

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Management



Bachelor Thesis

The Advancement of Technology and its Impact on Consumer Behaviour

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

James Flottow

Business Administration

Thesis title

The Advancement of Technology and its Impact on Consumer Behaviour

Objectives of thesis

The objective of the thesis is to formulate, based on the research findings, a conceptual proposal of improvements in marketing programs of the given company built on a deeper understanding of consumer behaviour.

Methodology

The thesis will consist of two parts. First part should deal with an elementary theoretical overview. It should deal with the theory of consumer behaviour including principles, models, and its evaluation. The theoretical part of the thesis will be based on the critical review of information gained from the study and comparison of relevant resources. The fundamental, empiric part will be focused on consumer behaviour understanding in a given company. Data for the empiric part will be gained using appropriate data collection techniques – observation, interviews, and questionnaires. Based on the research, the relevant conclusions of the thesis must be drawn.

Recommended structure of the bachelor thesis:

1. Introduction – explanation of the topic importance.
2. Thesis objectives and methodology – the main objective of the thesis will be divided into partial objectives based on the knowledge gained from the study of the consumer behaviour theory. Appropriate methods of data collection and analysis will be explained in the methodology of the thesis.

3. Literature review – a critical review of current knowledge in the field of consumer behaviour, its models and marketing application.
4. Specification of the selected organisation – profile of the given company.
5. Practical part – analysis of data gained from own research according to the methodology.
6. Evaluation of results and recommendation – formulation of own proposal of improvements.
7. Conclusion – review of main results and evaluation of the contribution of the theses.
8. References
9. Appendices



The proposed extent of the thesis

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DECROP, Alain, 2017. Consumer Behaviour in Tourism and Hospitality Research. Bingley: Emerald GroupPub. 200 p. ISBN 9781787146914.

Journal of Consumer Behaviour,
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Journal of Consumer Psychology, ISSN 1057-7408

RUST, Roland T. a Anthony J. ZAHORIK, 1993. Customer satisfaction, customer retention, and market share. Journal of Retailing [online]. 69(2), 193-215 [cit. 2018-10-13]. DOI: 10.1016/0022-4359(93)90003-2. ISSN 00224359. Dostupné z: <https://linkinghub.elsevier.com/retrieve/pii/0022435993900032>

SMITH, Andrew, 2019. Consumer Behaviour and Analytics: Data Driven Decision Making. New York:Routledge. 217 p. ISBN 9781138592643.

SOMAN, Dilip, 2015. The last mile: creating social and economic value from behavioural insights. London: University of Toronto Press. 296 p. ISBN 9781442650435.

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Declaration

I declare that I have worked on my bachelor thesis titled " The Advancement of Smartphone Technology and its Impact on Consumer Behaviour particularly on Foreign Students in Prague" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on date of submission

15/03/2023 _____

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The Advancement of Smartphone Technology and its Impact on the Consumer Behaviour of Foreign Students in Prague

Abstract

This thesis reviews the advancement of digital technology, particularly in Smartphones, and how it has affected consumer behaviour of university students. The objective of this study is to show the impact of smartphones on the behaviour of students, particularly foreign students, when buying products online from their smartphones. This will be determined by evaluating the role smartphones play on the student's consumer behaviour and decision-making process. The target audience of this study are students currently studying in university. The first part of the literature review is an evaluation of consumer behaviour. Its importance, models, and the principles. While also looking at how marketers use consumer behaviour to benefit them. The second part of the literature review goes into depth about the effect of smartphones on students. Giving a brief history of smartphones and their importance for marketers. Finally, how university students use their smartphones and how it impacts their consumer behaviour.

The practical part of the thesis are statistics from an anonymous questionnaire. The purpose for the questionnaire was to get first-hand accounts from foreign students in Prague about their smartphone usage and operation. In the research it is suggested that smartphones play a considerable role in consumer behaviour. It can be indicated that with the results smartphones do play a role in consumer behaviour. In addition to that some applications have a definite impact on the consumer whereas other applications do not have an impact.

Keywords: Consumer behaviour, Consumerism, Black Box Model, Technology, Smartphones, Digital influences, Digital Marketing, Innovation, Connectivity, social media, Students

Rozvoj technologie chytrých telefonů a jeho dopad na spotřebitelské chování zahraničních studentů v Praze

Abstrakt

Tato teze se zabývá rozvojem digitálních technologií, zejména v chytrých telefonech, a tím, jak to ovlivní spotřebitelské chování vysokoškolských studentů. Cílem této studie je ukázat vliv chytrých telefonů na chování studentů, zejména zahraničních studentů, při nákupu produktů online ze svých chytrých telefonů. To bude určeno vyhodnocením role, kterou smartfony hrají na spotřebitelské chování a rozhodovací proces studenta. Cílovou skupinou této studie jsou studenti, kteří v současné době studují na vysoké škole. První částí přehledu literatury je hodnocení chování spotřebitelů. Jeho význam, vzory a principy. A zároveň posuzuje, jak marketéři využívají spotřebitelské chování ve svůj prospěch. Druhá část přehledu literatury se detailně zabývá vlivem smartfonů na studenty. Stručnou historií smartfonů a jejich význam pro obchodníky. A závěrem ovlivnění vysokoškolských studentů chytrými telefony a jejich konzumerismem a chováním.

Praktickou částí práce je statistika z anonymního dotazníku. Účelem dotazníku bylo získat informace od zahraničních studentů v Praze z první ruky o jejich používání a provozu chytrých telefonů. Výzkum naznačuje, že chytré telefony hrají značnou roli v chování spotřebitelů. Lze naznačit, že s výsledky chytré telefony hrají roli v chování spotřebitelů. Kromě toho mají některé aplikace jednoznačný dopad na spotřebitele, zatímco jiné aplikace dopad nemají.

Klíčová slova: Chování spotřebitelů, Konzum, Model černé skříňky, Technologie, Chytrý Mobilní telefony, digitální vlivy, digitální marketing, inovace, Připojení, Sociální media, studenti

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1 Introduction

The advancement of technology has helped improve students in their daily lives. Being better equip with technology has made everything they need and want instantly accessible and at their fingertips. In one lifetime technology has helped people exponentially; consumers have gone from buying newspapers and magazines to receiving information digitally, to being inspired by tailored online advertising, based on digital algorithms, which can influence their next purchase.

When looking at the present trends, it is observed that mobile computing has become a vital and integrated part of people's life. While both smartphones and laptops may provide access to universal information, smartphones have managed to outperform laptops in key areas. Smartphones are called that for a reason. They are powerful enough to provide users with anything they digitally desire. Smartphones serve multiple functions other than the basic need to verbally communicate and connect with people. Traditional mobile phones and landline telephones could only connect the user to one person at a time. A smartphone allows the consumer to connect to the entire world instantly. Applications such as WhatsApp, Facebook, Instagram, and others that can be easily accessed via smartphones, allow you to connect with whoever you want, regardless of geographical boundaries. (Backer, 2010). However, communication is only one of its functions. Smartphones also have the following functionality: camera, video capabilities, GPS location and navigation, email, voice dictation & note taking, banking and most importantly it allows one to connect to and browse the internet, becoming an integral part of our digital universe. Smartphone technology has created an environment which will continue to impact consumer behaviour, enabling seamless connections to products.

In this study, the advancement of smartphone technology will be reviewed, and the usage of smartphones will be discussed in particular how smartphones have and will continually affect the consumer behaviour of university students especially foreign students in Prague.

2 Objectives & Methodology

The assignment will centre on analysing the content of the advancement of smartphones and its impact on foreign student's consumer behaviour.

2.1 Objectives

The aim of this study is to evaluate the relationship between the usage of smartphones and how they affect the consumer of foreign students in Prague.

The research question: Have the advancements in smartphone technology impacted foreign student's consumer behaviour in Prague.

In this study, not only will the advancement of technology and its impact on the consumer behaviour of foreign university students be analysed. But also finding out the main influencing factors that affect students online and finding the trend between smartphones and the online buying behaviour of students. This will be done by:

- reviewing how the gender and age play a role in the way foreign students shop.
- determining if the device used to connect online plays a role in the way foreign students shop.
- verifying how the various influencing factors affect the time spent on a particular application.
- establishing if the research group uses an application more frequently, the higher you would rank the application.

These questions will be answered in the following thesis. The study will only focus on foreign students who are currently studying in Prague and use the answers given to answer the questions.

2.2 Methodology

This research paper is divided into two parts: literature review and the practical side.

The literature review consists of completing academic research and evaluating the theoretical work of scholarly professionals understanding of consumer behaviour. As well as looking deeper into how the Advancement of Smartphone Technology has affected University students Consumer behaviour.

The review will include a comprehensive summary of the published works by respected key industry players, other scholars work covering this topic, extracted from different universities or colleges and governmental websites. This will all be an objective evaluation on previous research and give a theoretical base for the research and help determine the nature of this research paper.

The practical component includes conducting questionnaires on a sample of respondents (foreign university students) in Prague, in order to find out their attitude and perceptions of how smartphone technology effects their consumer behaviour. The questionnaire was conducted in order to establish the students' opinions regarding online shopping and especially on the impact Smartphone technology has on their consumer behaviour. Initially, a sample questionnaire was issued to 5 people, to see if it was accessible and understandable. Changes were made from the suggestions put forward and a final questionnaire was distributed. The questionnaire was distributed on Microsoft Forms as it has an advantage of having sample templates as well as having basic and excellently categorized analysis of the data.

By using Excel and IBM spss quantitative analysis and comparative analysis were the methods utilized to analyse the data. The research will illustrate both similarities and differences between foreign students regarding smartphone consumer behaviour using the data obtained from the questionnaire.

- **H1:** Do gender and age play a role in the way foreign students shop.
- **H2:** Does the device used to connect online plays a role in the way foreign students shop.
- **H3:** How do the various influencing factors affect the time spent on a particular application.
- **H4:** Establishing if the research group uses an application more frequently, the higher you would rank the application.

Assumed that smartphones play a major role in university students' daily social life, and their consumer behaviour. The above hypothesis will be examined further in the practical part.

3 Literature Review

A literature review is a detailed description of past research on a specific topic. Coffta (Coffta, 2022) writes that the literature review examines academic papers, books, and other materials that are applicable to a certain field of study.

This review will be dedicated to what defines consumer behaviour and their importance. The central frame of the review will look into the main model and the principal factors influencing consumer behaviour, as well as research into the effect technology has on consumers and the role technology has affecting consumer behaviour.

3.1 Consumer Behaviour

Consumer behaviour is a theory that goes back to the late 1960s, and the Theory on Reasoned Action (TRA) was first introduced by Martin Fishbein and later extended by Fishbein and Icek Ajzen in 1970s. The theory is a mathematical model to help researchers predict the observable intentions of people as a behaviour of attitudes and subjective norms. (Icek & Martin, 1975)

Table 1: Defining Consumer Behaviour from various times.

Deaton and Muellbauer (Deaton, A; Muellbauer, J;, 1980)	Described in terms of opportunities on the one hand and desires on the other.
C.A. Cole (Cole, 2001)	Consumer behaviour encompasses mental and physical activities that consumers engage in when searching for, evaluating, purchasing, and using products and services.
Pindyck and Rubinfeld, (Pindyck & Rubinfeld, 2015)	Describe how customers distribute their income among various goods and services in order to improve their welfare.
Trudel (Trudel, 2018)	Sustainable consumer behaviour is behaviour that attempts to satisfy present needs while simultaneously benefiting or limiting environmental impact.

The previous table shows how the definition of Consumer behaviour has changed throughout the years, and it can be said that it is not a definite statement as it has many interpretations.

3.1.1 Defining consumer behaviour

Consumer behaviour can be defined as the study of how customers make decisions about their wants, needs, purchases, and actions in relation to a product, service, or organization. (Tyagi & Kumar, 2004). It is a study of the thought process and actions of the consumer that drives them to buy or use certain products. It also studies how their emotional, mental, and environmental states affect their buying behaviour.

Consumer behaviour insights are the foundation on which successful marketing and sales campaigns are based. Consumer behaviour affects pricing, placement (not only in brick-and-mortar stores but also online) as well as where and how the product is promoted (including online platforms etc).

Tan (2022) theorises that there are four types of Consumers behaviour.

i. Complex Buying Behaviour

Customers will show an elevated level of involvement particularly when they purchase expensive, risky, or seldom purchased goods. They will be heavily involved in the purchasing process and highly likely to do a lot of research and make comparisons before making the purchase. Buying a home or a car are examples of complex buying behaviour. (Tan, 2022)

ii. Dissonance-Reducing Buying Behaviour

The consumer is actively involved in the purchasing process but does not differentiate on brand. Usually, the purchases are infrequent, and the price may be high e.g., a washing machine or lawn mower. The consumer may make a choice based on price or convenience but may regret their decision after they have noticed that other brands are just as good or better – this is known as dissonance. (Tan, 2022)

iii. Variety Seeking Behaviour

The consumers try different varieties of a product (not because they were dissatisfied previously) but because they may want to try another brand. For example, buying a different breakfast cereal, or brand of clothing. (Tan, 2022)

iv. Habitual Buying Behaviour

This type of consumer buying behaviour occurs when there is little consumer involvement, little engagement with the product and shows no brand loyalty, as the differentiation between brands is low. This type of behaviour is used when purchasing low-cost products e.g., bread, sugar, milk etc. No research is done and is usually based on information from advertisements, which create brand familiarity but not loyalty. (Tan, 2022)

While consumers may exhibit typical consumer behaviour, it is important to note that the nature of consumer behaviour is not consistent and is influenced by:

- Personal factors – culture, personal interests, and opinions.
- Psychological factors – based on perceptions.
- Social factors – peers, social groups, and families.
- Environmental factors - physical surroundings, demographics and economic factors can affect consumer behaviour.

Consumer behaviour is constantly changing, and not all consumers behave in the same way or react equally to marketing campaigns, technological influences and/or advancements. Individual characteristics, variations in age, location, lifestyle etc need to be considered when defining consumer behaviour.

But understanding consumer behaviour is the key to connecting and engaging with the customer. (Burnett, 2011)

3.1.2 Importance of consumer behaviour

Consumer behaviour is important because it helps companies and marketers understand the wants, needs, and decisions of consumers in the marketplace. This information is crucial in developing effective marketing strategies, improving product design, and creating customer satisfaction. By studying consumer behaviour, companies can gain insights into

the factors that influence buying decisions, such as cultural, social, personal, and psychological factors. (Kumar & Shanmugam, 2013)

This understanding helps organizations to make informed decisions and effectively target their products and services to the right audience. Additionally, studying consumer behaviour can also provide insights into changes in the market, emerging trends, and shifting customer preferences, allowing companies to stay ahead of the competition and meet the evolving needs of consumers.

In Wicaksana's article "Consumer Behaviour," they summarise the importance of consumer behaviour. "Understanding consumer behaviour is important to marketers and business decision makers, as they need to understand why and what makes a consumer buy their product." (Wicaksana, 2021)

3.1.3 How Marketers utilize insights from the study of consumer behaviour for better business outcomes

Marketers make use of consumer behaviour principles and insights to design and execute marketing campaigns that are better suited to target their desired audience and drive conversions. This includes analysing consumer needs, preferences, decision-making processes, and purchase journey, to create and promote products and services that align with their expectations. By understanding consumer behaviour, marketers can tailor their marketing messages and strategies to influence consumer decision-making, increase brand loyalty, and foster positive brand associations. Ultimately, leveraging consumer behaviour knowledge helps marketers to optimize their marketing investments and achieve business goals. *"Development of information-communication technologies (ITC) gave a strong contribution to a human communication on a global level. The most significant contribution to the ICT sphere is certainly the appearance of the Internet which does not only represent the revolution in communication but in a way of managing over relationships with the user"* (Bognar, Puljic, & Kadezabek, 2019)

E-marketing, can be defined as digital marketing or online marketing, refers to the marketing of products or services using the internet and digital technologies.

Has access to a wider spectrum of potential customers than certain conventional marketing strategies. The business environment has grown increasingly competitive, and the entire world is now seen as a market from a global perspective. (Dann, 2010)

Principles how marketers use consumer behaviour to their advantage:

i. Consumer Distinction:

Consumer distinction is a technique used in marketing to identify one customer from another. This assists in creating a targeted group of customers who exhibit the same or related behaviour. (Kotler & Keller, 2016)

Even if a company has a specific consumer demographic, there may be differences between individual customers. Each consumer group is unique, and their demands and desires differ from those of other groups. When marketers understand the differences between each set of consumers, they can create various tailored marketing campaigns. Consumer distinction can assist the consumer in tailoring plans to the demands of various client segments. Consumer differentiation allows business to expand the reach and depth of their services. Businesses will then be able to service a larger number of individuals more effectively. *“It is crucial for entrepreneurs to understand their customer’s needs. We should understand that focusing on consumers is the key contributor to the marketing of the business practice. Entrepreneurs that have a thorough understanding of their customers can develop better products and services and advertise them more successfully.”* (Team, BPM, 2021)”

ii. Marketing Program:

Understanding customer behaviour enables businesses to develop successful marketing initiatives. Each campaign can target a certain set of customers depending on their behaviour.

When targeting a particular market, marketers may need to seek avenues such as TV advertising, online advertising, or blogs. Different message strategies will be needed for different customer groups. (CFI Team, 2022)

iii. Market Research:

Marketing research helps marketers understand what inspires customers to buy. The same motivation may be used in advertising media to pique the consumer's desire to make a purchase. Furthermore, marketers should base judgments about the brand logo, discounts, packaging, and gifts on customer behaviour. (Malhotra & Malhotra, 2019)

Analysis of consumer behaviour is the first opportunity to reveal a shift in market patterns.

Consumer behaviour research saves an organisation a lot of resources that would otherwise be spent on producing a product that is not going to be accepted in the market. The business will not spend its resources and money on a product that is unlikely to sell, as it is a waste of their resource and time. Based on their research of customer behaviour, the organisation determines a manufacturing plan that will save money on warehousing and marketing expenditures. (Babin, Zikmund, Lowe, D'Alessandro, & Winzar, 2020)

iv. Competitor Research:

Consumer behaviour research has also been useful in researching competitors' companies. Business may find answers as to what attracted customers to purchase from a rival or uncover weaknesses in their product portfolio by researching how the target market purchases items or avails services. With this information they can better position the company in a competitive market. Studying client purchasing patterns, for example, might assist in developing marketing plans to efficiently promote the best-selling items or raise awareness of the less popular but equally outstanding products. Paying attention to how the consumers think, on the other hand, might help design goods and services to improve their quality of life. (Fong, 2012)

v. Innovation:

If businesses want to succeed, they should be innovative in order to achieve the businesses' goal and objectives. We live in a time where technology is transforming the public's daily lives. Valuable possibilities are opening up for organizations who are prepared to take risks as technology advances. There are now efficient technologies that can create things faster, improve production, advertise the company to customers all over the world, and track the success. *“The smartphone with a camera will go down in history as one of the essential tools of this decade to hold people responsible for their words and actions. Along with social media, it can create a society that sides with justice over corruption”* (Bajarin, 2020)

Innovation can assist to maximize the business's success if they understand how to use available technologies. When businesses are seeking to minimize competitors and take market control, it might be difficult without proper information. Staying ahead requires innovation and funding. Many sectors are overcrowded with businesses that provide similar goods and services. However, if innovation gives clients distinctiveness, it might help the business stand out from the crowd in their industry. (Freeman, 1995)

vi. Staying Relevant in the Market.

With the world evolving as swiftly as it is now, the most difficult problem everybody faces is being current to our target market. Consumers today have more options and possibilities, which means they may quickly turn to a firm that provides superior products and services. By identifying trends early, a business can carefully plan itself to make the necessary changes.

“It is no secret that digital marketing is hot. The domain keeps growing stronger with every new development, and those who rise to the top will be ahead of the curve.” (Reaz, 2021)

3.1.4 Models of consumer behaviour

Consumer behaviour models have been created to support the various aspects that influence consumer behaviour and decision-making. The purpose of consumer behaviour models is to create a realistic pattern of customer decisions up until the sale, allowing businesses to direct the buyer's journey at each stage (Sucha, 2022).

i. Black Box Model

The Black Box Model (also known as the Stimulus-Response model) is a depiction of a customer's thoughts in the fields of marketing, science, and consumer behaviour. (Parker, 1963). This technique is useful for analysing customer purchasing behaviour and trends by observing their stimuli and responses.

The Black Box Model has three major components: Stimuli, The Buyers Characteristics and The Buyers Responses.

The Stimuli consist of external factors: The Marketing Mix which is collection of marketing tools and methods used to advertise and sell a product or service, it consists of

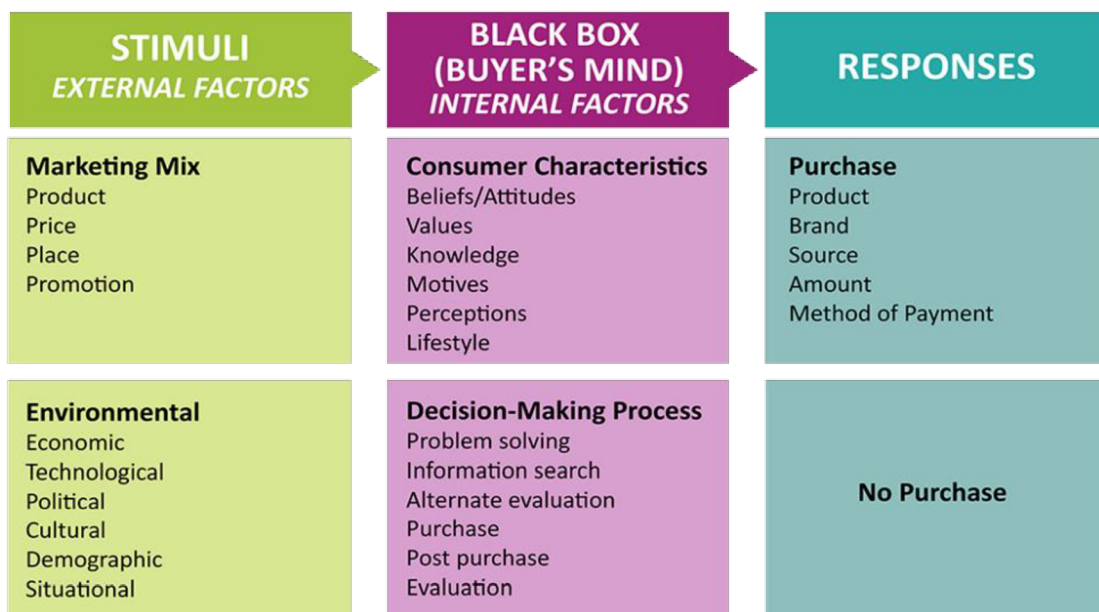
the four Ps of Marketing (product, price, place promotion), and the extended to seven Ps of marketing (where people, process, physical evidence are added) (Ajzen, 1991)

Other Environmental factors are included; Economic, Technological, Political, Cultural, Demographic. The Buyers Characteristics are internal. It makes up the consumer personality and their decision-making process. The consumer characteristics: Beliefs and Attitudes, Values, Knowledge, Motives, Lifestyle and Perception. The Decision-making process contain: Problem solving, Information search, Identify the alternatives, Purchase, Evaluation, and post purchase.

The buyer has no control over the external stimuli but can influence how it interacts with them, the buyer has some control over their characterise and can directly control how they affect their response. The Buyers Response happens after the purchase and depending on whether the consumer had a positive or negative response to the product if they would use the past experience when buying the product or brand again. (Esser, 2008)

Figure 1: Black Box Model

Source 1: (The "Black Box" of Consumer Behavior, 2016)



ii. Economic Model

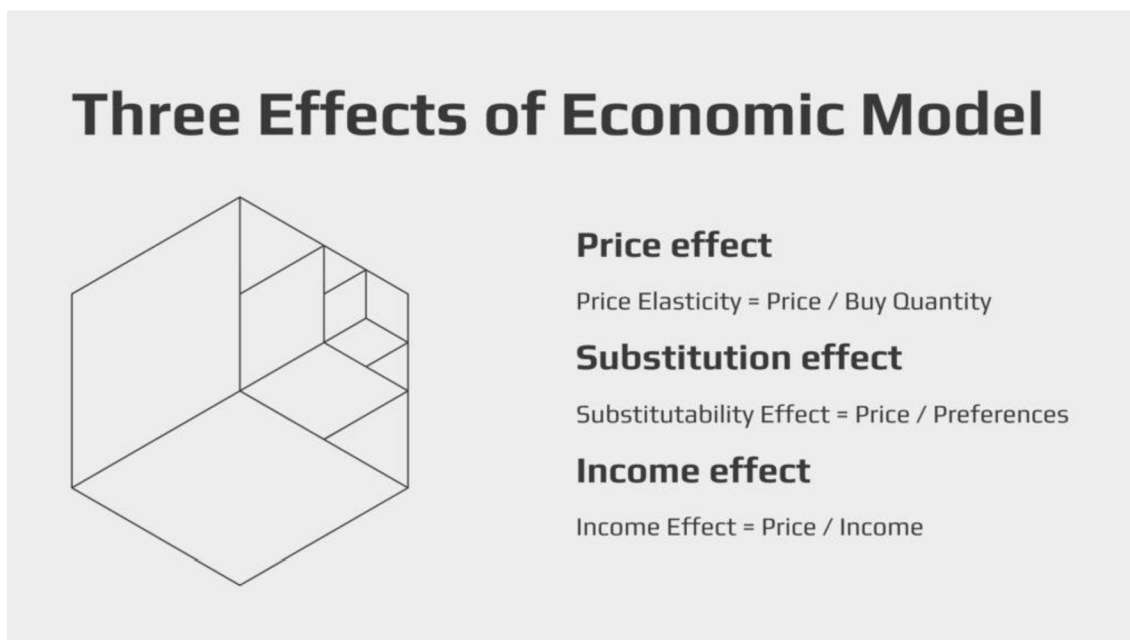
This model shows that consumers seek to satisfy their demands while using the fewest resources possible. According to (Schiffman & Kanuk, 2007), a consumer would need to be aware of all their consumption options, be able to accurately rate each one, and be accessible to choose the best course of action in order to act rationally in the economic sense. Additionally, people are frequently regarded as seeking acceptable options rather than the best ones. Which is discussed by Herbert Simons Administrative Behaviour. (Simon, 1976)

The economic model assumes that consumer behaviour is highly comparable and that the market displays a uniform pattern of consumer behaviour. The Income Effect, Substitution Effect, and Price Effect are the models' three pillars.

The income effect states that as a person's income rises, their purchasing power increases. The substitution effect states that when a substitute product is made available at a lower price, the original product will be less well-liked or used.

According to the pricing effect, consumers tend to buy more of a given product when the price is lower. (Bray, 2008)

Figure 2: Economic Model

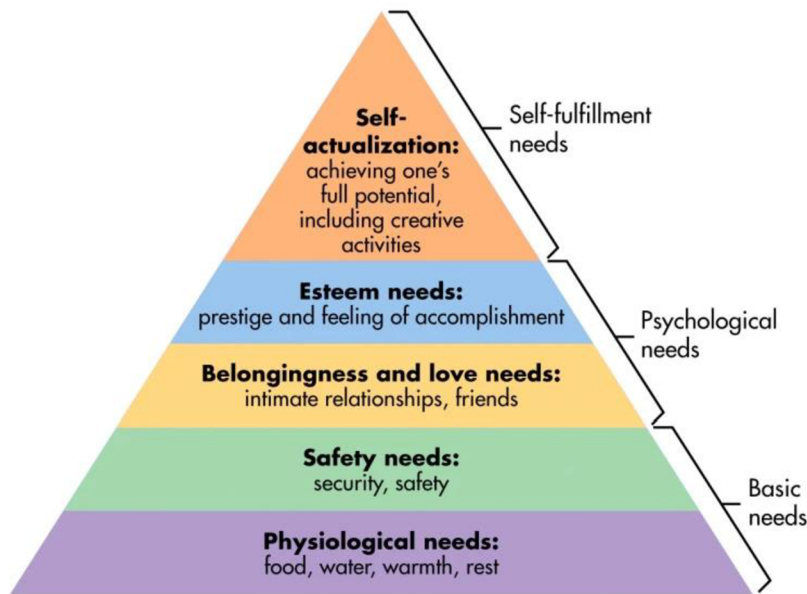


Source 2: (John, 2021)

iii. Psychological Model

In the mid-1900s, Abraham Maslow an American psychologist published the paper “A theory of human motivation.” He developed the theory as a classification system on universal needs that society is based on. He created the hierarchy of needs shown below.

Figure 3: Maslow Hierarchy of Needs



Source 3: (Maslow, 1943)

Maslow theorized that people have to satisfy their needs chronologically starting from their most basic at the bottom of the hierarchy before being able to fulfil the next level of need i.e., basic needs should be met, before psychological needs and self-fulfilment needs.

The bottom section are the most important everyday needs that all people must fulfil to live. They are basic human needs that are required just for survival including (food, water shelter). (Maslow, 1943) Psychological needs are included so the person can have stability and relationships (Friendships, being accepted by others, being loved by others). Self-actualisation is being the best person that one can be and is the last part of the hierarchy and can only be fulfilled if all other needs below it is meet, “*He suggests that the highest form of self-actualization actually transcends the self. We then strive to be selfless and contribute to something purposeful that is greater than ourselves*” (Greene, L; Burke, G, 2007). Therefore, self-actualization may also be about helping others to fulfil their needs, and the goal for individuals in western culture want to reach.

3.1.5 Principles of consumer behaviour

Marketers use various theories / models to identify consumer behaviour. For example: The Social Theory “suggests that individuals have both a personal identity and a social identity.” (Tajfel & Turner, 1986) Personal identity is made up of distinct personal qualities including talents and abilities, as well as hobbies. Internal elements such as personality, being motivated to get the product, the emotional state of the person, the perception in buying the product and previous experience the consumer had with the product influence the consumer behaviour. Social identity consists of the person specific attention to the company to which a person fits in to and may refer to a generation, a lifestyle group, faith group, academic group. Social factors consist of culture, exposure to the brand, belonging to social groups, scarcity of the product, the culture one belongs too. These are stimuli to the consumer. (Burnett, Introducing Marketing, 2011)

Internal factors

Internal impacts primarily stem from a consumer's lifestyle and attitude. These are the individual beliefs, emotions, attitudes, habits, motivation, and experiences of consumers. (Kotler P. , 2002)

i. Personality

A consumer's personality guides and directs the chosen behaviour to achieve goals in a variety of situations. To provide insight into the personality of consumers, the Big Five personality theory is often used. The five personalities include Openness, Conscientiousness, Neuroticism, Extraversion, Agreeableness. (Grohol & Cox, 2022)

ii. Motivation

Consumer motivations are stimulating forces that trigger behaviour. These give the behaviour a purpose and direction. There are numerous motivation theories, including Maslow's pyramid and McGuire's psychological motives.

However internal and external social factors and the consumer needs and wants all influence someone to buy a product. Consumers go through multiple processes while purchasing something: they decide, then they act. When it comes to decisions making process, the consumer's internal motives are the most significant, whereas external factors play a larger role in the decision-making process. (Sirotin, 2021)

iii. Perception

Consumer perception is a major influencer of consumer behaviour. Consumer perception is the process through which a customer gathers information about a product and interprets that information to construct a meaningful image of that thing.

When perception occurs, the meaning derived from a stimulus is transferred to memory.

When that meaning is stored in memory, it can be retrieved at a later time to support purchasing decisions. (Agyekum, 2015)

iv. Learning from Experience

When a person buys a product, he/she learns a little more about the product. Learning happens over time and through experiences. A consumer's learning depends on his personal skills and knowledge. While a skill can be acquired through practice, knowledge can only be acquired through experience. Learning can be both conditional and cognitive. In conditional learning, the consumer is repeatedly exposed to a situation, which causes him to develop a reaction to it. In cognitive learning, the consumer applies his knowledge and skills to find satisfaction and a solution for the product he buys. (Bowers & Summey, 1983)

External Factors

i. Marketing Mix

The Marketing Mix can be described as, “*a marketing tool that combines a number of components in order to strengthen and solidify a product's brand and to help sell the product or service*” (Umesi, 2022). The marketing mix is a framework used by marketers to ensure they are effectively addressing the needs and wants of their target market. The four Ps are considered interdependent, meaning that changes in one element can impact the others. (McCarthy, 1960)

- Product: refers to the goods or services a company offers to its target market.
- Price: refers to the amount of money a customer must pay to purchase the product.
- Place: refers to the channels through which a product is made available to customers
- Product: refers to the various activities a company undertake to communicate with its target market, such as advertising, public relations, and sales promotion.

ii. Family

People are social creatures, and they live with many people around them, all of whom can have an influence their buying behaviour. People try to emulate other people in order to be socially accepted. Families influence buying behaviour by developing preferences for certain products. As adults often adopt those preferences and buy identical products to those that we grew up with. (Ramya & Mohamed Ali, 2016)

iii. Friends

A person is also influenced by their friends, the people they associate with, as well as the role they hold in society. These identifiers influence the buying behaviour, as the individual will want to be included in the group or show their particular status.

“If a person holds a prominent position, their buying behaviour will be influenced by their status. Someone who is Chief Executive Officer in a company will buy based on their status, while a staff member or an employee of the same company will exhibit a different buying behaviour.” (Mothersbaugh, Hawkins, & Kleiser, 2013)

iv. Role and Status

The position we occupy in society affects everyone. The more status people possess, the more it influences what and how much they buy. (Rangaiah, 2021). Also influence can use the social statuses as negotiation tactic when purchasing more luxurious items, as it can be seen as a partnership between them and the company, the company will also use influential.

v. Cultural

Culture is a passed-down way of life and is frequently seen to have the biggest impact on how consumers behave. Cultural factors include the fundamental values, needs, wants, preferences, perceptions, and behaviours that are perceived and learned by a consumer from their close relatives and other important people in their environment. Marketers must be extremely cautious when assessing the cultures of various groups, regions, or even entire countries because the impact of culture on purchasing behaviour varies from country to country. (Bakkah, 2021)

vi. Sub-Culture

Within a cultural group there are many subcultures, and these subcultural groups share identical set of beliefs and values. Subcultures can accommodate people of various religions, castes, geography, and nationalities. These subcultures are in themselves a customer segment. The system of elementary values, perceptions, wishes, and behaviour that a member of society receives from the family and other important institutions in society. Cultural factors social class: Fairly permanent layers within society, whose members show a strong similarity in values, interest, and behaviour. (Schiffman L. , 2007)

Purchasing factors

These factors happen before, during and after the purchasing of the product. These factors have an effect as others will judge them on the choices they make. They affect the consumer decision making style and their approach to making choices. (Sproles, 1983)

i. Risk Reduction

In the pre-purchase phase of the purchase behaviour, the consumer's perceptions of the risk are a key factor. The definition of perceived risk is "*the consumer's perceptions of the uncertainty and adverse consequences of engaging in an activity*" (Dowling & Staelin, 1994) The two elements of risk are: Consequences, which refer to the level of significance or severity of a result, and uncertainty, which refers to consumer's personal judgement of the possibility of occurrence. Many consumers are frightened when take the risk of buying up market products due to the social risk and financial risk.

ii. Loyalty

Brand loyalty has a considerable influence on consumer behaviour. When a brand achieves elevated levels of customer loyalty, marketing activities are decreased since loyal customers help promote the company favourably. One of the most significant benefits of being a loyal brand is that customers will always continue purchasing your products during economic downturns. Loyalty reward programs strengthen the attitudes of customers as they receive points for purchase which can be used later to get a discount. They may also receive free upgrades, special privileges and access which is normal not available. (Emory University, 2013)

“Brand Loyalty drives large consumer engagement. The majority of consumers will always give the audience and also, want to be identified with a brand that has maintained its loyalty to them over time.” (Emory University, 2013)

iii. Brand switching

When a consumer chooses to purchase a different brand than their typical or customary brand, this is known as brand switching. Consumers switch brands for a number of reasons, including a lack availability of the normal brand or a desire for diversity or novelty in brand selection. In the competitive consumer products market. *“A great deal of marketing activity is targeted at brand-switchers. Rossiter and Bellman have proposed a classification of consumers based on brand-loyalty/switching behaviour.”*

(Rossiter & Bellman, 2005)

iv. Impulse buying

Impulse buying can be defined as: the act of buying something that consumers had not planned to buy, because they suddenly want it when they see it (Cambridge University Press, 2022)

Impulse buying is affected by external motivation such as store features and promotions, Internal factors such as satisfaction and identity, situational and product-related factors such as money and time availability, and demographic and socio-cultural characteristics such as gender and age. It is based on senseless reasoning. Marketers attempt to capitalise on this client behaviour in order to increase sales. Businesses try exploit the emotions of the customers to boost their sales. Impulse buying is using effective promotional messaging. (Mendenhall, 2014)

v. Environmental impact

Consumer today are becoming more aware of the impact they have on the environment. They now take a more active approach, trying to determine the number of pollutants caused by the product during manufacturing and transportation causing them to buy products that have less of a carbon footprint. Consumer and businesses are seeing the effects of climate change and are proactively trying to reduce their wastage and carbon footprint. Consumer are putting more pressure on business to act more eco-friendly, and this affects business trying to reach the client base. (Ghoshal, 2011).

Corporations use “green” marketing to show consumers how their product is positively impacting the environment, and the steps they are taking to reduce their carbon footprint. Green Marketing or sustainable marketing can be defined as, the marketing of products or services that are environmentally friendly. The goal of green marketing is to promote products and services that have a lower impact on the environment, while also appealing to consumers who are concerned about sustainability. Business show that they are better than the average, but this bias can backfire as it may come across as arrogant or superior when comparing themselves.

The world is trying to slow down and reverse climate change and by choosing the best business to help them has made business act in ways to reduce their carbon footprint to appeal to the client base. We can see this taking affect with biodegradable packaging, the cutting down of plastics and how organic fruit and vegetables are on the rise. *“In stark contrast to buying in person, buying online requires low effort—but the customer expectation is not necessarily different. Customers buy online because they expect choice, transparency about inventory levels and the ability to research prices, customer reviews and promotional offers.”* (Gramigna, 2022)

3.2 The Effect of Smartphones on University Student’s Consumerism

The widespread adoption of smartphones has had a significant impact on university students' consumerism. As Smartphones are one of the primary devices used by consumers to connect online - this section will examine the history of smartphones and how businesses use smartphone technology to control what the consumer sees and how it affects university students’ consumer behaviour. Students at universities are exposed to the evolving world and the constant technological progress. Due to such advancements in technology, the usage of conventional teaching methods that involve chalkboards, and printed textbooks and whiteboards has been supplanted. *“The most effective communication resources, computers and the Internet, are part of our daily life and have become one of the important tools in the education.”* (Ercan, Suhin, & Balta, 2010). Students have online access to all sorts of important academic research. Search engines are the most frequently used sources for students' projects because of the ease of access to free websites. Academic journals databases are particularly important for students doing

academic research as it allows them to group and sort subjects according to preferences of the students' specific fields. Digital technology has allowed students to access to all sorts of information at any time and from anywhere without the need for physical infrastructure. Smartphone computing has allowed students to be on the move and access the information they desire from reliable sources as easily as any computer.

3.2.1 A brief history of Smartphones

Mobile phones have been around since the 1980s, with Motorola producing the first-ever mobile phone for the public. It had only one feature: mobile calling. Soon phones became more accessible and cost-effective with Nokia becoming the front runner with its ground-breaking handset. In the early 2000s mobile manufactures set new standards as new features were added; mobile data, MMS (Multimedia Messaging Service), GPS (Global Positioning System) and most famously, the camera became standard. But it was only when Apple launched the iPhone in 2007, that it changed the mobile world, and the smartphones potential became fully realized. In 2008 the first Android phone was released, and smartphones become the most sort after modern technology to have.

“In 2022, the number of smartphone users in the world today is 6.648 billion, which translates to 86.34% of the world's population owning a smartphone. In total, the number of people that own a smart and feature phone is 7.26 billion, making up 91.16% of the world's population.” (Turner, 2022).

Touch screens, downloadable mobile applications and longer lasting batteries took over the market. Today, facial recognition, fingerprint scanning, secure mobile payments has allowed financial security of online purchases and banking; and enabled the consumer to find all that they need and want in a matter of a few taps on their smartphone. Processing technology has moved so fast in recent years that smartphones are at the peak of technology. Smartphones are computers that fit inside our pockets.

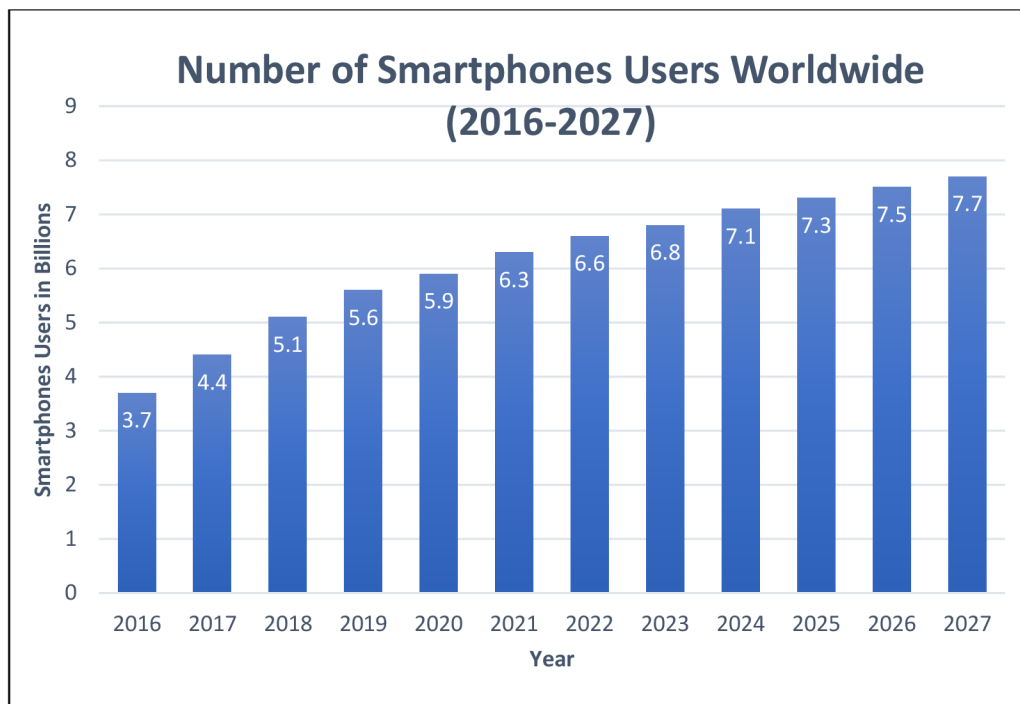
Android and iPhone are cemented as the biggest smartphone suppliers, and Samsung being the biggest global provider. (Eadicicco, 2017)

- Innovation: Both Apple and Android have a reputation for innovation and have been at the forefront of many of the technological advancements in the smartphone industry.

- **Ecosystem:** Apple and Android have created strong ecosystems around their products, which include hardware, software, and app stores. This has helped to create a loyal user base and drive demand for their products.
- **Brand Loyalty:** Apple and Android have established themselves as two of the most recognizable and trusted brands in the tech industry. This has helped them to build a large and loyal customer base, who are more likely to choose their products over those of their competitors.
- **Wide Range of Devices:** Both Apple and Android offer a wide range of devices at different price points, making it easier for consumers to find a device that meets their needs and budget.
- **App Availability:** Both Apple's App Store and Android Play Store have a wide selection of apps, making it easier for users to find the apps they need and want. This has helped to drive demand for their products, as users want to be able to access the latest and greatest apps on their smartphones.

Overall, the combination of innovation, ecosystem, brand loyalty, wide range of devices, and app availability has helped to make Apple and Google the two largest smartphone providers in the world. Today 5G networks are under construction with some network providers already implementing the new network which will provide people with unparalleled connectivity. It is known that today's Smartphones are millions of times more powerful than the computers that put the first space rocket on the moon. Those mainframe computers only had 64Kbyte of memory and could perform several hundred thousand operations per second – today's Smartphone can process around 3.5 billion instructions per second and have at a minimum 125Gigs of memory. This is why so many students use their smartphones in their everyday life. (Puiu, 2021)

Figure 4: Smartphone users worldwide



Source 4: (Statista Research Department, 2022)

3.2.2 The importance of Smartphones for marketers

People prefer to use Smartphones (compared to ordinary mobile phones) because of their multi-functionality and efficiency. Smartphones have many tools that increase one’s productivity, allowing one to collaborate with colleagues, creating and sharing information and even synchronising to other devices. Smartphones are used in every aspect of a person’s life: communication, work, education, banking, shopping, social interaction and networking, gaming etc (Soukup, 2015). Smartphones are also continuously connected to the internet, allowing people to be constantly connected with the digital world. These are the reasons why smartphone marketing is on the rise. The benefits of phone marketing are:

- i. Personal connection,
- ii. Increased interaction,
- iii. Faster Results,
- iv. Increased time spent on smartphones and
- v. More smartphones imply there is more consumer data.

i. Personal connection:

Convincing marketing opportunities can be ensured by developing a personal relationship. Successful marketing will always be either won or lost by communication. It makes no difference if businesses are promoting a brand, business, product, or themselves. Success usually results from personal and individualized connections. Consider the three main social media networks: Facebook, Instagram, and Twitter. The same principle still holds true despite the differences in these platforms: personal marketing is always successful. Businesses can sell their goods, create a community, and gain brand supporters if they can emotionally connect with the audience.

Four common themes that are necessary for individualized connection in marketing are:

- The importance of knowing the audience.
- Knowing your brand identity and tone of voice.
- Understanding the significance of both visuals and content
- Incorporating everything into targeting the market audience. (Page, 2017)

ii. Increased Interaction

A responsive website, email template, and landing page offer the best viewing and interaction opportunities inside the world of mobile marketing. They do not require much resizing, panning, or scrolling, are straightforward to read, and are easy to navigate. Customers are more likely to watch and respond to the message, when the content that marketers want them to read is simple enough for them to read it on their smartphone. Marketers can now have two-way, real-time conversations with customers on a worldwide scale. Increased consumer awareness and tailoring of the marketing approach to their particular requirements and desires are encouraged by this kind of connection. *“The value of interaction can clearly be seen in the examples of firms such as Disney, Shell, Heineken and Nestlé’s Nescafé who are creating online communities and enhancing customer identification with the brand”* (Arnott & Bridgewater, 2002)

iii. Faster Results

Most mobile users are always moving about. This implies that “content” must be simple to access when they are looking anything up. Customers (or potential customers) may decide to take a simpler route if marketers force them to use their phones to look for crucial

details like business hours, phone number, address, or email. To provide smartphone users with the best experience, marketers need to ensure that critical information is simple to find and use. The likelihood of closing the deal decreases the longer businesses' make a customer wait. Business salespeople can accomplish more and complete more deals if they move more quickly. (Holmes, 2020)

iv. Increased time spent on smartphones.

With data getting cheaper, the time people spend on the smartphones is increasing, and marketing companies have more opportunity to have their advert or content seen. Smartphone digital media is a gift for advertisers as it makes their company accessible to the consumer's immediately in a time when they expect to have everything at their fingertips. Consumers will be drawn in by marketing initiatives that are efficient and well-thought out. Businesses grow exponentially when their content is pertinent, appealing, and beneficial. The addition of latest items, services, discounts, coupons, and gift cards only serves to increase the allure of shopping. (Ogden, 2014)

v. More consumer data

The ability to see their target market unfiltered is one of the primary motivations for businesses to invest in consumer data. If marketers can have a better grasp of how their potential clients behave online, it will be easier for them to comprehend their purchasing and marketing behaviours. (Jelonek, 2017)

By using the information regarding a consumer and their consumer behaviour, which was collected via a smartphone app, brands can build a persona about a user and design strategies for advertising and marketing that best suits this persona. Algorithms are created to push notifications and alerts (often in real-time) so that user takes notice of the advert and makes the desired action – buying.

3.2.3 How University students use their Smartphone

Students at university spend around 8 – 10 hours a day using their smartphones. According to a recent survey done by Rhea Kelly (Kelly, 2017), 94% of students use their smartphones in class; from taking pictures of slides, accessing digital textbooks, googling answers in class, to browsing social media during class. The same survey found that students are willing to use their phones for various class activities. Students want more interactive and digital courses. The most commonly use applications that students use are social media apps, learning apps, and retail apps.

i. Social media apps

Social media refers to any online technology that enables communication between individuals through online networks and groups.

The majority of commonly used social media platforms are free. However, in addition to customary targeted advertising, they might also include paid add-ons. These platforms are accessible to students if they have an appropriate electronic device, an email address, or a phone number. There are many opportunities for students (including family, friends, professors, and other classmates) to digitally connect with others thanks to social media. Facebook, Instagram, Pinterest, YouTube and TikTok all have millions of students using them daily. *“The average college student spends 2 hours daily on social media platforms”* (Galanek, Gierdowski, & Brooks, 2018)

ii. Learning Apps

Students who use mobile learning apps do better in class because they have more control over various areas of their education. (Godwin-Jones, 2011)

- Convenient access to educational content: Students can access learning materials anytime, anywhere using their smartphones or tablets.
- Personalized learning: Many learning apps use algorithms to tailor their content to the student's needs and abilities.
- Interactive and Engaging: Apps often use gamification, interactive elements, and multimedia content to make learning more enjoyable.
- Immediate Feedback: Learning apps can provide instant feedback and help students track their progress, allowing them to identify areas that need improvement.

- Affordable and accessible: Compared to traditional education, many learning apps are low-cost or free, making education accessible to a wider range of people.

These apps include ToDoList, Evernote, Google Drive, Thesaurus.com, Duolingo, Grammarly. Additionally, using apps to learn is an unlimited method to increase student engagement and keep them in charge of making decisions about their education. (Godwin-Jones, 2011)

iii. Retail apps

Simply said, a retail app is a piece of software that enables online commercial transactions between customers and sellers. (Wohllebe, Dirrler, & Podruzsik, 2020)

The flexibility retail apps allow students to use them when their busy schedules cannot afford them to miss important classes etc. The convenience, times, and effort saved is valuable to students and all consumers alike.

According to the University of Connecticut, as result of the millennial population living on campus and increased on-line purchases, there may be logistical difficulties with delivery systems/ couriers delivering the goods speedily. However, this has been alleviated as new parcel delivery firms are emerging that cater to university students.

Food Delivery services are one of the most prominent retail apps that students use. The demand for online food services has rapidly risen due to covid, and students are fully using them. (Azman, Mashuri, & Syed-Omar, 2021) Claim that Shopify, Uber & Uber Delivery, Bolt & Bolt Food, Wolt, Amazon, and Ali Express have all made student life easier as these apps are effective, easy to use and easy to manage.

3.2.4 Student Consumer Behaviour

Today's students (Generation Z 1997 -2012). This group (Gen Z) of people has grown up in a world that is heavily influenced by technology and the internet, and as a result, they have a unique perspective and relationship with technology compared to older generations. Gen Z is known for being highly connected and tech-savvy, and they use digital devices and the internet as a central part of their daily lives. They are also highly diverse, both culturally and ethnically, and they value individuality and self-expression. (Dolot, 2018). While Gen Z's only use their smartphones for shopping 17% of the time, research done by the national retail federation (National Retail Federation, 2017) has shown that they are

also not afraid to spend money, having the spending power of \$44 billion a year according to research by Uniquely Generation Z. However, they are price conscious and will only buy when the product shows a mixture of value, quality, and ethical practices. This always-on generation is spending their money on clothing, food (and restaurants), and travel mostly. *“From a behavioural point of view, the attention span of Gen Z is quite short, caused by constant notifications and a constant flood of information. Their attention span is 8 seconds, while that of previous generations is 12 seconds. So, you only have eight seconds to introduce your brand.”* (Drees, 2020)

The use of Smartphones is vital to the Gen Z university students, as research has shown that 75% of students selected the smartphone as their device of choice for everyday use. This is followed by laptops (45%), desktop computers (30%), tablets (10%), gaming consoles (8%), smart TVs (3%), and wearable devices (1%). (National Retail Federation, 2017). Marketers have a challenging time when creating campaigns for University Students of this generation. Not only do they need to keep their advertising authentic and trustworthy, but they have only 8seconds to capture their attention and they have to compete with Social Media Influencers. 52% of Gen Z's / students are more likely to buy a product promoted by an influencer that they follow or like. (The Centre for Generational Kinetics, 2020).

3.2.5 Foreign Student Consumer Behaviour

The latest data from the Czech Ministry of Education, Youth and Sports shows that a record number of foreign students enrolled at Czech learning institutions in 2020. Over 17% of all students in degree programmes are foreigners in the Czech Republic. (Prague Monitor , 2021). Foreign students come to the Czech Republic in search of superior quality education, many opportunities to study in English, a good student life experience, and higher opportunities of employment once their studies are concluded.

But these foreign students may find it strange living in a new country: the language, the food and culture etc. These factors may influence their buying behaviour and patterns. According to Pride, Hughes, and Kapoor, (Pride, Hughes, & Kapoor, 2018) foreign students often buy items (particularly food) that reminds them of their home / origin.

3.3 Summation

Smartphone Technology is an extremely effective instrument for influencing and influencing customer behaviour. As the landscape continues to evolve, companies who do not embrace this technology will be forced out of the market. It has been projected that consumer behaviour will be fully impacted by information mostly processed on the internet and therefor via a smartphone. In a world in which modern technologies emerge all the time, organisations that prioritise consumer requirements will survive and thrive. Because smartphones are main electronic device for students, this research will help them understand how student's consumer behaviour is affected by their phones and will allow enable marketers use the smartphone to influence consumer behaviour.

The next part of the thesis will be practical research done by questionnaires.

The focus of the practical part of the thesis on foreign students buying behaviour when making purchases on their smartphone.

4 Practical Part

4.1 The Structure of the Questionnaire

The survey was sent out in the form of a Questionnaire, using a Microsoft Forms template, to determine the factors that affect the behaviour and decision-making of current foreign students between the ages from 18 to over 25 living in Prague.

Initially, a draft survey was distributed amongst close peers, to get feedback on the length of the survey, the types of questions asked and if they understood what was asked in the survey. Using their comments as a basis, changes were made to the survey. The questionnaire was shortened and some of the questions were structured differently.. The definitive version of the questionnaire was then distributed openly to all foreign students in Prague via study groups and social groups online. The survey consists of 4 sections: Basic information, Student life, Behaviour and Smartphone usage.

Basic information: Was used to find out general details about the respondents for example: Age, gender, current university at which they are studying, region of their nationality and how long they been living in the Prague.

Student life: Is about their online connectivity to other foreign students, and if they are a part of any online forums. It also asked what they are missing as a foreign student living in Prague.

Behavioural: This section is about their preferred device for online use. As well as how much time is spent using their smartphone for daily activities and their shopping preferences.

Smartphone usage: Collected information on how the respondents rank different applications according to how frequently they use them. As well as how frequently they use retail, educational, and social media applications and what influences them to use these applications.

The questionnaire was divided into these 4 sections, to easily categorize the data.

The questionnaire was distributed from 10th of February until the 3rd of March 2023.

4.2 Analysis of Respondents

This section of the thesis will go over the questionnaires four sections and the responses to the questions. Graphs will be used to graphically represent the information.

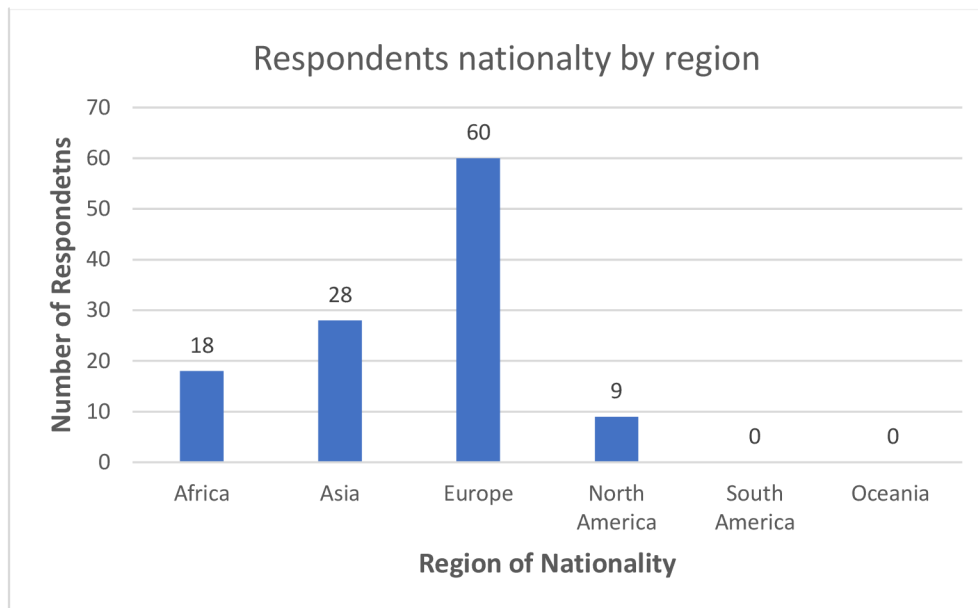
4.2.1 Basic Information

The first part of the questionnaire was Basic Information. Respondents were asked to provide their age, gender, current university, region of their nationality, and how long have they been living in Prague. In total 115 foreign students responded with a majority of 60 people being in the age range of 20-22 years old, 32 of the respondents were in the age group 23-25 and 23 respondents were older than 25.

60 respondents were male and 51 were female.

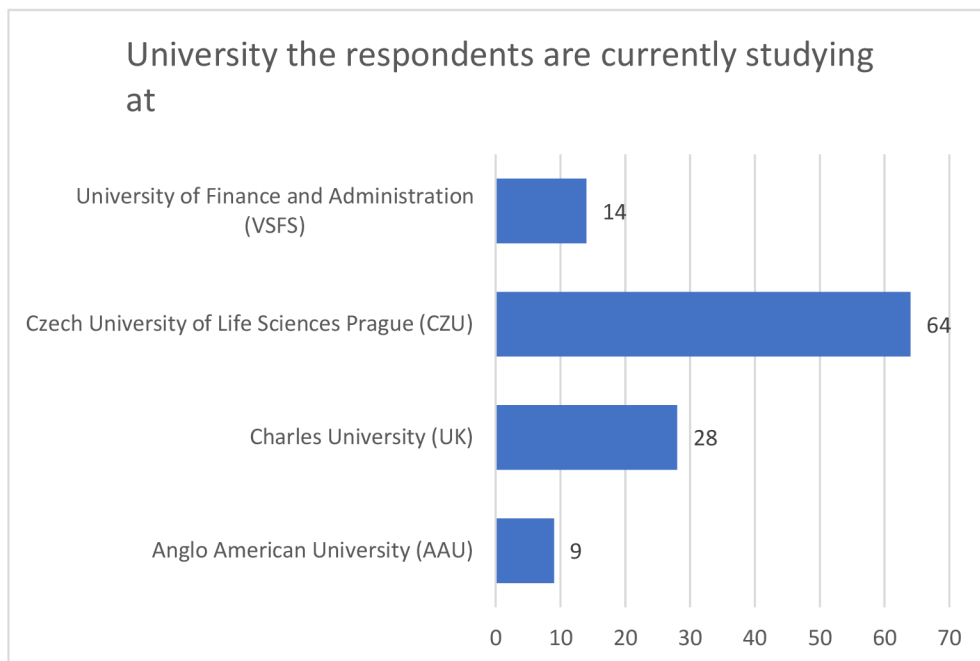
The bar graph below shows the region of the respondent's nationality.

Figure 5: Nationality of Respondents.



Most of the respondents come from Europe; this can be attributed to the Erasmus study program in Prague which is very popular. The questionnaire didn't receive any response from South Americans or Oceania natives.

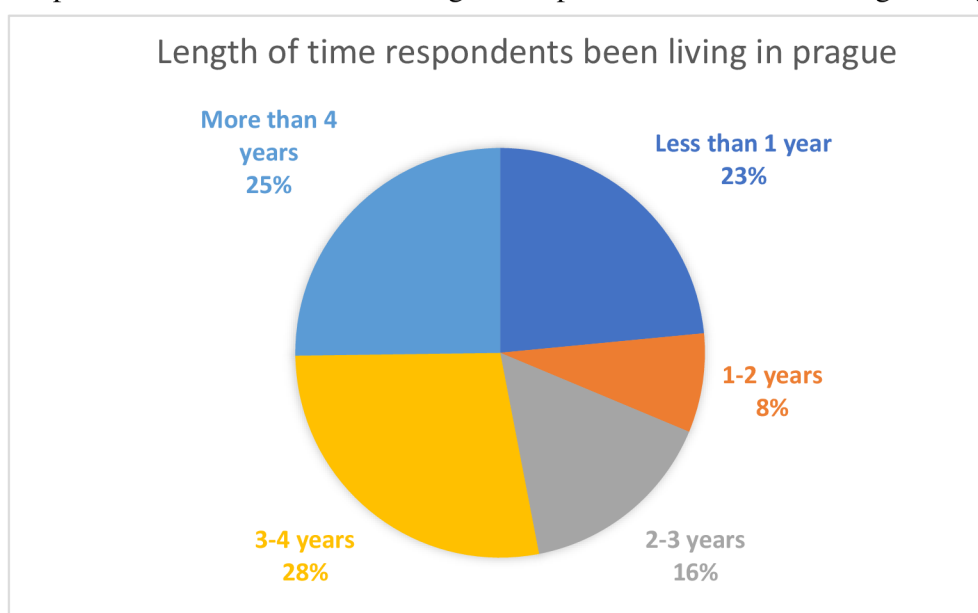
Figure 6: University currently studying.



The graph above shows which university the respondents are currently studying at. The 115 respondents come from these four universities. The main university is CZU as it was easiest to ask students in the same university. The other respondents come from different university that are in the same social groups.

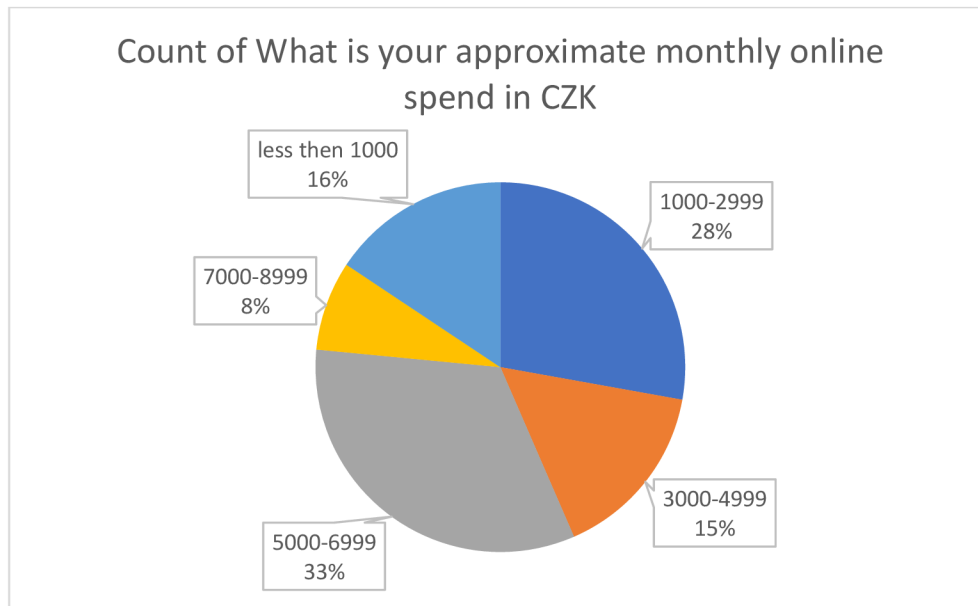
Figure 7: Years living in Prague.

The pie chart above shows how long the respondents have been living in Prague.



28% of respondents have been living in Prague for between 3-4 years. These are students in their final year of bachelor's studies. Also 25% of respondents have been living here less than one year. These are Erasmus students who have just come to Prague for this semester.

Figure 8: approximate monthly online spend in CZK.



This question was asked to understand how much money foreign students spend each month (excluding rent). The bar graph above shows the respondents monthly online spend. It shows that just under one third of the respondents have 5000-6999CZK online monthly spend. Converted to Euros it equal to 210-300. It is very surprising that the average is not higher, as the Covid-19 situation forced people to shop online, and the habits from then would have continued to date.

4.2.2 Student life

Question 6: Asked: Are you a member of an online group for foreign students?

The aim of this question determines if the person being asked is a foreign student and if they are a member of an online group for foreign students. This information is useful for various purposes, such as understanding the experiences of foreign students, identifying personal effects and experiences of foreign students, or conducting further research on international student communities; it is connected to the next question.

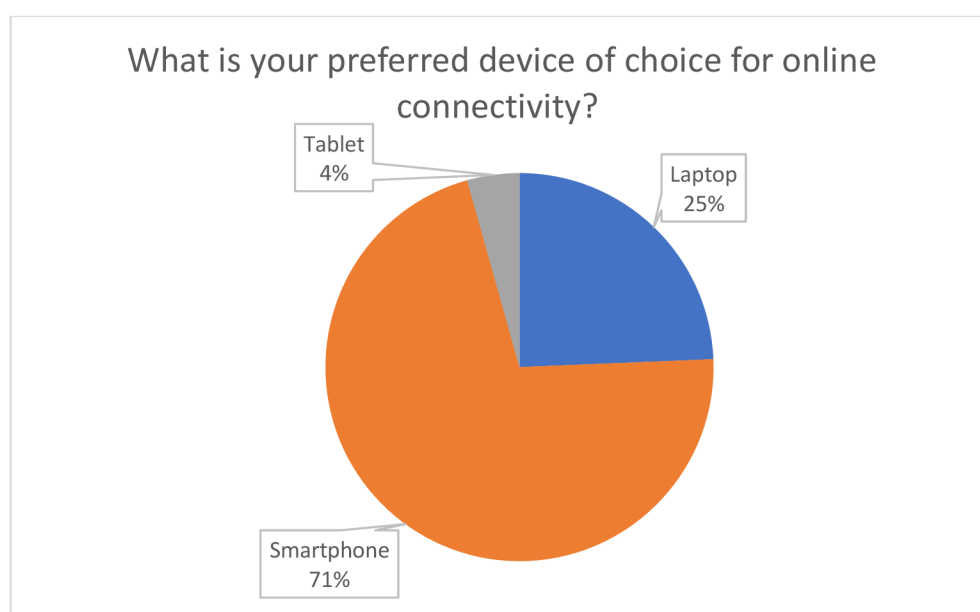
Question7: This was used to understand what type of online groups the foreign students were using and to determine the context of the online groups. The interaction of foreign students in online groups. 31% of the respondents are part of a social group for foreign students, 31% answered that they are part of an educational group, 22% said they are involved in a group that helps with references, 16% they are a member of groups for advice.

Question 8: This question was used to determine if for foreign students believe Prague is missing any type of resource or environment. Out of all responses the most common answer was about accommodation being more affordable or improved quality. Other respondents said what is missing is more social events for university students and more possible events for integration into Czech society.

4.2.3 Behaviour

Question 9: Using this question to find out what device foreign students use the most to connect online with and the order in which they rank the different devices. 71% of the respondents answered that their smartphone is their most preferred device. 24% selected laptop and 4% choose tablet as their preferred device for online connectivity.

Figure 9: Preferred device for online connectivity.



Question 10: Asked how long do the respondents spend on various activities every day, using their smartphone? These activities included social media, learning, online shopping, gaming, banking, etc.

Social media apps, watching videos and learning are the activities that are done the most using their smartphones.

Banking, calling, and messaging are the least time-consuming activities.

Figure 16 is added to appendix. The graph is very interesting as it shows the number of hours that is spent on each type of application and how some apps take more attention compared to other apps.

Question 11: Although students use their smartphones extensively, this question revealed that 72% of respondents preferred to shop in stores rather than online. This is surprising as one would assume that more online shopping would be conducted by this generation. However, as most foreign students cannot speak Czech and they can see and understand the different product information when in a shop. Compared to online where an app translates for you and often translates incorrectly.

Also, coming out of the Covid-19 period which encouraged all consumers to shop online, the inclination to shop instore has become more common.

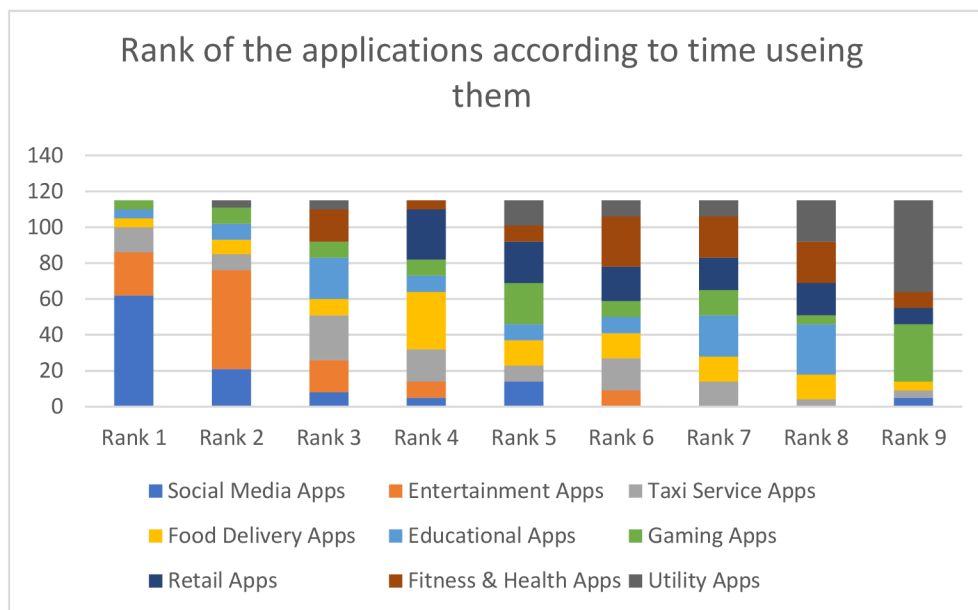
Question12: In line with the information provided by (The Centre for Generational Kinetics, 2020), the respondents of the survey 51% say they regularly Google products before buying them however 32% said they did not often do this and 12% never Googled the products before buying. Figure 19 shows the bar chart.

Question 13: 41 % of all respondents have a monthly online spend above 5000 Kc. 44% of foreign students have an online spend between 1000-4999 Kc. 15% have a monthly spend below 1000 Kc. Figure 20 shows the graph information.

4.2.4 Smartphone usage

Question 14: Is a ranking type of question. Its purpose is to order or prioritize a list of different types of applications based on how frequently the respondents use them. This will determine which application is most popular and widely used.

Figure 10: Rank of applications



We see that social media is the number one ranked application, and entertainment is the second most used app. This coincides with the findings published by David Curry (Most Popular Apps (2023)). Where it shows that globally the most downloaded app in 2022 the top7 are social media applications, then the next 2 are gaming apps and the tenth most app is an entertainment app.

Question 15: The question is asking the respondent to identify the most significant factor that affects their buying behaviour or decision-making when using certain online retail applications. It is observed that necessity and social media are the most influential factors. The graph is in the appendix labelled as figure 21.

Question 16: These questions were asked to see how often foreign studies use retail apps. The respondents will frequently use taxi service apps, food delivery apps and ISIC. But will seldom use Amazon, Alza and event ticket bookings. The graph is in appendix Figure22.

Question 19: Similar to question 16, it was to find out how frequently the respondents use educational apps. Most of the respondents use Moodle and Microsoft Office. This is due to university work have been done on these two apps. Some respondents also use language apps, maybe to learn other languages like Czech to help them connect better while living in Prague. Also, apps that help with studying like Chegg and Quizlet are used occasionally.

Question 22: Asked how much time responders use social media apps.

Majority of all respondents use social media apps in their daily life. Very few responders say they never use social media apps this can be due to cultural differences. According to survey engine research. (Walsh, 2022). The most used social media apps are Facebook, YouTube, WhatsApp, Instagram, TikTok, Snapchat, Pinterest, Reddit, LinkedIn, and twitter. When comparing this research with this data, it shows how similar the answers are to the research done by survey engine research.

5 Results

5.1 Results

The results and discussion will include cross tabulation or contingency tables, to show the relationship between two or more categorised variables.

For this study, crosstabulations between the social demographic data and the usage of their smartphone's variables, (where it is daily activities using their smartphone, types of applications used and the frequency in which they are used) will be explored. The goal is to determine if there is any association between these variables. Using IBM spss and excel pivot tables to create contingency tables.

Table 2: Correlation between Gender & Preferred device

What is your preferred device of choice for online connectivity?	Man	Prefer not to say	Women	Total
Laptop	13.9%	0.9%	9.6%	24.4%
Smartphone	34.7%	2.6%	33.9%	71.2%
Tablet	3.5%		0.9%	4.4%
Total	52.1%	3.5%	44.4%	100.0%

The contingency table above shows the relationship with the respondents' gender and which device they prefer to use for online connectivity.

It is noticed that 71.2% of all respondents preferred their smartphones over a tablet or laptop. Smartphones being the number one choice is most probably due to the availability of powerful smartphones, the variety of choice of smartphone and the affordability of them. Comparatively, laptops and tablets are more expensive, having less variety and less value for money for a student. The portability of smartphones gives them an advantage over the other devices and their connectivity to the internet through Wi-Fi and mobile data allows continuously connected. Whilst more male interviewees choose the smartphone with 34.7% over female responses being 33.9%, and male respondents also had a higher response to laptops and tablets compared to females, this could be attributed to more male respondents to the questionnaire.

Table 3: Correlation between gender and university.

		What is your gender?			
		Count	Man Count	Prefer not to say Count	Woman Count
Which Czech University are you currently studying at?(Abbreviate)		9	0	0	0
	Anglo American	0	3	2	4
	CZU	0	31	1	32
	Charles	0	17	1	10
	VŠFS	0	9	0	5

This contingency table shows the gender of respondents from each university.

Czech University of Life Sciences Prague (CZU) has the most respondents since they were the easiest people to connect with, being from the same university as the researcher.

Charles university had 28 responds this is attributed to the Erasmus students that responded to the questionnaire.

Table 4: Crosstabulation of preferred device for online connectivity and shopping practices

		What is your preferred device of choice for online connectivity?			
		Count	Laptop Count	Smartphone Count	Tablet Count
Would you rather shop online or in person?		9	0	0	0
	In-person	0	20	60	3
	Online	0	8	22	2

In the crosstabulation of preferred device for online connectivity and shopping practice, it is visible that most students prefer to shop in person. 73% of smartphone users shop in person, while 27% of smartphone user would rather to shop online. 72% of respondents answered with shopping in person versus 28% would rather shop online.

Table 5: Crosstabulation of gender & age with shopping practices

	How old are you? Count	man			Prefer not to say			woman		
		How old are you?			How old are you?			How old are you?		
		20-22 Count	23-25 Count	Over 25 Count	20-22 Count	23-25 Count	Over 25 Count	20-22 Count	23-25 Count	Over 25 Count
Would you rather shop online or in person?	9	0	0	0	0	0	0	0	0	0
In-person	0	21	13	8	1	1	1	19	13	6
Online	0	10	4	4	1	0	0	8	1	4

In this contingency table we can see that across all age groups, the respondents to the survey would prefer to shop in-person than online. However, in the higher age group (over 25) half or more than half were more likely to shop online. Age seems to not play a role when shopping either online or in person, but this will be analysed later in the thesis.

Table 6: Contingency table of the living time in Prague and being a part of an online group for foreign students.

		How long have you been living in the Czech Republic?				
		1-2 years Count	2-3 years Count	3-4 years Count	Less than 1 year Count	More than 4 years Count
		Are you a member of an online group for foreign students?	0	0	0	0
No	0	2	5	3	4	
Yes	9	16	27	24	25	

This table shows the length of stay in Prague and if the respondents are part of an online students' group. All respondents who have been staying in Prague for less than one year are all part of a foreign student's group. 88% of all respondents are part of some sort of online group for foreign students where it could be for social, educational, references or advice.

5.2 Hypothesis testing

In this study, 4 different hypotheses will be investigated. The research question is that advancements in smartphone technology impacts foreign student's consumer behaviour in Prague. There is evidence to suggest that smartphones play a significant part in an individual's daily activities. The intentions of this section will be on proving that is accurate and that there is sufficient evidence to support the research question. Pearson Chi-Square test will be used on all the hypotheses because a chi-square test involves comparing the observed frequency distribution of the two variables to the expected frequency distribution under the assumption of no association between the variables.

- H1: Reviewing how the gender and age play a role in the way foreign students shop.
- H2: Determining if the device used to connect online plays a role in the way foreign students shop.
- H3: Verifying how the various influencing factors affect the time spent on a particular application.
- H4: Establishing if the research group uses an application more frequently, the higher you would rank the application.

H1: reviewing how the gender and age play a role in the way foreign students shop.

Table 7: H1 Chi-Squared test

		Pearson Chi-Square Tests			
		How old are you?	What is your gender?		
	Man How old are you?		Prefer not to say How old are you?	Woman How old are you?	
Would you rather shop online or in person?	Chi-square	.	,478	1,333	3,833
	df	.	2	2	2
	Sig.	.	,788^a	,513^{a,b}	,147^a

For men the p value is equal to 0.788 is means the observed result is not statistically significant at the conventional level of 0.05, and There is insufficient evidence to reject the null hypothesis so therefore we accept the null hypothesis and reject the alternative.

The p value for people who choose not to say their gender is equal to 0.513 observed result is not statistically significant at the conventional level of 0.05, and There is insufficient evidence to reject the null hypothesis so therefore we accept the null hypothesis and reject the alternative. The chi-squared value is equal to 1.333 and this may suggest that there might be significance between the variables, with a larger sample size this can be proven.

The p value for women is equal to 0.147. There is insufficient evidence to reject the null hypothesis so therefore we accept the null hypothesis and reject the alternative, ,but it can it is relatively close to the threshold of statistical significance and can say that with a bigger sample size the result may differ. The chi-square value is equal to 3.3833 also that there may be some evidence of a potential association between the variables being tested.

H2: Determining if the device used to connect online plays a role in the way foreign students shop.

Table 8: H2 Chi-Squared test

Pearson Chi-Square Tests

		What is your preferred device of choice for online connectivity?	What is your gender?		
			Man What is your preferred device of choice for online connectivity?	Prefer not to say What is your preferred device of choice for online connectivity?	Woman What is your preferred device of choice for online connectivity?
Would you rather shop online or in person?	Chi-square	.	,893	,444	,361
	df	.	2	1	2
	Sig.	.	,640^a	,505^{a,b}	,835^{a,b}

This test was done to see if there is any statically significance between gender and preferred device with the way in which shopping is done.

The values for man, prefer not to say, and women and prefer not to say of 0.640, 0505, 0.832 shows as that there is no significant difference between the groups being compared with a significance level of 0.05. Therefore, this means null hypothesis is failed to rejected and alternative hypothesis is rejected.

Table 9: H3 Chi-squared test

		applications below according to how often you use them?
Taxi Services	Chi-square	480,669
	df	436
	Sig.	,069 ^{a,b}
Groceries	Chi-square	599,495
	df	545
	Sig.	,053 ^{a,b}
Clothes / Retail	Chi-square	589,364
	df	545
	Sig.	,092 ^{a,b}
Electronics	Chi-square	608,683
	df	545
	Sig.	,030 ^{a,b,7}
Holidays	Chi-square	612,303
	df	545
	Sig.	,024 ^{a,b,7}
Tickets(movie, events, festivals)	Chi-square	727,322
	df	654
	Sig.	,024 ^{a,b,7}
Food Delivery	Chi-square	592,248
	df	545
	Sig.	,079 ^{a,b}
Social Media2	Chi-square	613,873
	df	545
	Sig.	,021 ^{a,b,7}
Educational	Chi-square	735,270
	df	654
	Sig.	,015 ^{a,b,7}
Entertainment	Chi-square	605,424
	df	545
	Sig.	,037 ^{a,b,7}
Gaming2	Chi-square	472,809
	df	436
	Sig.	,108 ^{a,b}
Fitness & Health	Chi-square	724,135
	df	654
	Sig.	,029 ^{a,b,7}

H3: : Verifying how the various influencing factors affect the time spent on a particular application.

This question was asked to determine if there is a relationship between: the ranking of the application according to how often you use them, and what is the biggest influence when using the applications. With the influencing being Advertisement, social media, friends and family, impulse buying and necessity.

Taxi services ;Clothes/Retail ;Food delivery, and Gaming applications all have the p value greater than the significance level of 0.05. There is insufficient evidence to reject the null hypothesis so therefore we accept the null hypothesis and reject the alternative.

Although it can see that they are all marginal greater than the significance level, with the correct sample size this can be proven to be the opposite result.

The influencing factors do affect the time spent on these apps.

Groceries; Electronics; Holidays; Tickets; social media; Educational; Entertainment; and Fitness applications values are all smaller than the significance level. This situation indicates that the observed result is statistically significant and provides evidence against the null hypothesis. The null hypothesis is rejected, and the alternative is accepted. The influencing factors do not affect the time spent on these apps.

Table 10: H4 Chi-squared test

Rank the type of applications below according to how often you use them?

Social Media	Chi-square	839,459
	df	763
	Sig.	,028^{*,b,c}
Learning	Chi-square	733,975
	df	654
	Sig.	,016^{*,b,c}
Online Shopping	Chi-square	707,008
	df	654
	Sig.	,074^{b,c}
Gaming	Chi-square	590,359
	df	545
	Sig.	,087^{b,c}
Banking	Chi-square	372,000
	df	327
	Sig.	,044^{*,b,c}
Dating	Chi-square	603,149
	df	545
	Sig.	,043^{*,b,c}
Watching Videos	Chi-square	714,727
	df	654
	Sig.	,050^{*,b,c}
Research	Chi-square	484,349
	df	436
	Sig.	,054^{b,c}
Calling	Chi-square	616,336
	df	545
	Sig.	,018^{*,b,c}
Messaging	Chi-square	604,340
	df	545
	Sig.	,040^{*,b,c}

H4: Establishing if the research group uses an application more frequently, the higher you would rank the application.

This question compares the rank of the type of application according to how often you use it versus the everyday usage the applications.

Social media; Learning; Banking; Dating; Watching videos; Calling and, Messaging applications all have values that is less than the significance level of 0.05. This indicates that the observed result is statistically significant and provides evidence against the null hypothesis. The null hypothesis is rejected, and the alternative hypothesis is accepted. The time spent on the app has no affect when they rank them.

Online shopping, Gaming and Research all have values that are greater than the significance level of 0.05. This matter suggests that there is insufficient evidence to reject the null hypothesis, and the difference between the groups being compared is likely due to chance. The null hypothesis is failed to be rejected and the alternative hypothesis is rejected. The time spent on these apps affect how they are ranked.

6 Practical application

The research can be used by marketers for their marketing programs when students are their target market or market segment. Their marketing mix can be tailored according to the research and advertising can be more targeted. The research shows that several of the prominent online retail applications are not frequently used by foreign students and these companies could change their marketing to target foreign students more. This will bring more users to their app, resulting in more buying and more revenue.

Educational businesses can use this data to develop apps or student portals. The research can be used to help define the user requirements and design an app that is used more frequently by university students.

This research can also be used to understand how students use their smartphone when it comes to educational apps.

Social events businesses can use this research to create parties and public events that will allow foreign students to integrate easier and meet new people.

University placement agencies could use the data to successfully advertise and promote their services to students. Similarly, universities in Prague could promote themselves.

7 Limitations & Further research.

The current study's design and analysis may have limitations, as with other studies. These include the scope of the work, time constraints, expertise, generalizability, and bias. The scope of this work has set boundaries and limits. The research question, methodology, review and questionnaire and sample all can be improved. Due to the limited resources and knowledge, the author cannot add information to the thesis, unlike other works that are more specific about the impact smartphones have on students. The time constraint also played a factor in the work that was produced. Because of the time constraint of just over 1 year to review different articles, analyse them and identify gaps or inconsistencies in the literature, and due to other commitments university studies, the intentions cannot be solely concentrating on the thesis. With inadequate expertise about the topic and being limited to a few points of contact for information were reduced to published articles and the supervisor. Generalizability of a study refers to the extent to which its findings can be used in a wider context. The disappointing low numbers of respondents narrows the scope of the

work as well as limiting this work to certain demographics. It may not be applied to the general population or other age groups. As well as being a bachelor's student, consequently the training and experience in ethical research practices compared to more advanced researchers, which can limit the validity and reliability of this research results. The structure of the questionnaire has a bias towards the respondents. As considering foreign students in Prague this cannot translate to other cities or age groups. The questions that were asked in the survey could also be improved to allow easier calculations for contingency tables.

Further research can be done with more cities included, so it will not be constrained to a niche segment of the market. Exploring alternative research questions and collaborating with other researchers can expand the scope of the work along with the impact will greatly increase the validity of the research. Focusing on a different demographic can be considered in addition to the type of device used.

8 Conclusion

The advancement of smartphone technology has had a significant impact on consumer behaviour, including that of foreign students in Prague. In recent years, smartphones have become an essential part of everyday life, allowing individuals to stay connected, access information, and engage in various activities on-the-go. One of the primary ways in which smartphone technology has impacted consumer behaviour is through the rise of e-commerce and mobile commerce. With the increasing popularity of online shopping, more and more consumers are using their smartphones to purchase goods and services. This trend is particularly relevant to foreign students in Prague, who may rely on online shopping to access products that are not readily available in their home countries.

The study statistics shows that smartphones have a key role in consumer behaviour. The results show that most people will use their smartphones to connect online and how habitually smartphones have made using different applications. However, the results of the survey show that consumers still prefer to shop in person and how little students spend online. When looking at gender and age with shopping, the data shows that there is no correlation between them.

When studying the correlations, it was found that some apps are more impactful than others, as people rank their usage of the application. There is also a relationship with how long the app is used to how it is ranked against others.

Smartphones will continue to grow and change lives, as they become more powerful and high-speed connectivity advances, they will keep changing individual's consumer behaviour. It will be up to the consumer to notice this to identify how it will affect them.

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10 Appendix

Questionnaire form

Basic Information

1. How old are you?
 - Under 20
 - 20-22
 - 23-25
 - Over 25

2. What is your gender?
 - Woman
 - Man
 - Non-binary
 - Prefer not to say.

3. Which Czech University are you currently studying at?(Abbreviate)
 - Text answer

4. What is the Region of your Nationality?
 - Africa
 - Asia
 - Europe
 - North America
 - South America
 - Oceania

5. How long have you been living in the Czech Republic?
 - Less than 1 year
 - 1-2 years
 - 2-3 years
 - 3-4 years
 - More than 4 years

Student life

6. Are you a member of an online group for foreign students?
 - Yes
 - No

7. What are the groups used for?
 - Social
 - Education
 - References
 - Advising
 - Other

8. What do you think is missing for international students in Prague?
- Text answer

Behaviour

9. What is your preferred device of choice for online connectivity?
- Smartphone
 - Laptop
 - Desktop
 - Tablet
10. How long do you spend on these activities, everyday using your smartphone ?
- Social Media
 - Learning
 - Online Shopping
 - Gaming
 - Banking
 - Dating
 - Watching Videos
 - Research
 - Calling
 - Messaging
11. Would you rather shop online or in person?
- Online
 - In-person
12. Do you Google products before buying them?
- Always
 - Regularly
 - Not often
 - Never
13. What is your approximate monthly online spend in CZK?
- Less than 1000
 - 1000-2999
 - 3000-4999
 - 5000-6999
 - 7000-8999
 - More than 9000

Smartphone Usage

14. Rank the type of applications below according to how often you use them?

- Taxi Service Apps
- Entertainment Apps
- Food Delivery Apps
- Social Media Apps
- Retail Apps
- Educational Apps
- Utility Apps
- Gaming Apps
- Fitness & Health Apps

15. What is your biggest factor influencing you when using these online services?

	Advertisement	Social Media	Friends & Family	Impulse Buying	Necessity
<ul style="list-style-type: none"> • Taxi Services • Groceries • Clothes / Retail • Electronics • Holidays • Tickets (movie, events, festivals) • Food Delivery • Social Media • Educational • Entertainment • Gaming • Fitness & Health 					

16. How frequently do you use these retail apps? Select the amount for each activity.

	Daily	Weekly	Several times a week	Once per month	Several times a month	Few times a year	None
<ul style="list-style-type: none"> • Uber • Bolt • Wolt Delivery • Dame Jidlo • Košík • Rohlik • Amazon • Alza • Booking.com • Ticketmaster • ISIC 							

17. Do you have other retail apps that was not mentioned?

- Yes
- No

18. What is that App called?

- Text Answer

19. How frequently do you use these educational apps? Select the amount for each activity.

	Daily	Weekly	Several times a week	Once per month	Several times a month	Few times a year	None
<ul style="list-style-type: none"> • Grammarly • Duolingo • Quizlet • Chegg • Moodle • Soundnote • Microsoft Office 							

20. Do you have other educational apps that was not mentioned?

- Yes
- No

21. What other educational apps do you use?

- Text answer

22. How frequently do you use these Social Media apps? Select the amount for each activity.

	Daily	Weekly	Several times a week	Once per month	Several times a month	Few times a year	None
<ul style="list-style-type: none"> • Facebook • Instagram • Twitter • LinkedIn • Snapchat • TikTok • Telegram • Pinterest • YouTube • WhatsApp 							

23. Do you use other social media that were not mentioned?

- Yes
- No

24. What is the app called?

- Text answer

Figure 11: Time spent every day on the activities on their smartphone.

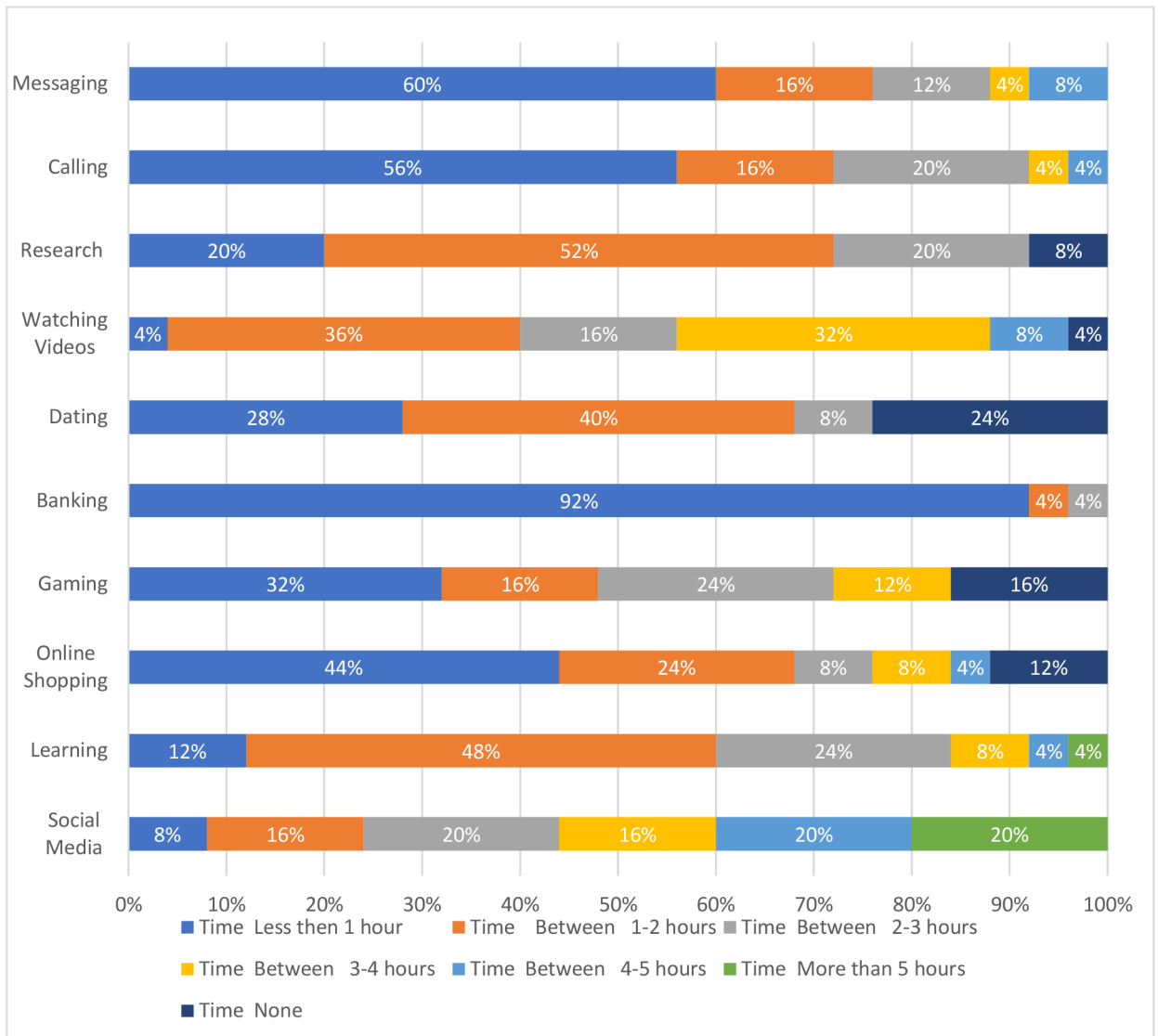


Figure 12: Googling products

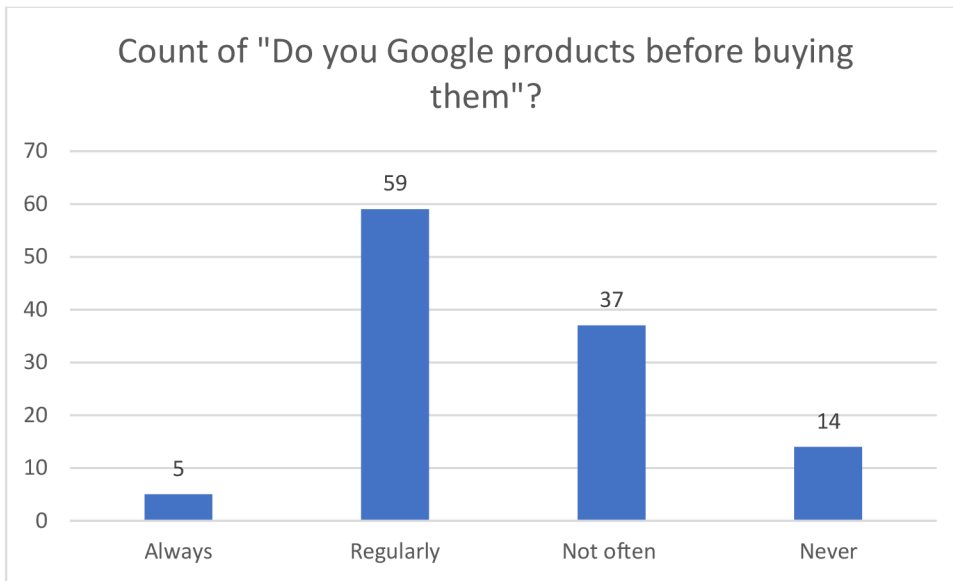


Figure 13: Approximate monthly online expenditure

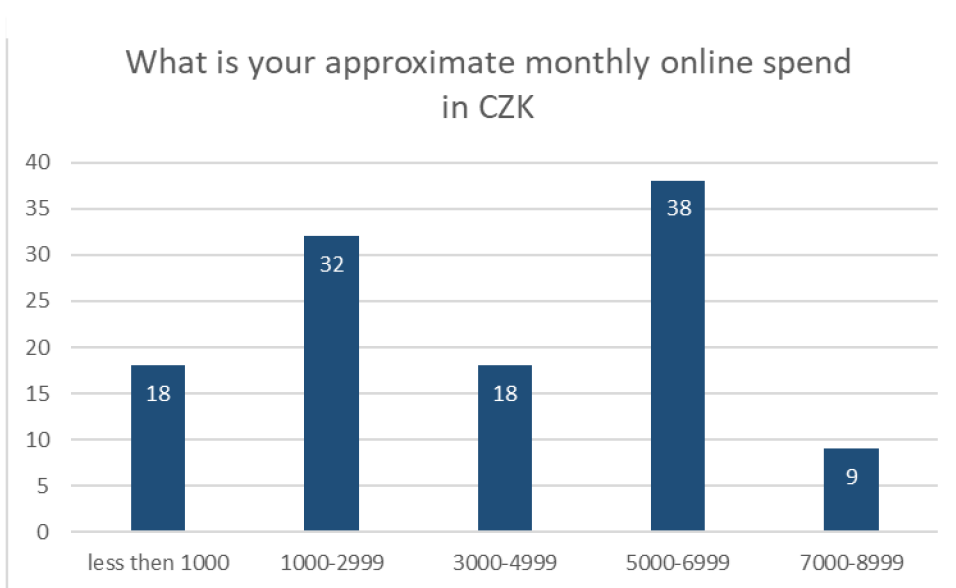


Figure 15: Biggest factor influencing you when using these apps?

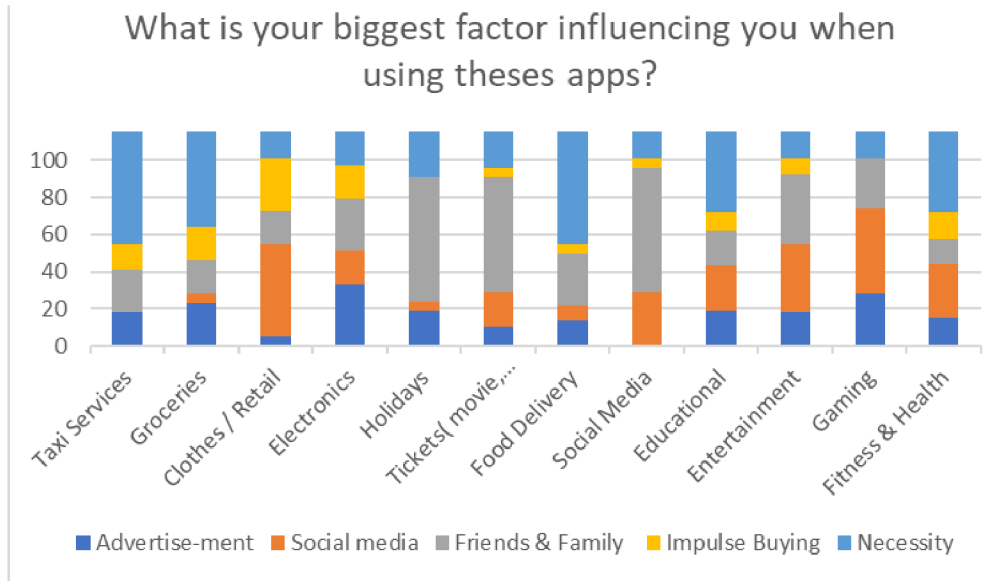


Figure 14 Retail apps usage.

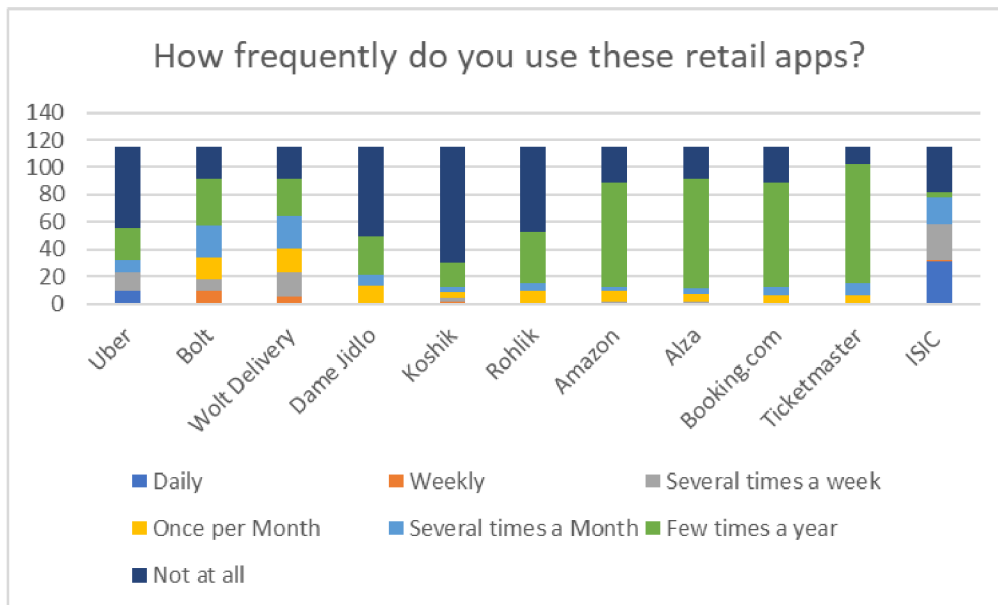


Figure 16: Educational apps usage.

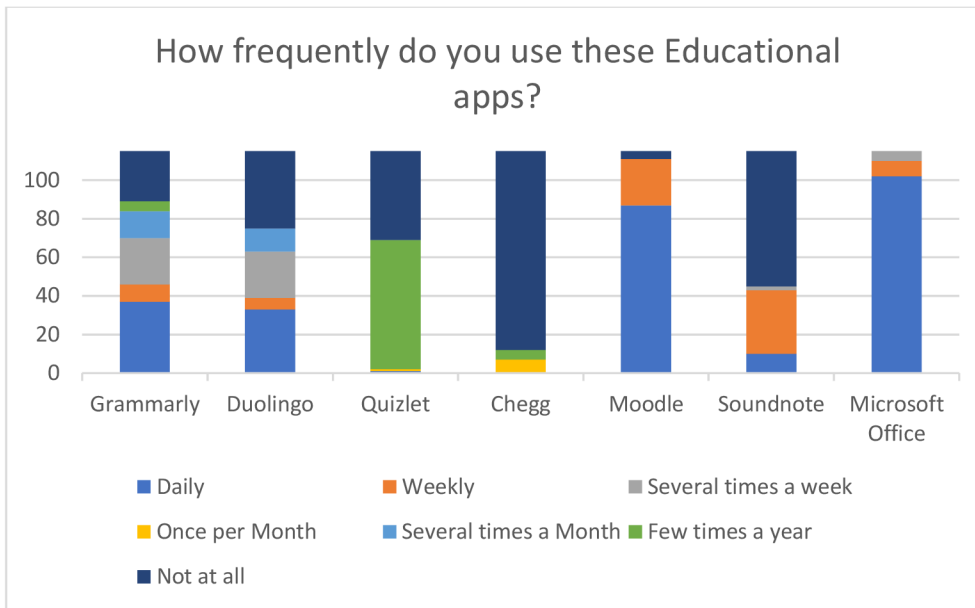


Figure 17: Social Media apps usage

