases. The main reason is high inflation, which has brought prices up and people are more careful about what they buy and for how much.

Question 13: How important previous positive experience is to you when choosing a certain e-shop?

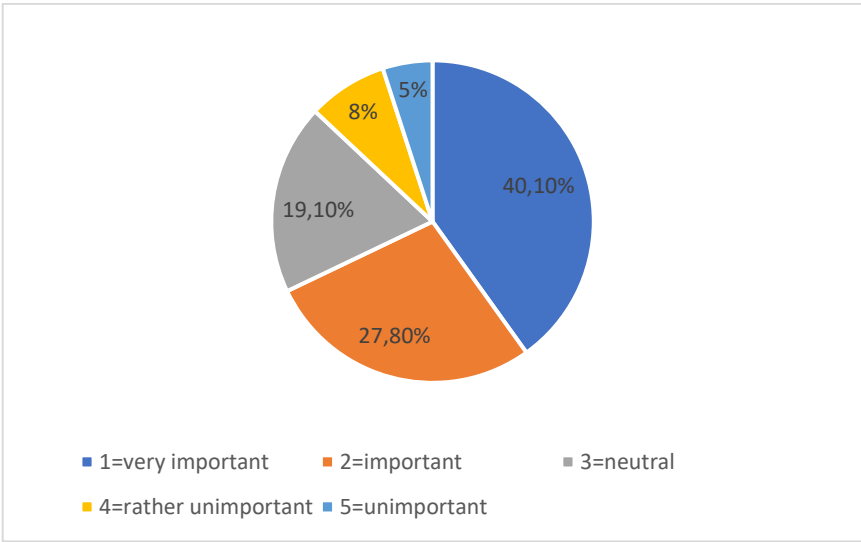
Figure 20 Importance of previous experience (Source: Author)



For a full 88% of respondents, a positive previous experience with an e-shop is important to them, people are afraid of unknown things and do not trust them. Their personal experience is even more valuable to them than positive reviews of other customers, see Question 14.

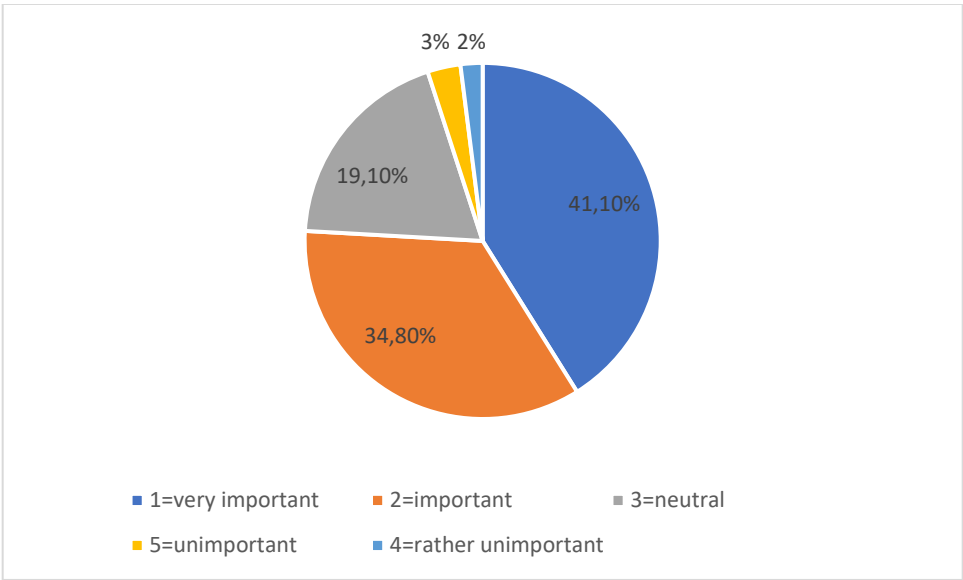
Question 14: How important positive review is to you when choosing a certain e-shop?

Figure 21 Importance of positive review (Source: Author)



Question 15: How important good customer service is to you when choosing a certain e-shop?

Figure 22 Importance of good customer service (Source: Author)



The results of Question 14 and 15 show that for people participating in this survey positive review and good customer service is very important to them. According to Question 14 it is about 40,1% and 41,1% according to Question 15.

#### 4.4 Hypothesis testing

For the purposes of this bachelor thesis, 3 hypotheses were created.

- H<sub>01</sub>: There is no significant relationship between gender and online shopping preference.
- H<sub>02</sub>: There is no significant relationship between age and online shopping preference.
- H<sub>03</sub>: There is no significant relationship between occupation and online shopping preference.
- H<sub>04</sub>: There is no significant relationship between educational level and online shopping preference.
- H<sub>05</sub>: There is no significant relationship between monthly income and online shopping preference.

H<sub>01</sub>: There is no significant relationship between gender and online shopping preference.

H<sub>1</sub>: There is a significant relationship between gender and online shopping preference.

$\alpha = 0,05$

Figure 23 Statistics for Gender and OS preference (Source: Author)

Frequency Percent Row Pct Col Pct	Table of Answer by Gender			
	Answer	Gender		Total
		Female	Male	
No	54	24	78	
	18.06	8.03	26.09	
	69.23	30.77		
	23.18	36.36		
Yes	179	42	221	
	59.87	14.05	73.91	
	81.00	19.00		
	76.82	63.64		
Total	233	66	299	
	77.93	22.07	100.00	

Statistics for Table of Answer by Gender

Statistic	DF	Value	Prob
Chi-Square	1	4.6390	0.0313
Likelihood Ratio Chi-Square	1	4.4176	0.0356
Continuity Adj. Chi-Square	1	3.9802	0.0460
Mantel-Haenszel Chi-Square	1	4.6234	0.0315
Phi Coefficient		-0.1246	
Contingency Coefficient		0.1236	
Cramer's V		-0.1246	

According to the Figure 23 results, p-value is greater than  $\alpha$ , therefore we reject null hypothesis.

Result: There is a significant relationship between gender and online shopping preference.

$H_{02}$ : There is no significant relationship between age and online shopping preference.

$H_{1}$ : There is a significant relationship between age and online shopping preference.

$\alpha = 0,05$

Figure 24 Statistics for Age and OS preference (Source: Author)

Frequency Percent Row Pct Col Pct	Table of Answer by Age				
	Answer	Age			Total
		26-35	36+	<25	
No	33	45	9	87	
	11.04	15.05	3.01	29.10	
	37.93	51.72	10.34		
	21.15	55.56	14.52		
Yes	123	36	53	212	
	41.14	12.04	17.73	70.90	
	58.02	16.98	25.00		
	78.85	44.44	85.48		
Total	156	81	62	299	
	52.17	27.09	20.74	100.00	

Statistics for Table of Answer by Age			
Statistic	DF	Value	Prob
Chi-Square	2	38.6456	<.0001
Likelihood Ratio Chi-Square	2	36.9650	<.0001
Mantel-Haenszel Chi-Square	1	0.2879	0.5916
Phi Coefficient		0.3595	
Contingency Coefficient		0.3383	
Cramer's V		0.3595	

In this case (Figure 24) p-value is < that  $\alpha$ , therefore we accept null hypothesis.

Result: There is no significant relationship between age and online shopping preference.

H<sub>03</sub>: There is no significant relationship between occupation and online shopping preference.

H<sub>1</sub>: There is a significant relationship between occupation and online shopping preference.

$\alpha = 0,05$

Figure 25 Statistics for Occupation and OS preference (Source: Author)

Frequency Percent Row Pct Col Pct	Table of Answer by Occupation						
	Answer	Occupation					Total
		Fulltime	Other	Parttime	Self	Student	
No	54	2	0	24	0	80	
	18.06	0.67	0.00	8.03	0.00	26.76	
	67.50	2.50	0.00	30.00	0.00		
	27.27	6.25	0.00	66.67	0.00		
Yes	144	30	3	12	30	219	
	48.16	10.03	1.00	4.01	10.03	73.24	
	65.75	13.70	1.37	5.48	13.70		
	72.73	93.75	100.00	33.33	100.00		
Total	198	32	3	36	30	299	
	66.22	10.70	1.00	12.04	10.03	100.00	

Statistics for Table of Answer by Occupation			
Statistic	DF	Value	Prob
Chi-Square	4	48.2091	<.0001
Likelihood Ratio Chi-Square	4	54.4987	<.0001
Mantel-Haenszel Chi-Square	1	0.0666	0.7964
Phi Coefficient		0.4015	
Contingency Coefficient		0.3726	
Cramer's V		0.4015	

p-value is < that  $\alpha$ , therefore we accept null hypothesis.

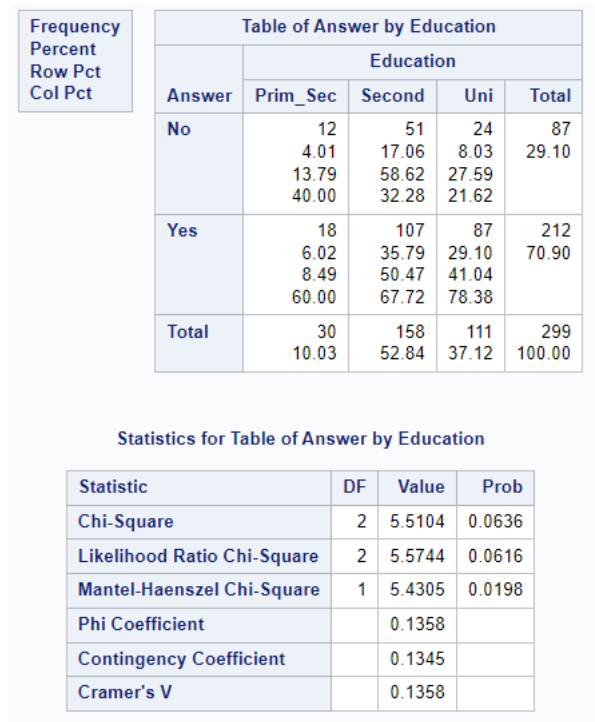
Result: There is no significant relationship between occupation and online shopping preference.

H<sub>0</sub>: There is no significant relationship between educational level and online shopping preference.

H<sub>1</sub>: There is a significant relationship between educational level and online shopping preference.

$\alpha = 0,05$

Figure 26 Statistics for Education and OS preference (Source: Author)



According to the result from Figure 26, p-value is greater than  $\alpha$ , therefore we reject null hypothesis.

Result: There is a significant relationship between educational level and online shopping preference.

H<sub>0</sub>: There is no significant relationship between monthly income and online shopping preference.

H<sub>1</sub>: There is a significant relationship between monthly income and online shopping preference.

$\alpha = 0,05$

Figure 27 Statistics for Income and OS preference (Source: Author)

Frequency Percent Row Pct Col Pct	Table of Answer by Income					
	Answer	Income				Total
		25-39k	40-54k	55+	<25k	
No	24	21	15	24	84	
	8.03	7.02	5.02	8.03	28.09	
	28.57	25.00	17.86	28.57		
	22.22	31.82	42.86	26.67		
Yes	84	45	20	66	215	
	28.09	15.05	6.69	22.07	71.91	
	39.07	20.93	9.30	30.70		
	77.78	68.18	57.14	73.33		
Total	108	66	35	90	299	
	36.12	22.07	11.71	30.10	100.00	

Statistics for Table of Answer by Income			
Statistic	DF	Value	Prob
Chi-Square	3	6.1633	0.1039
Likelihood Ratio Chi-Square	3	5.9440	0.1144
Mantel-Haenszel Chi-Square	1	0.8485	0.3570
Phi Coefficient		0.1436	
Contingency Coefficient		0.1421	
Cramer's V		0.1436	

p-value is greater than  $\alpha$ , therefore we reject null hypothesis.

Result: There is a significant relationship between monthly income and online shopping preference.



## 5 RESULTS AND DISCUSSION

Based on the results of practical part of the thesis, containing Index analysis, Descriptive statistics and Linear trend function, popularity of online shopping is increasing in long term tendency in the Czech Republic. According to Statista, as global internet access and adoption rapidly increase, with over five billion internet users worldwide, the number of people making purchases online is ever-increasing. In 2022, retail e-commerce sales were estimated to exceed 5,7 trillion U.S. dollars worldwide, and this figure is expected to reach new heights in the coming years. (Gelder, 2023)

According to primary data obtained from questionnaire survey, respondents' perception to online shopping is presented. The total number of respondents is 299, 233 women and 66 men. However, there is a limitation in the study, because proportion between men and women differs from the real-life proportion. Therefore, the questionnaire is more representative for women.

All 100% of respondents state that they have already experienced online shopping, and 71,9% of them prefer to shop online instead of going to the store. The majority of respondents (71,3%) find the biggest advantage of online shopping in time saving and better prices. About 55,9% of respondents shop at least twice per month and spend between 1000-2999 CZK.

In the next part, respondents answered what they most often buy online. According to the frequency of response, it was clothes, services, electronics, books, food and other items. Under the "other" category they most often state sports equipment, hobby equipment, home accessories or material for business purposes.

The most important factor people consider when it comes to choosing an e-shop is their positive experience in 65,9%. The second most important factor is good customer service (in 41,1% cases), then positive review in 40,1%. Surprisingly the importance of price when choosing e-shop (39,8%) was stated by the least number of respondents.

Based on the Categorical data analysis, previously stated working hypotheses are accepted or rejected.

H<sub>01</sub>: There is no significant relationship between gender and online shopping preference.

*According to the Figure 23 results, p-value is greater than  $\alpha$ , therefore we reject null hypothesis.*

*Result: There is a significant relationship between gender and online shopping preference.*

H<sub>02</sub>: There is no significant relationship between age and online shopping preference.

*In this case (Figure 24) p-value is < that  $\alpha$ , therefore we accept null hypothesis.*

*Result: There is no significant relationship between age and online shopping preference.*

H<sub>03</sub>: There is no significant relationship between occupation and online shopping preference.

*p-value is < that  $\alpha$ , therefore we accept null hypothesis.*

*Result: There is no significant relationship between occupation and online shopping preference.*

H<sub>04</sub>: There is no significant relationship between educational level and online shopping preference.

*According to the result from Figure 26, p-value is greater than  $\alpha$ , therefore we reject null hypothesis.*

*Result: There is a significant relationship between educational level and online shopping preference.*

H<sub>05</sub>: There is no significant relationship between monthly income and online shopping preference.

*p-value is greater than  $\alpha$ , therefore we reject null hypothesis.*

*Result: There is a significant relationship between monthly income and online shopping preference.*

## 6 CONCLUSION

The aim of the thesis is to evaluate determinants of online shopping. The goal of this work is to show how consumers think about online shopping and what criteria are important to them when shopping online.

Consumer behavior is a very broad topic, and it is still developing. Consumers have more demanding requirements, all depending on the rising standard of living. Just a few years ago, price was the most important factor for consumers. But today consumers care about their positive previous experience and good customer service.

It is important for online business to understand what consumers want and what is important to them. This is necessary in order to attract new customers, but also to keep existing ones. Practical implication of the results should be used for online retailers in making marketing strategies.

In the beginning of the thesis, several working hypotheses were stated and analyzed in the end. According to hypotheses there is no relationship between age, occupation and online shopping, but there is a relationship between gender, education level and income. Given the fact that people with lower incomes shop online less, there is a lot of space for marketers to reach this group of people. For example, by comparing the real prices of products from stores and e-shops. Many e-shops also offer a better price for products, as they do not have costs associated with the operation of stores.

As mentioned before, consumers do care about good customer service, this is another tip for retailers, how to keep existing consumers by providing good quality service or even provide some consultation for people with specific needs.

However, there are few limitations in this study, the sample size was small and presented bigger differences between male and female presence in the survey. According to this fact, the result cannot be accurately confirmed. The most represented group was the group aged from 26 to 35 years, a greater diversity of age representation would be beneficial for further investigation.

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## 8 APENDIX

### Questionnaire

1. What is your gender?
  - a. Male
  - b. Female
  - c. Do not want to mention
2. What is your age category?
  - a. Below 20
  - b. 20-25
  - c. 26-35
  - d. 36-45
  - e. 46+
3. What is your current occupation?
  - a. Student
  - b. full-time employee
  - c. part-time employee
  - d. self-employed
  - e. unemployed
  - f. other
4. What is your education level?
  - a. Primary school
  - b. High school with graduation
  - c. High school without graduation
  - d. University degree
5. What is your estimated average monthly income?
  - a. Below 25 000 CZK
  - b. 25 000-39 999 CZK
  - c. 40 000-54 999 CZK
  - d. 55 000+ CZK
6. Have you ever experienced online purchasing?
  - a. Yes
  - b. No
7. Do you prefer online purchasing instead of going to the store?
  - a. Yes
  - b. No
8. What is the main advantage of online shopping?
  - a. Time saving
  - b. Better prices
  - c. Purchase anytime
  - d. Easy delivery



9. How often do you shop online?
  - a. Twice month
  - b. 3-5 times per month
  - c. 6 and more times per month
10. How much money per month do you spend on online shopping?
  - a. Below 1000 CZK
  - b. 1000-2999 CZK
  - c. 3000-4999 CZK
  - d. 5000+ CZK
11. What do you buy online?
  - a. Clothes
  - b. Electronics
  - c. Books
  - d. Cultural experience
  - e. Food
  - f. Other
12. How important price is to you when choosing a certain e-shop?
  - a. 1 = very important
  - b. 2 = important
  - c. 3 = neutral
  - d. 4 = rather unimportant
  - e. 5 = unimportant
13. How important previous positive experience is to you when choosing a certain e-shop?
  - a. 1 = very important
  - b. 2 = important
  - c. 3 = neutral
  - d. 4 = rather unimportant
  - e. 5 = unimportant
14. How important positive review is to you when choosing a certain e-shop?
  - a. 1 = very important
  - b. 2 = important
  - c. 3 = neutral
  - d. 4 = rather unimportant
  - e. 5 = unimportant
15. How important good customer service is to you when choosing a certain e-shop?
  - a. 1 = very important
  - b. 2 = important
  - c. 3 = neutral
  - d. 4 = rather unimportant
  - e. 5 = unimportant