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Thi Hong Ngoc Nguyen

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MOBILE MARKETING ACTIVITIES BASED ON GENERATION Z TECHNOLOGY ACCEPTANCE: CROSS-CULTURAL APPROACH

Doctoral dissertation

Supervisor: Prof. dr hab. Edyta Rudawska

Co-supervisor: Dr. Magdalena Kowalska

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STATEMENT 1

I declare that I wrote the submitted doctoral dissertation myself. This means that when writing the dissertation entitled "*Mobile marketing activities based on Generation Z technology acceptance: cross-cultural approach"* apart from the necessary consultations, I did not use the help of other people, and in particular, I did not commission other persons to prepare the dissertation or its part, and I did not copy the dissertation or its parts from other people. At the same time, I acknowledge that if the above statement turns out to be untrue, the resolution awarding me the doctoral degree will be withdrawn.

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STATEMENT 2

I consent / do not consent to the disclosure of my dissertation entitled "*Mobile marketing activities based on Generation Z technology acceptance: cross-cultural approach*".

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Table of Contents

INTRODUCTION

Background

In 2021, the number of mobile users worldwide is 7.1 billion, with projections suggesting that this number will likely increase to 7.26 billion by 2022. In 2025, the number of mobile users worldwide is expected to reach 7.49 billion (Statista, 2021). Mobile is regarded as one of the few consumer products that have recently received international acceptance in a relatively short period (Gao et al., 2010). Strong growth in both the number of users and mobile applications is contributing to the development of mobile marketing. This is the use of mobile media as a communication channel between the brand and the consumer. Therefore, for businesses to gain a competitive advantage, the mobile marketing activities are one of the principal lead to success. Creating and implementing marketing activities is a big challenge for businesses. In recent years, the customers' acceptance of mobile marketing has been considered as one of the essential areas of research, since it has contributed to providing an insight into the success or failure of products or marketing activities (Silberer & Wohlfahrt, 2001).

The growing importance of the mobile phone as a new, direct and interactive medium in mobile media is in its portability and capability to function like a small computer. Mobile ads can be placed not only on mobile web pages, but also on social media sites, such as Facebook, Twitter, YouTube and Instagram, which are accessed every day by millions of consumers through their smartphones (Grewal et.al, 2016). Besides, mobile applications enable marketers to promote brands by placing unique content in apps (Berman & Zarb, 2016) or sending push notifications (Selligent, 2017). Text messages can be sent as well with special offers and coupons (Dix et.al, 2015). Based on mobile phone users' demographic information and usage patterns, marketers can deliver personalized marketing messages to users via their mobile phones at specific times and locations (Peters et al., 2007).

Moreover, the users' behaviour can be tracked through smartphones, such as location and browsing behaviour, which enables marketers to accurately segment their audiences and deliver customized mobile ads (Sultan & Rohm, 2005). To effectively apply these innovative marketing capabilities, understanding consumer behaviour towards mobile marketing is one of the main priorities for marketing managers (Jiménez & San-Martín, 2017). Thus, the development of

strategies to implement this marketing model becomes effective and meets the needs of consumers.

The performance features presented above demonstrate the huge potential of mobile marketing as a new commercial communication tool. However, many researchers argued that the success of a new marketing tool depends largely on consumer acceptance (Bauer et al., 2005). Pescher et al. (2014) also suggested that consumers have a strong impact on the success of mobile marketing. Consumers are the powerful force of any industry. Without them businesses cannot bring in any profits or operate in the market. Meanwhile, Donga et al. (2018) specifically emphasized that consumer acceptance is the key factor. Consumer acceptance of mobile marketing is defined as the respondent's receptivity as well as some intention to perform activities such as receiving products or information related to promotional marketing on their mobile devices (Shankar & Malthouse, 2006). Marketers need to take care about consumers, especially their acceptance. This consideration can lead marketers to reduce risk because they can see for sure whether their marketing is having a positive or negative effect on customers (Donga et al., 2018). Therefore, extensive research is needed to evaluate the factors influencing consumer use and acceptance of mobile services as effective channels to deliver mobile marketing and more importantly the main influencing factors of mobile marketing.

Researches on mobile marketing

Currently, mobile marketing channels related to mobile devices and applications are rapidly evolving in a multi-channel environment (Neslina & Shankar, 2009; Shankar & Balasubramanian, 2009). However, the awareness and understanding of enterprises and consumers about this form are still relatively new. The cause may be because this form of marketing activities only boom in recent times. Therefore, the amount of scientific research on this form is not large, so the Author's research will have new properties and many issues to exploit.

Besides, the report of Shankar and Balasubramanian (2009) also summarized research issues related to mobile marketing based on 64 articles. The content of these studies focused on the value that mobile marketing offers to both businesses and consumers, namely:

- Consumer perceptions of mobile marketing;
- Improve the importance of mobile marketing;

- Raise awareness about the potential value of mobile marketing.

Varnali and Toker (2010) compiled 255 articles and based on a strategic portfolio of 73 articles to categorize generally the problems that previous studies have examined. This is shown in the figure 1.

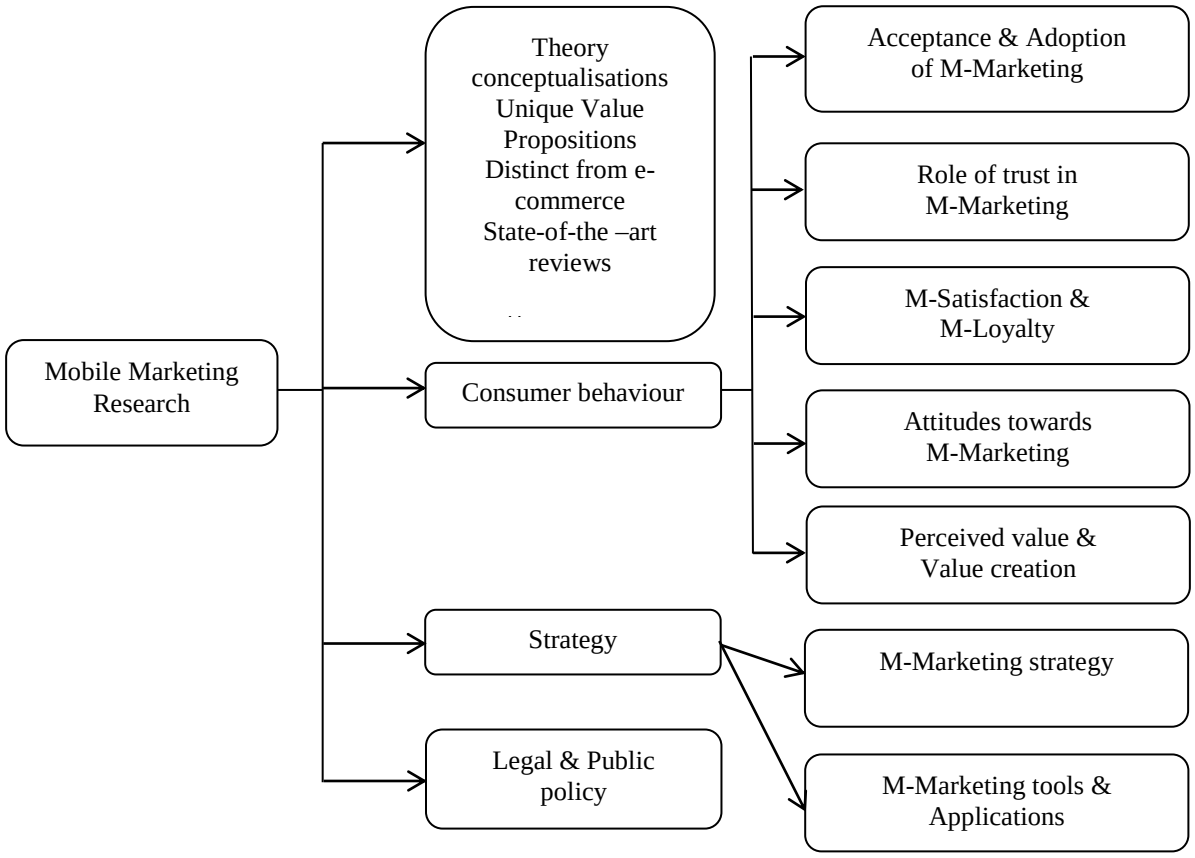

Figure 1. Classification framework for mobile marketing research
Source: Adapted from Varnali and Toker (2010)

During their synthesis, the authors also statistically counted the amount of mobile marketing-related research. The data revealed that the studies related to the behaviour and attitude of consumers to mobile marketing, the role of trust in mobile marketing accounted for large numbers. Meanwhile, little research focuses on the role of mobile marketing in branding, mobile marketing value chains, mobile marketing business models and the role of customers' acceptance in mobile marketing strategies. Therefore, the field should have much more research to provide a comprehensive view on the form of mobile marketing and aim to build a complete model applied in the operation of enterprises in the era of the current 4.0 technology.

Research motivation

Mobile marketing is becoming more and more popular because of the outstanding benefits it brings to businesses and customers. Through mobile marketing, businesses can connect and interact with customers anywhere and anytime, thus opening up new marketing possibilities. However, mobile marketing is still relatively new. It follows that to improve mobile strategies, marketers need to understand better factors which determine consumers' acceptance and participation in marketing on their smartphones. The Technology Acceptance Model (TAM), which was proposed by Davis (1989) is the most commonly used theory to explain an individual's acceptance of an information system (Surendran, 2012). In the TAM model, there are two factors: perceived usefulness and perceived ease of use, which are relevant in computer use behaviours. However, due to active development and appearance of many new forms of technology, especially in e-marketing, researchers explored other determiners of customer's technology acceptance, thus modified a TAM model (Surendran, 2012). TAM has an important and widely accepted research group in the Information System (IS) field and has been shown to be an accurate predictor of user intent and actual usage of the system (Tang & Chen, 2011). Therefore, in this study, the Author intends to build a new research model suitable for mobile marketing basing on Davis's TAM model base.

Moreover, a cross-cultural approach may help to identify important factors that influence consumers' perceptions of mobile marketing that are specific to each country. Cultural values are essential factors that influence consumers' innovative behaviours of accepting technology-related products (Straub, 1998; Veiga & Dechant, 2001; Yaveroglu & Donthu, 2002). Hence, mobile marketers might also need to comprehend the cultural environment in which they display their mobile advertisements (Jiménez & San-Martín, 2017). The problem is that there is no appropriate research that works on the effect of culture on acceptance of technology (Abbesi & Haghighi, 2011). Consequently, this study will examine the role of culture in adapting the technology acceptance model (TAM) and strive to give an insight into Hofstede's Cultural Dimensions to the adoption of technology.

Although some studies modified TAM in the context of mobile marketing to investigate customer acceptance, most of these studies were in Asia (mainly China, Japan, and Korea). countries), North America or Western Europe. Therefore, the selection of Vietnam and Poland will help to better understand the potential variables that may affect the consumer acceptance in

the new two countries for mobile marketing. Besides, this study selects Polish and Vietnamese consumers because of their distinctive cultural differences as well as their propensities to accepting mobile marketing. Data from GSMA Intelligence showed that there are 156.0 million mobile connections in Vietnam at the beginning of 2022 (Datareportal, 2022). Meanwhile, there were 53.97 million cellular mobile connections in Poland at the start of 2022 (Datareportal, 2022). These figures showed the potential for growth of mobile marketing in both countries. On the other hand, the cultural values of both nations have been measured, and all of the values appear as contradictory (Hofstede, 2001a, 2001b). Taking this into account, a cross-cultural study on mobile marketing acceptance in Poland and Vietnam can add new contributions to literature. Therefore, these reasons encourage the Author to further investigate customer acceptance of mobile marketing in Vietnam and Poland.

In addition, the highest rate of age using the smartphone ranges from 18 to 35 in both Vietnam and Poland (Datareportal, 2022). This is also understandable because smartphones have been developed in the last decade or so, and young people tend to update quickly on technology changes. This age group belongs to the Generation Y and Z. According to the statistics of the digital marketing institute (The changing customer: how to cater to gen Z, 2019), by 2020, the Generation Z will account for about 40% of the total number of customers (Digital marketing institute, 2020). They are gradually taking over. As a native technology user, Generation Z is different in that they have never known life without the advent of digital technologies such as smartphones or social media. This led to a shift in the way businesses approach, communicate and connect with one of the fastest-growing customer markets in the world. Therefore, in this study, the Author focuses on understanding the acceptance of Generation Z for mobile marketing.

Research problems

The research problem can be summarized from the motivation section as follows: what factors affect the mobile technology acceptance of Generation Z in Vietnam and Poland; the impact of cross-cultural factors and the explanatory level of the ETAM model. Therefore, the present thesis explores dimensions of mobile marketing acceptance among Polish and Vietnamese respondent and how these dimensions explain the users' intentions to participate in mobile marketing. Furthermore, by comparing Polish and Vietnamese young users' acceptance of

mobile marketing such as short message service ads; mobile app and aims to use them, this study also examines the cross-cultural scale validity. Also, the findings may provide marketers with a better understanding of the impact of cross-cultural differences on consumers acceptance of mobile marketing.

Research scope

First, the focus of this study is on the acceptance of mobile marketing by Generation Z in Vietnam and Poland. From there, the study develops and proposes the concept of mobile marketing activities suitable for Generation Z in Vietnam and Poland. The study will develop a technology acceptance model by adapting Davis's model. Davis et al. (1989) hypothesized that there are two main factors that determine user acceptance of IT, perceived usefulness and perceived ease of use. However, the study also adds external factors to enhance the explanatory power of the TAM model in the context of mobile marketing. External factors were included based on synthesis from previous studies.

Second, the study will focus on investigating cultural differences towards mobile marketing acceptance of Generation Z. Recently in the field of technology acceptance research, culture has become an important issue for researchers to understand the user acceptance of IT across different countries (Sriwindono & Yahya, 2012; Muk & Chung, 2015). Therefore, cultural factors should be examined to clarify if there are country differences in the environment under investigation. Moreover, Vietnam and Poland are two countries with different cultures. Vietnam is a collectivist country while Poland is an individualist country. Thus, when comparing and analyzing these two countries, the study can examine the impact of culture on the developed environment.

Third, the research object are young representatives of Vietnam and Poland. In this study, Generation Z was defined as people born between 1996 and 2013. That is, it includes people between the ages of 9 and 26. The study focuses on analyzing the age group from 18-26 years old for the following reasons: firstly, this group has certain knowledge to participate in answering the questions; second, this group is easy to collect data. This age group includes both undergraduate and graduate students.

Research aims and hypotheses

The main aim is to assess the determiners that influence of acceptance of mobile marketing by Generation Z in two different contexts: Poland and Vietnam and to propose mobile marketing activities for Generation Z in Poland and Vietnam. The relation between dimensions of mobile marketing acceptance and culture is explored.

The Author also accepted the following detailed objectives:

- Exploring the Perceived Usefulness (PU) affecting acceptance by Generation Z of mobile marketing in Poland and Vietnam.
- Identifying Perceived Ease of Use (PEOU) affecting acceptance by Generation Z of mobile marketing in Poland and Vietnam.
- Identifying the Information Value (IV) impacting on acceptance by Generation Z of mobile marketing in two countries.
- Analyzing the influence of Brand Trust (BT) on acceptance of Generation Z of mobile marketing in two countries.
- Exploring Privacy (P) affecting acceptance by Generation Z of mobile marketing in Poland and Vietnam.
- Proposing the concept of mobile marketing activities for Generation Z in Poland and Vietnam.

Having in mind the research problem the Author attempted to verify the following main hypotheses:

H0a: The ETAM model has a positive and significant impact on customer acceptance of mobile marketing.

H0b: Culture determines significantly the impact of ETAM on mobile marketing acceptance. It is higher in Poland than in Vietnam.

Further, the main hypotheses were broken down into detailed hypotheses:

H1a. PU has a positive and significant impact on customer acceptance of mobile marketing.

H1b. Culture determines significantly the impact of PU on mobile marketing acceptance. It is higher in Poland than in Vietnam.

H2a. PEOU has a positive and significant impact on customer acceptance of mobile marketing.

H2b. Culture determines significantly the impact of PEOU on mobile marketing acceptance. It is higher in Poland than in Vietnam.

H3a. IV has a positive and significant impact on customer acceptance of mobile marketing.

H3b. Culture determines significantly the impact of IV on mobile marketing acceptance. It is higher in Poland than in Vietnam.

H4a. BT has a positive and significant impact on customer acceptance of mobile marketing.

H4b. Culture determines significantly the impact of BT on mobile marketing acceptance. It is lower in Poland than in Vietnam.

H5a. P has a positive and significant impact on customer acceptance of mobile marketing.

H5b. Culture determines significantly the impact of P on mobile marketing acceptance. It is lower in Poland than in Vietnam.

Research methodology

The research methodology can be divided into five steps:

1. Literature review: The thesis will review and summarize the work first. Furthermore, the review will include a critical analysis of existing technology acceptance models to address limitations and research issues.
2. Problem definition: The thesis will clearly define the research problem and how the research is planned to solve this problem.
3. Model and hypotheses development: The thesis will develop a new technology acceptance model to test the acceptance of mobile marketing by Generation Z. In addition, the thesis will explain the methodology and considerations to determine the variables for the research model.
4. Data collection: Data will be collected to review the research model; A data collection tool will be developed and tested for reliability.
5. Model testing and evaluation: The collected data will be used to test the developed model.

Thesis structure

The thesis is divided into six chapters as follow:

- Chapter one focuses on presenting the theoretical basis of marketing in general and mobile marketing in particular.
- Chapter two introduces the development of the technology acceptance models. Some popular models are introduced in terms of their domain, strength and weakness. Moreover, this chapter focus on TAM since it is the main model used in this research. Specifically, studies applying TAM model in the field of mobile marketing will be synthesized and analyzed. From there, the research direction of TAM will be introduced.
- Chapter three has two parts. First part focuses on Generation Z in Vietnam and Poland. Second part presents the developed model and the research hypotheses that will be used to establish the relationships between the model variables.
- Chapter four deals with research methodology and discusses the design and development of the data collection process. In addition, it describes sample description, sampling approach. Finally, the chapter discusses data analysis approaches used to analyze the collected data.
- Chapter five is about data analysis. The data analysis chapter can be divided into three parts. The first part checks the collected data to determine its validity. The second part tests the validity and reliability of the model variables using confirmatory factor analysis. The third part examines the developed model and research hypotheses using multiple regression analysis.
- Chapter six focuses on discussing and evaluating the research findings. The first section discusses the results of the model that has been developed based on the research hypotheses. The second part discusses and proposes the concepts of mobile marketing for Generation Z in Vietnam and Poland. The third part discusses the research contribution, research implications, limitations and future work.

CHAPTER I
REVIEW OF MOBILE MARKETING CONCEPT

This chapter presented the theoretical background related to mobile marketing. The theoretical foundation introduced the evolution of the marketing concept over time, starting from marketing 1.0 to marketing 5.0. The main part of this chapter focused on presenting the concept of mobile marketing, the evolution of mobile marketing generations, and the characteristics of mobile marketing. Finally, the chapter provided the benefits and challenges that mobile marketing will bring to customers and businesses.

1.1. The development of marketing concept – from marketing 1.0 to marketing 5.0

According to the American Marketing Association (AMA, 2017) Board of Directors: "*Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.*" Kotler and Keller (2016, p. 5) defined marketing as "*the science and art of exploring, creating, and delivering value to satisfy the needs of a target market at a profit. Marketing identifies unfulfilled needs and desires. It defines, measures and quantifies the size of the identified market and the profit potential. It pinpoints which segments the company is capable of serving best, and it designs and promotes the appropriate products and services."* It is possible to observe that AMA focuses on defining marketing as its necessary and most important task, which is to provide value to customers and related parties. Kotler and Keller (2016) saw marketing as a cross between science and art. The marketing impact audience in the Kotler and Keller definition focuses only on the customers in the company's selected target market.

However, the development of the market, as well as the changes in consumers' preferences and behaviors, have had an impact on marketing. For businesses to grow sustainably, marketers realize that they cannot only focus on satisfying customers' needs but also building relationships with them. Gummesson (2017) emphasized that in the past decades, businesses in all sectors should turn to manage interactions, relationships and networks. Asserting for this

claim, Kotler and Armstrong (2012) defined marketing as "*the process by which companies create value for customers and build strong customer relationships to capture value from customers in return."* They stressed the importance of long-term relationships with customers, which can be achieved by relationship marketing and Customer Relationship Management (CRM). In summary, marketing is essentially an interaction between marketers and consumers, requiring management decisions to produce and sell valuable products and services based on market segmentation, beneficial for both businesses and customers.

The advancement of IT influences the development of marketing philosophies and concepts (Durmaz & Efendioglu, 2016). New ways will emerge that provide tools to help marketers achieve specific goals in different environmental contexts. It is a transition from traditional forms of marketing to digital marketing. In their book "*Marketing 4.0*", Kotler et al. (2016, p. 46) point out that this transformation is focused on four main aspects, which are:

- Segmentation and targeting to customer community confirmation;
- Brand positioning and differentiation to brand clarification of characters and codes;
- Selling the four P's to commercializing the four C's;
- Customer service processes to collaborative customer care.

The first important aspect is segmentation and targeting to customer community confirmation. Kotler et al. (2016, p. 47) have analyzed the transformation of the roles of businesses and customers in an associate relationship. They believed that in traditional marketing, the relationship between companies and customers is the relationship between "hunter" and "prey". Businesses focus on targeting, positioning and directly impacting customers without their permission. Customers become passive and forced to receive irrelevant marketing messages. While for digital marketing, the role of the customer is changing. They become more proactive and build communities within boundaries that they define themselves. The term "*consumer community*" was born with the advent of digital media (Wirtz et al., 2014). Kotler emphasized that "*community*" is a new segment in the modern marketing landscape (Kotler et al., 2016, p. 48). It should be noted that customer consent is essential for businesses looking to reach out and interact with their communities. To be able to conduct marketing activities, a company must become a sincere friend, not a predator. Customers can accept or reject the brand if they feel it is not necessary. From here, the relationship between business and customer is a peer

relationship, which is the first sign of the transition from traditional marketing to digital marketing.

The second is brand positioning and differentiation to brand clarification of characters and codes. In the traditional sense, brands play a role in storing all of the value created by a company's brand campaigns; a set of images - usually names, logos and slogans - that distinguish a company's products or services from competitors. The brand concept is tied to brand positioning. Positioning is the most critical stage in a brand's asset management strategy (Kotler et al., 2016, p. 49). A business's brand positioning is the process of creating its image, distinctive characteristics, associations, and values in the minds of consumers. The purpose of this is to create a sustainable brand image and ensure consumer access to it. To win the battle for brand positioning, Kotler et al. (2016, p. 49) insisted that a business must build a brand with a consistent and precise positioning through marketing mixtures. However, in the digital environment, brand positioning has changed a lot. The reason comes from the technological breakthrough, which makes the product have a shorter life cycle, and the trend is also changing rapidly. Repeating brand positioning is no longer suitable for the current context; businesses must be skillful and dynamic. In this era, the core of maintaining was the letters and branding codes (Kotler et al., 2016, p. 49). Another strong emphasis in this transformation is the consensus of the customer community. Companies can position themselves as anything, but unless there is essentially community-driven consensus, positioning usually doesn't make much sense. This statement means that customers are empowered to influence brand equity and brand positioning. Social media is somewhat of an influence on the target market. Everything is transparent, so exaggerating advertising and false advertising is now a thing of the past.

Another aspect of marketing transformation is related to selling the 4 Ps to commercializing the four C's. In traditional marketing, marketers consider 4 Ps model as one of the most popular and fundamental. It will help identifying marketing options for products, distribution channels, pricing and marketing to meet the needs of your target audience, but also enhance business's efficiency. The vital role of this model in the marketing of the company is undisputed. However, it still carries certain flaws. Popovic (2006) argued that 4 Ps is a marketing definition that is production oriented, not customer-oriented, which has led to a change and a new paradigm appeared in the digital age when the customers now become the decisive players. The mixed marketing concept has evolved into allowing more customers to participate. The

marketing mix (4 Ps) should be redefined as 4 Cs (co-creator, currency, community activation, and conversation) (Kotler et al., 2016, p. 50). Co-creation is the new era of product development strategy, where customers are engaged in the formulation of ideas and concepts because they have the opportunity to personalize products and services. Currency is the new pricing scheme. Analytics plays a vital role in clearly defining the consumer spending pattern, then customizing the price based on the previous purchase model. Activating the community is the ordering and distribution of the old's 4 Ps. Products are currently manufactured under a peer-to-peer concept, such as a taxi rental service or an Airbnb rental. Businesses provide customers with easy access to products and services that do not belong to them but other customers. Besides, advanced technologies such as 3-D printing and an online portal allows customers to access products at any time, own products in minutes, and be delivered to their home, unlike regular shopping. Conversations demonstrate the interaction between business and customers, which is also the content that shows the active role of customers in the 4 Cs model. Customers have the right to refuse or accept, complain and give feedback on business advertising through the online commenting or rating function. Customers are no longer passive objects, but both businesses and customers actively take the initiative to achieve commercial value.

The last is transformation from customer service processes to collaborative customer care. Far from the conventional approach of seeing a customer as a king while and after they buy a product, companies now consider customers to be equal after switching to customer care. After-sales customer service is not enough. In this digital age, brands need to listen, interact, react to customer insights, comments, suggestions, feedback, and backlash about brands. In today's context, collaboration is the key to customer service success. Collusion occurs when companies invite their customers to participate in the process of using self-service facilities.

The core of the transition from traditional marketing to digital marketing is the role of a client with an enterprise. The concept of the customer as someone who is influenced and absorbed passively by the marketing messages from the business is outdated. With the support of information technology, customers become more potent than ever. They are proactive in receiving information as well as navigating relationships with businesses. Therefore, companies want to survive and develop; they are forced to change from thinking to acting. They must know the perfect combination of marketing goals and mass media based on approval from customers to create effective marketing strategies.

The development of society, information technology and communication over the past decades has brought about significant changes in the world of business. It's the way companies contact and view the consumer. In this ever-changing world of the 21st century, enterprises must see how marketing concepts evolved in the last century and how these changes must be applied in today's world. In the context of the ever-changing 21st century world, the development of information and communication technology and society over the past decades has brought about major changes in the business world, including the field of marketing. Figure 1.1 shows how the marketing concept evolved in the last century and how these changes must be applied in today's world.

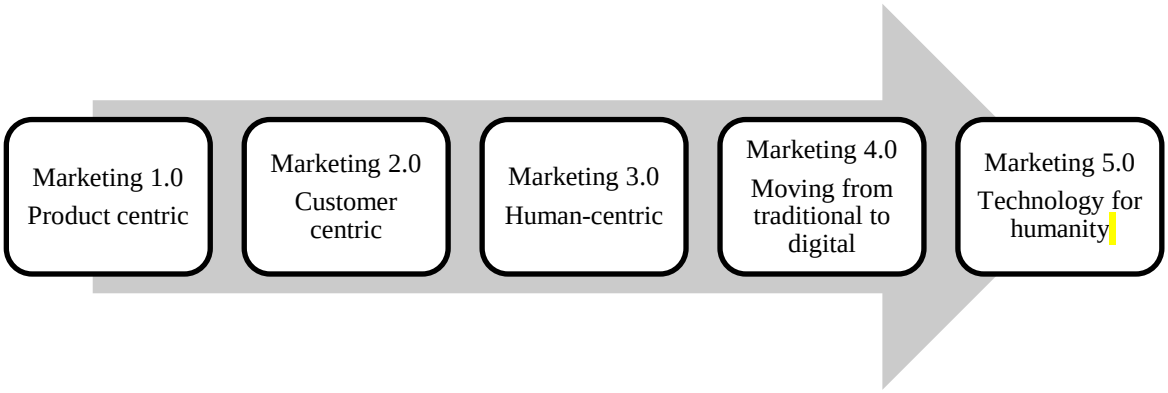

Figure 1.1. Evolution of marketing concept
Source: own study based on Kotler et al. (2010, 2016, 2021)

Marketing 1.0 - Product centric

Marketing 1.0 concept is product-centric, which is a time of competition in terms of quality, product/service features (Fuciu & Dumitrescu, 2018). Surplus production led to massive sales in the first half of the 20th century (Tarabash, 2013). Following this approach, business merely relates to production, construction and efficiency (Taghipourian & Bakhsh, 2017). Marketing 1.0 has outstanding features like intrusive, interruptive and a style of one - way communication (Kotler et al., 2010). Evidence of the characteristics of marketing 1.0 concept shows through the means it uses, which are: T.V., radio or print, etc. (Erragcha & Romdhane, 2014). The messages are delivered in one direction, from business to customer. Customers can only receive information, not participate and interact. With marketing 1.0, marketers intentionally invade, annoy and disrupt customers' lives. For example, unsolicited call between dinner or mid-business hours; send a lot of advertising letters to consumers or even T.V. ads

always use very loud sound in case the customer leaves the room to the kitchen or bathroom during the promotional period, etc. Marketers expect that a small percentage of the customers will respond.

In marketing 1.0, the model widely used is 4 Ps model. The 4 Ps concept was developed by McCarthy (1960). Instead of studying marketing from a functional point of view, defining the traditional marketing roles and how they operate in an organization, McCarthy's approach focused more on solving problems and the challenges that are marketers face. McCarthy sought to improve his marketing practices by borrowing from fields like sociology and psychology to gain insight into consumer behaviour. McCarthy's research led to the 4 Ps, product is the top factor, price is the second deciding factor, followed by place and promotion.

In general, in marketing 1.0 concept, the focus of the business is on how to develop products, reduce production costs, increase productivity, thereby making prices suitable for the masses. Communication activities are applied to traditional media such as television, radio, print newspapers, etc. with necessary information about benefits, features and usage of products/services. Marketing messages are transmitted unilaterally from business to consumer without the opposite direction - feedback from consumers to companies.

Marketing 2.0 - Customer centric

The information technology revolution is the start of marketing 2.0. As the Internet became ubiquitous, information access was much more comfortable and cheaper. The enormous number of Internet users drove technology and spurred innovation in tight competition among application developers (Constantinides, 2009). Application developers acknowledge the growing demand of applications by flooding the market with a variety of communication and collaboration applications, now known as Web 2.0, or sometimes 'Social Media' (Kaplan & Haenlein, 2010).

Thanks to the development of technologies, users can access information about a variety of products/services, information about the business and also the knowledge to choose a suitable product/service. Customers are more active, have more choices in product/service reviews. The customer's requirements are not only on the basic needs but also in terms of emotion, brand prominence. They have more knowledge, are more precise, and use "*heart*" (love for the brand) in their purchasing decisions. Since then, competition between companies has increased a lot. To

survive in such a market environment, marketers need to organize their businesses and make fair use of Web 2.0 technology and social media (Kaplan, 2012). The fusion of Web 2.0 technology and marketing practices will lead to adaptation of what is known as marketing 2.0. Marketing 2.0 is defined as the use of Web 2.0 technology and the interoperability capabilities, which it provides to open channels of interaction between consumers and businesses (Consoli & Musso, 2010).

Marketing 2.0 is customer-centric. This is the time of competition for differentiation in brand positioning. Businesses find that a product cannot satisfy the demand for the whole market, but each product will help customers with different buying purposes. This stage forces firms to segment and chooses the most potential target group. From there, they build a brand, create differentiated value for the product/service compared to its competitors and position it in the market. With the customer-centric viewpoint, all marketing activities must originate from the customer, including positioning, product development, pricing, and distribution to the media. Therefore, the marketing job is upgraded from tactical to strategic. So marketing 1.0 to marketing 2.0 is the marketing direction shifting from "*transaction*" to "*creating relationships*" with customers to satisfy their needs and maintain brand loyalty (Abdulrahman & Bach, 2013). In this concept, marketing is defined as the processes used to create, communicate, provide value to customers, and manage customer relationships in a way that benefits both the customer and the organization (Kotler et al., 2009, p. 7). It shows the importance of consumer communication for marketers, as well as the importance of customer relationship managers.

Two primary forms in marketing 2.0 are content marketing and relationship marketing. Content marketing helps businesses attract customers by creating and sharing valuable free content (Cespedes & Heddleston, 2018). Consumer relevance is critical in using content marketing to deliver value to customers. Once a business has identified a customer's needs, relevant information can be presented in a variety of formats, including news, videos, white papers, e-books, infographics, email messages, case studies, podcasts, how-to guides, question and answer articles, photos, blogs, etc. (Lieb, 2011, p. 2). After attracting the attention of customers, relationship marketing is used to build an interactive relationship between the organization and the customer. From the client's point of view, it is an opportunity to exchange information about their needs and how to achieve them (Abdolaziz & Mostafa, 2016). It will be a relationship based on the principles of consultation, dialogue and mutual trust that help

organizations differentiate the quality of their products or services and satisfy customers (Aldaihani & Ali, 2019).

In short, marketing 2.0 is about customers, how to identify the customers of the business to best sell products. The customer is more knowledgeable, and in higher demand. Therefore, in marketing 2.0, sales are more dependent on the customer side than in marketing 1.0.

Marketing 3.0 – Human centric

In the marketing 3.0 concept, Kotler et al. (2010, p. 4) emphasized that marketers should see customers as human mind, heart and spirit. Customers are not only looking for functional satisfaction but also emotional and spiritual perfection in the products and services that businesses provide. With these apparent changes, many companies are also gradually becoming aware of the importance of applying the marketing 3.0 concept in marketing activities and seizing opportunities (Susilo et al., 2015). The mission of a business in marketing 3.0 is still to satisfy customers. Still, it has a broader vision and mission to contribute to and solve problems in society, such as the economic impact of global, national or local environmental policy, dealing with air pollution, water quality, solid waste, hazardous substances and global warming (Mäler, 2011). It is essential to understand that marketing 3.0 will not compensate for traditional approaches (Kotler et al., 2010, p. 4). It can contribute to building an eco-friendly, ethical, and endearing brand in a positive way (Susilo et al., 2015).

In Marketing 3.0, there is the emergence of three main forces that shape the business landscape: the age of participation, the age of paradox of globalization and the age of creative society. These three forces have changed consumers to become more cooperative, cultural and humanistic. This transformation has shaped the three foundations of Marketing 3.0, which are collaborative marketing, cultural marketing and spiritual marketing. The characteristics of the three platforms will be shown in the table 1.1.

Table 1.1. Bulding block in the marketing 3.0

	Collaborative marketing	Cultural marketing	Spiritual marketing
Main forces	The age of participation	The age of globalisation paradox	The age of creative society
Character	New wave technology facilitates the widespread dissemination of information, ideas and public opinion allowing consumers to	Technology promotes globalization of the political and legal, economic and socio-cultural contexts, which creates cultural paradoxes in society.	Technology also drives the proliferation of the creative market, which is more spiritual about seeing the world.

	collaborate to create value.	People have more worries and desires.	
Impact on customer	Consumers play a key role in creating value through co-creating products and services.	Anxiety: greater awareness and concern about poverty, injustice, environmental sustainability, public responsibility and social purpose. Desire: Make their society and the world in general a better and ideal place to live.	Consumer requirements: Products & services that satisfy their needs + Experience touches their spiritual aspects.
Marketing strategy	Collaboration between businesses and other entities like customers, with their shareholders, with their channel partners, with their employees.	Address anxiety & desire; Share the same dream; Making the difference.	Providing "spiritual significance" is the proposition of future value in marketing; Value-oriented business model

Source: Kotler et al., 2010.

The three foundations of marketing 3.0 show that the business environment is starting to change. These changes can be related to recessions, climate concerns, new social media, consumer empowerment, new wave technologies and globalization. Kotler et al (2010, p. 30) emphasized that new marketing concepts always emerged as a response to changing business environments. The change in marketing concept in marketing 3.0 is shown in the table 1.2.

Table 1.2. Future of marketing concept

The Disciplines of Marketing	Today's Marketing Concept	Future Marketing Concept
Product Management	The Four Ps (product, price, place, promotion)	Co-creation
Customer Management	STP (segmentation, targeting, positioning)	Communitization
Brand Management	Brand building	Character building

Source: Kotler et al., 2010, p. 32.

Co-creation consists of three stages. First, companies build a "platform," which is a generic product that can be further customized. Second, the business allows individual consumers to participate in customizing the platform to match their unique identities. Ultimately, the business requests consumer feedback and enriches the platform by incorporating all the customization efforts made by the consumer network. Communitization is about connecting between consumers, not with the business. Consumers can organize into communities that share similar values. In fact, people in these groups do not necessarily interact with each other; what they have in common is their beliefs and close association with a brand. Therefore, to gain

advantages, businesses need to embrace new trends and help consumers connect with each other in the community. Finally, in brand management, the problem that businesses need to solve is to build the core that makes the real difference of the brand. This core reflects this brand's identity in consumers' social networks. As a result, businesses make a difference with their competitors, giving consumers a deep impression.

After all, it can be said that it was technology and its development that had a profound impact on the market that led to the birth of the marketing 3.0 concept. Technology has enabled consumers to exchange, cooperate and create unique values together. This cooperation blurs geographical boundaries, intensifying globalization in the cultural, political and legal, economic and social contexts, which inadvertently brings about conflicts related to cultural values, paradoxes in the age of globalization. To solve the above problems, people must become more creative, focusing on the spirit rather than external factors. All make a change in consumer behaviour; they become more cooperative, cultural and spiritual, which also forces the characteristics of the marketing and the model used to change as well.

Marketing 4.0 - Moving from traditional to digital

The evolution of the fourth generation marketing concept was presented in 2016, by Kotler et al. According to them, marketing 4.0 is related to "*a marketing method combining online and offline interaction between companies and consumers.*" (Kotler et al., 2016, p. 17). In marketing 4.0, the primary task remains to satisfy customer needs (1.0, 2.0) and actively create value (like 3.0). Simultaneously, the marketing 4.0 approach aims to combine computing or artificial intelligence with other ITC technologies to increase productivity, foster human connection with each other, improve customer interaction (Başyazıcıoğlu & Karamustafa, 2018). Marketing 4.0 refers to a grounded approach to lead customers from recognizing to supporting corporate branding with the growing trend of digital technology. In the industrial revolution 4.0, five factors are being mentioned everywhere, in every field, including: the Internet of Things; cloud computing; big data; artificial intelligence and automation. These will be practical tools to support marketing in the digital era. The convergence of technology will eventually come to converge between digital marketing and traditional marketing (Vassileva, 2017).

In this era, the development of technology entails a shift in the business environment. According to Kotler et al. (2016, p. 8), today's business environment is gradually becoming more

inclusive, horizontal and social. The business environment is shifting from exclusive to inclusive. It is this shift that leads to a change in the consumer's profile. Consumers are younger, more productive and have higher incomes. Furthermore, the way in which individuals communicate has dramatically improved with the development of Information & Communication Technologies (ITC) and social media platforms. These online communication platforms bring people together, break down geographic and demographic barriers (globalization), and help create strong personal relationships between people. As a result, the customer is becoming more horizontally oriented. If a few years ago they were almost convinced by the marketing campaign, now they are related to factors such as: family, friends, colleagues, social media posts, Facebook posts, Youtube , Twitter (Krauss, 2017). The customer reaches and integrates into many different communities, it leads to the customer buying process becoming more social than before. Customers have the opportunity to be completely proactive in choosing the way as well as the content of information they receive. They seek advice and reviews, both online and offline. This change poses no small challenge for marketers to find new approaches as well as content building strategies to convince target customers on each reach point to the brand. All of these require brands to apply new tactics to gain market share in the minds of customers. This is also the mission that marketing 4.0 must fulfill in today's context.

The customer path in marketing 4.0 changes. Previously, when it came to describing the customer's path, the AIDA model: attention, interest, desire and action developed by Lewis (1898) was the most widely regarded and used (Rehman et al., 2014). However, this framework is outdated and a bit too simple to represent the ever-frequent, hyper-connected consumer's path (Probst, 2017). Kotler et al. (2016) proposed a new framework for adapting to changes shaped by technology. The proposed new framework is 5A's model (Aware, Appeal, Ask, Act, Advocate). The 5A's provides a much-needed update to the AIDA framework and will help develop the complete channel approach (Gau, 2019). However, in practice, the customer does not always go through all five stages in the 5A's model. Customers may skip a few steps if there is an impact from their surroundings (Kotler et al., 2016, p. 66). The shift in consumer decision-making means that marketers need to adjust their spending and see this change, not as a loss of power over customers. It is an opportunity to get to the right place, at the right time, give them the information and support them. It should be noted that the primary purpose of marketing 4.0 is to drive customers from awareness to action. To achieve it, marketers should leverage three

primary sources of influence, also known as the O (O3) zone. This area will include our influence, that of others and that of outside. This useful tool can help marketers optimize their marketing efforts.

The strategic marketing applications in the digital economy covered in Marketing 4.0 include: Human-Centric Marketing, Content Marketing, Engagement Marketing and Omnichannel Marketing. Each marketing tactic will be appropriate for each stage of business branding. Implementation of the tactics above in branding will be presented in the table 1.3.

Table 1.3. The tactic marketing applications in marketing 4.0

Marketing tactics	Stages	Purpose	Act
Human-Centric Marketing	Brand attraction	Relieve the concerns and desires of customers frequently	Build the human aspect of the brand
Content Marketing	Brand Curiosity	Stimulate customer interest	Deliver valuable and useful content to customers
Omnichannel Marketing	Brand Commitment	Motivating customers from awareness to action	Integrate online and offline channels
Engagement Marketing	Brand Affinity	Address the fact that the customer moves from channel to channel and expects a seamless and consistent experience	Mobile apps: enhance digital customer experience; Social CRM: engage customers in conversations and provide solutions; Gamification: promoting consistent customer behavior sets.

Source: Kotler et al., 2010.

As mentioned above, marketing 4.0 will be the perfect combination of traditional marketing and digital marketing. The two will transform roles back and forth throughout the customer path. Marketing 4.0 is a deep and expansive way of marketing in the previous generations. It is more people-centered, with every aspect of the consumer in real life and online. The role of marketers is to guide customers on their journey from the awakening phase of product or service awareness to the final stop, which is an intervention, that is, spreading knowledge about products by consumers. When there are first interactions between customers and brands, traditional marketing plays a crucial role in building product awareness and interest. But when the customer wants a "*closer*" relationship with the brand, then digital marketing gradually shows its importance. The most critical role of digital marketing is to drive purchase action and then generate brand advocacy. Digital marketing focuses on developing short-term results by analyzing user behaviour data (data-driven marketing, performance marketing). In contrast, traditional marketing focuses on creating brand appeal, building positions and

connections in the minds of customers to create brand value. The two complement and assist each other throughout the process. This is the core of marketing 4.0 (Kotler et al., 2016).

Marketing 5.0 – Technology for humanity

Marketing 5.0 was identified earlier than expected. Kotler et al. (2021) argued that marketers are still in a transition to the digital world. But the COVID-19 pandemic has accelerated the process of business digitization. With the adoption of lockdown policies, both markets and marketers must adapt to the new non-touch and digital reality. That's why it's the right time for Marketing 5.0: Technology for Humanity. Kotler et al. (2021) also emphasized that marketing 5.0 combines elements from marketing 3.0 and marketing 4.0.

Kotler et al. (2021, p. 6) defined marketing 5.0 as "*the application of human mimicking technologies to create, communicate, deliver, and enhance value across the customer journey.*" Technologies covered include Artificial Intelligence (AI), Natural Language Processing (NLP), sensors, robotics, Augmented Reality (AR), Virtual Reality (VR), Internet of Things (IoT), and blockchain. Among the above technologies, AI technology stands out. AI is a technology designed to work with people and focus on building systems that enhance and support human cognition (Hassani et al., 2020). In marketing, AI provides marketers with accurate information and data about customers, from which marketers can deliver tailored marketing campaigns for each specific audience (Kotler et al., 2021, p. 7). Specifically, AI helps reduce complex steps in the new product development process; reveal shopping patterns applicable to retailers to recommend relevant products and content to a group of shoppers based on their profiles. Besides, it can build programs and advertising content based on algorithms for businesses. More importantly, it can be combined with other forms of technology such as NLP or IoT to bring advanced and modern ways to approach customers. However, a significant disadvantage when using this technology is the high cost. Therefore, solutions and improvements are underway to reduce costs and deliver to all businesses in the future.

Thus, it can be noted that technology is gradually becoming an assistant for marketers in reaching customers in the digital age. Kotler et al. (2021, p. 10) mentioned five ways in which technology aids marketing:

- **Make more informed decisions based on big data:** Technology has provided marketers with an extensive database related to transactions, call center inquiries and email exchanges

of information sought on the Internet or even the content of social media posts. With such a wealth of information, marketers can now profile customers at a granular and personal level, enabling one-on-one marketing at scale.

- **Predict outcomes of marketing strategies and tactics:** technology that provides businesses with a model to predict the effects of future strategy based on past and present information and data. As a result, marketers can avoid possible failures and do not endanger the brand.
- **Bring the contextual digital experience to the physical world:** In the past, marketers often applied highly contextual marketing to activities in a digital environment. Today, connected devices and sensors — the Internet of Things — enable businesses to bring contextual touchpoints into the physical space, enabling seamless omnichannel experiences. Sensors allow marketers to determine who is going to the store and provide personalized marketing.
- **Augment frontline marketers' capacity to deliver value:** In this case, marketers can focus on building an optimized symbiosis between themselves and digital technologies. Technologies can perform simple, high-volume operations or operations with instant feedback. Frontline marketers can focus on delivering sophisticated, highly specialized interactions when needed.
- **Speed up marketing execution**: Customer preferences are constantly changing, putting pressure on businesses to profit from shorter periods. The emergence of startups, performing rapid market tests and real-time validation, provide a solution to this problem. Therefore, enterprises combine with startups based on open-source platforms to promote co-creation to accelerate speed to market.

Based on how advanced technology adds value to marketing, Kotler et al. (2021, p. 10) identified five essential components of Marketing 5.0. They include predictive marketing, contextual marketing, augmented marketing, data-driven marketing, and agile marketing. The relationship of these five components is shown in Figure 1.2. Kotler et al. (2021) explained that the three forms of predictive marketing, contextual marketing, and augmented marketing are built on two organizational principles: data-driven marketing and agile marketing. In particular, data-driven marketing involves using an ecosystem of data from various sources such as internal and external. This data system drives and optimizes decisions while ensuring the principle: every

decision must be made with complete data. Agile Marketing embodies the second principle of marketing 5.0: an organization's agility to respond to an ever-changing market.

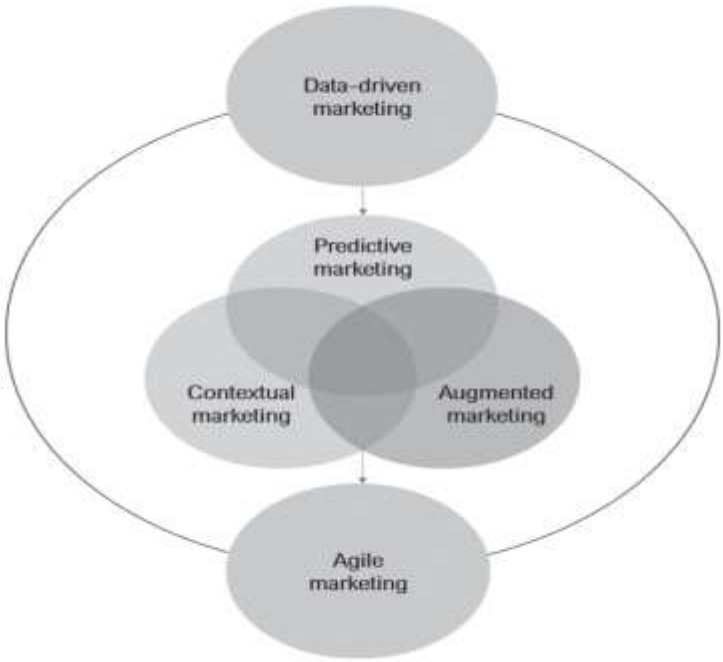

Figure 1.2. Five components in marketing 5.0
Source: Kotler et al., 2021, p. 13.

The three applications are interconnected and therefore are not mutually exclusive. Businesses build a predictive marketing model that predicts products that customers with a specific demographic will buy. Customer data will be collected through various sensors at the point of sale, including a facial recognition camera attached to a digital self-service kiosk. The camera selects a trigger and sends a signal to the screen to display contextual advertising, thereby delivering the product suggested by the predictive model to the right customer. If the self-service option is unsatisfactory, a frontline staff, augmented with digital tools containing predictive modelling, can help customers. Table 1.4 lists the goals and tactics of the three applications in marketing 5.0.

Table 1.4. Three applications in marketing 5.0

	Predictive marketing	Contextual marketing	Augmented marketing
Aim	Anticipate market demand with proactive action	Create personalized feedback and perception experiences	Provide human interaction empowered by technology

Tactics	- Predictive customer management; - Predictive Product Management; - Predictive Brand Management.	- Building smart sensor infrastructure; - Offers three levels of personalized experiences: (1) Personalized Information; (2) Customized Interaction; (3) Total Immersion.	- Building a tiered customer interface: Tiered Sales Interfaces; Tiered Customer Service Interfaces. - Providing Digital Tools for Frontliners.

Source: Kotler et al., 2021.

Although Kotler et al. (2021) considered that marketing 5.0 is the age of technology, they still emphasized the importance of the human factor. Technology is applied to help marketers create, communicate, deliver and enhance value throughout the customer journey. Companies can implement these methods with any available hardware and software support on the market. However, it's important to note that humanity should remain at the heart of marketing 5.0's focus because only humans can understand others. Human marketers will know how to use the data gathered by technology to filter and interpret the underlying motives of customer actions. They are also the ones who can understand how to design a strategy that applies the right technology for different marketing use cases. So, marketing 5.0 is the process by which companies must leverage the balanced symbiosis between human and computer intelligence.

Table 1.5. shows a comprehensive overview of the five marketing concepts analyzed above. Thereby, showing the characteristics and impact of technology on each modern marketing generation.

Table 1.5. Comparing between marketing 1.0, 2.0, 3.0, 4.0 and 5.0

	Marketing 1.0	**Marketing 2.0**	**Marketing 3.0**	**Marketing 4.0**	**Marketing 5.0**
Concentration	Product-oriented Marketing	Consumer-oriented Marketing	Value-driven marketing oriented towards people	Human-centered marketing; Localized virtual marketing	Technology for humanity
Objective	Sale of products	Satisfaction and customer retention	Make the world a better place; providing positive values	Today create the future; Inspiring the client to co-create new content and products/services	Create, communicate, deliver and enhance value across the customer journey
Forces enabling	Industrial Revolution	Information technology	New wave technology	Digital economy; Cybernetic revolution and Web 4.0	COVID-19 pandemic
Companies' perception of the market	Mass customers with material needs	Smarter customers driven by reason and	Whole human with mind, heart and spirit	Netizen man (citizen of the network); Collection of fully	New touchless and digital realities

		emotions		conscious buyers, co-creative products	
Key marketing Concepts	Product development	Diversification and distinction on the market	Higher values	Anthropomorphization of brands; Mass customization	Tool-agnostic
Company marketing guidelines	The specificity of the product	Corporate and product positioning	Corporate vision and value	Promoting content and creating brands	Balanced symbiosis between human and computer intelligence
Value proposition	Functional	Functional and emotional	Functional, emotional and spiritual	Commitment and trust; Functional, emotional, spiritual and self-creative	New customer experience
Interactions with Consumers	Collective approach, one-to-many transactions	Individual approach, one-to-one relations	Many-to-many cooperation; Relationship	Relations based on the functioning of the networking, an enormous generation of consumers	The combined relationship between the digital environment and reality

Source: own study based on Başyazıcıoğlu & Karamustafa, 2019; Wereda & Woźniak, 2019.

Thus, through the above analysis, it can be seen that information technology has a huge impact on marketing. It changes and develops marketing concepts from time to time, leading to the appearance of many new forms of marketing. Mobile marketing is one of those forms. The advent of mobile marketing was tied to the emergence of mobile devices, most notably smartphones. With more than 3.5 billion users globally (Statista, 2020), the smartphone has become entrenched in the modern life. Mobile technologies provide businesses with the tools to efficiently exploit a rich inventory of consumer data used to reach consumers, providing high efficiency quickly. The next section will focus on a comprehensive understanding of mobile marketing, including the rise of mobile technology, the definition and role of mobile marketing in business operations, and also things to note when using this form to achieve the highest efficiency for both consumers and businesses.

1.2. The rise of mobile marketing

Mobile channels are emerging as a new form of potential for marketing communications thanks to recent developments in mobile communications technology, as well as mobile devices with distinct features (Varnali & Toker, 2010). In the past, consumers still had to connect their

mobile devices to wireless networks, but now mobile technologies keep mobile devices "on" (Laddad et al., 2015). It can be seen that, in recent years, the growth rate of mobile technology is speedy. As a result, mobile devices can meet the needs and demands of users even more (Huang, 2012). Besides, consumers only have to pay for the data they exchange, not for the time of use. This was one of the reasons that mobile devices were used frequently (Laddad et al., 2015). Storch and Juarez-Paz (2018) identified mobile devices as the most popular communication tools of the 21st century.

In the early days, phones were designed solely for voice communication (Laddad et al., 2015). As a result, mobile phones only had simple features such as using an analogue system, focusing on voice quality. Besides, they also had some disadvantages such as low battery life; limited capacity (Agarwal et al., 2019). Mobile technology during this time was considered the first generation (1G), and this was also the foundation for all the next generations of mobile technology (Salih et al., 2020). When the second generation of technology (2G) was introduced, mobile phones provided more features, but the design had not changed much (Meraj & Kumar, 2015). 2G offered services such as text messaging, picture messaging and MMS (Salih et al., 2020). 2G had higher security for both sender and receiver. All text messages were digitally encrypted, allowing data to be transmitted in a way that only the intended recipient could receive and read it (Haji et al., 2018).

The emergence of smartphones and the advancement of technology in 3G and 4G brought many new strides (Meraj & Kumar, 2015). Smartphones began to have computer-related capabilities, different from conventional phones, allowing more complex operating systems to run with more memory and longer battery life. The third generation of technologies (3G) supported multimedia technologies while improving information transmission rates (Meraj & Kumar, 2015). As a result, network operators could offer users a range of more advanced services while achieving greater network capacity through improved spectrum performance (Ahmed & Sallow, 2017). Services included wireless complete area telephony, video calling, broadband wireless data, mobile television, Global Positioning System (GPS), and video conferencing in a mobile environment (Ramzan & Shaheen, 2018). 4G has a noticeable change that offers more bandwidth, high security and high-speed Internet access. Consumers can quickly access the mobile web, play games, watch HD videos or HQ video conferencing (Salih et al., 2020). Smartphones are also designed to correspond with the expansion of the touch screen to

enhance the consumer experience. They no longer focus on calling and sending text messages but starting to expand into other activities but starting to expand into other activities such as surfing the web, checking email, watching videos, entering data, and even word processing (Reid, 2018). It is possible to say that smartphones are gradually replacing personal computers (Nwaogwugwu, 2017).

The latest generation of technology today is 5G. 5G network was considered to be the perfect level of wireless communication in mobile technology (Agarwal et al., 2019). Cable networks are now a memory of the past. The development of 5G is continuously evolving now, creating a virtual wireless network called the Worldwide Wireless Web (WWW). All previous wireless technologies made it easy to entertain the phone and share data, but 5G is bringing a breakthrough and transforming real mobile life (Shukurillaevich et al., 2019). 5G networks will revolutionize all areas of business. The vision of 5G applications is to bring wireless mobility to society's everyday life soon (Abidin et al., 2020).

Mobile technology did not stop, and it continued to develop and create new gadgets (Salih et al., 2020). Consumers increasingly use mobile devices for communication, entertainment, business and information provision. Due to the advent of new technologies, mobile marketing has changed a lot from the past or even a few years ago (Fang, 2019). Existing technologies allow mobile marketers to engage with users easily, send personalized content, and create a higher, more effective interactive experience than unilateral (traditional) messages. From there, it improves the consumer understanding of advertising content. A business with mobile customer contact information can broadcast text messages, pictures, voices, videos, emojis and maps for customers to notify them of new promotions or new releases. Mobile technology is changing day by day to better respond to user requirements, which has contributed to improved mobile marketing (Rowles, 2017, p. 45).

Technology creates many valuable tools for everyone's life, including mobile devices. Mobile devices include cell phones (e.g. smartphones), tablets (e.g. Ipads) or wearable devices (e.g. Smartwatch, Google glass). The smartphone is considered the most popular device in the world (Mullan & Wajcman, 2017). While households may have one or two desktops or laptops, it seems everyone from grandparents to preschoolers has their smartphones. From industrialized nations to developing countries, smartphones have swept worldwide (Docter & Buhagiar, 2019, p. 610). The number of people using mobile phones is increasing rapidly. In 2021, the number of

smartphone users worldwide was around 6.6 billion (Statistia, 2022). The smartphone is used by many people, thanks to its outstanding features—any cell phone with its processor and operating system. Touch screens are ubiquitous, and nearly all devices come with features like a web browser, email access, media player, GPS, camera, and various apps. They can connect wirelessly via cell, Wi-Fi, Bluetooth and, in many cases, Near Field Communication (NFC) or Infrared (IR). Their small screen sizes, usually no more than 5 inches to 7, make them less suitable for business applications like creating documents or spreadsheets. Still, they're perfect for carrying and reading emails, text, listening to music, and surfing the Internet. Smartphones have gradually influenced almost every step of human life (Gowthami & Kumar, 2016).

Human society has changed drastically with the introduction of smartphones (Lakshmi, 2016). Outstanding areas where the impact of smartphones is evident include business, education, health and social life. Therefore, smartphones play an essential role in the integration of the elderly with special needs. Smartphones have the potential to give this group of people the chance to live more independently (Sarwar & Soomro, 2013). The more they do themselves, the better they will feel and enjoy life. Furthermore, in the education sector, the Internet has become a part of every student's life. Along with the Internet, smartphones provide an alternative channel to support distance education and training services (Soomro et al., 2019). As a result, it contributes to improving the quality of education. In the healthcare industry, smartphones and mobile applications help people monitor and check the quality of their daily health lives (Zhang & Ho, 2017). Some apps can administer prescriptions, advertise alternative treatment options, provide price comparisons, and validate prescriptions. Besides, several apps are available for monitoring exercise, diet, and blood pressure allowing smartphones to play an essential role in the medical industry. Therefore, it can be stated that mobile devices are gradually bringing more modern and convenient life for people.

Mobile devices have also had a significant impact on business. First, it creates new dimensions for the enterprise (Lakshmi, 2016). It helps smartphone providers enter the industry and creates a new domain for App development companies, Internet service providers, and other related fields. Second, there are marketing communications changes due to the widespread penetration of smartphones or other mobile devices (Soukup, 2015). Thanks to real-time connectivity enabled by smartphones, brands have been able to undertake promotional offers, communicate marketing experiences, submit relevant advertisements and seek consumer loyalty

(Shan et al., 2016). Smartphones change email marketing (Wozniak, 2020). In the past, most customers had to read emails on their personal computers, and cell phones have changed this fact by providing advanced technologies. These technologies make it possible to check mail or push email notifications when there is a new message. Instead of waiting for customers to come to the business, they can use push notifications to get in touch when customers are most receptive to messages. Mobile marketing has made potential consumers more accessible to brands (Shan et al., 2016). Customers receive messages not only through regular SMS, but they can also use many of the capabilities provided by a smartphone, which can be named mobile applications. In 2021, Android users could choose between 3,48 million apps in Google Play, while Apple's App Store was the second-largest app store with nearly 2.22 million apps available for iOS (Statista, 2022).

For customers, mobile phones have significantly changed their buying and consuming behaviour (Saprikis et al., 2018). In the past, with the advent of the Internet, online shopping was widely used, customers include predictive marketing through personal computers. Nowadays, consumers turn to e-commerce transactions via mobile devices, in which retail transactions via smartphones account for a very high proportion (Fagerstrøm et al., 2020). The reason is that smartphones allow consumers to access shopping anytime, anywhere and payment through it is also very easy with applications such as Apple pay, Google pay or the application of bank. The number of mobile proximity payment users in 2019 and 2020, respectively, reached 0.95 billion and 1 billion users worldwide (Statista, 2020). Besides, mobile devices provide all available information such as pre-store deals or promotions, product information and pricing so that consumers can accelerate their purchasing and decision-making process (Sayol, 2016). Furthermore, mobile applications are also valuable assistants for consumers (Fagerstrøm et al., 2020). Customers can download mobile apps to organize and remind them of their grocery shopping; or an app from one of their favourite brands, it sends real-time information about that brand's new offers and products; an app to manage and schedule their next trip (buy tickets, book a hotel room, guide travel, etc.).

Mobile devices have revolutionized digital marketing by making it more accessible, convenient, and efficient for consumers and businesses (Johnston, 2020). It has created more in-depth opportunities for companies to advertise their brands to consumers regardless of their location. Improved mobile-based marketing methods have created lucrative opportunities for

businesses to profit through increased sales, thereby driving digital marketing. Digital marketing is no longer about email and website optimization and social media on mobile devices (Yadav et al., 2014). Mobile phones create a new and improved form of social media for businesses to satisfy online consumers and gather enough information to facilitate personalized products that cater to consumers' needs. Mobile phones are the most direct and convenient channel for reaching and engaging customers, whether it will be for selling products or services, providing information or building relationships (Gracz, 2016). With the upgrade of mobile technology, mobile devices do not support existing marketing forms but lead to popularity for mobile marketing (Öztaş, 2015). Mobile marketing is an appropriate and effective form of marketing compared to traditional marketing (Robayo et al., 2017). However, businesses are forced to prepare for the future by adapting to technological changes and looking for opportunities to build relationships with customers. From there, there is a suitable conversation on new means and methods.

The popularity of mobile marketing has also drawn interest from many researchers in many fields, such as theory, strategy, consumer behaviour and legal, public and policy (Varnali & Toker, 2010). They all want to build a complete theoretical basis for mobile marketing. Gracz (2016) has commented that mobile marketing is a relatively new term, and there is still a discussion in the literature on how to think about mobile marketing properly.

Kavassalis et al. (2003) argued that mobile marketing is "*technologically simple to use the mobile network as an additional distribution channel to deliver old fashioned commercial information and interactive promotions."* Rettie et al. (2005) defined mobile marketing *"as marketing activities that deliver advertisements to mobile devices."* Mobile Marketing Association (MMA, 2005) generalized *"Mobile marketing is any form of marketing, advertising or sales promotion aimed at consumers and carried out on a mobile channel.*" It can be noted that mobile marketing is not yet seen as a separate form of marketing. It is merely a mean of marketing expanded by businesses through mobile devices. Previous studies were also often based on classic mobile devices with only a few simple features and operations. Besides, Leppäniemi and Karjaluoto (2008) argued that the definitions often focus on the field of technology, which leads to confusion of technology assignment for mobile marketing.

Over time as mobile technology evolved along with the Internet, the definition of mobile marketing has gradually been improved (Varnali & Toker, 2010). Mobile marketing is combined

with direct communication toward mobile consumers by using unique assistive features, including SMS, MMS, WAP, Bluetooth and many applications/social networks (Lin et al., 2017). More specifically, mobile marketing is a set of programs and practices that businesses use to communicate and interact, in an interactive way, with consumers. At the same time, it allows them to access information, download content or buy products on a mobile device (Gao et al., 2013). Leppäniemi and Karjaluoto (2008,) also emphasized mobile marketing as "*the use of the mobile medium as a mean of marketing communications*." MMA (2006, cite in Mirbagheri & Nia, 2010) - defined mobile marketing as "*the use of wireless media as an integrated content delivery and direct-response vehicle within a cross-media marketing communications program*." After three years, they continued to improve and completed this definition. They defined: "*mobile marketing is a set of practices that enables organizations to communicate and engage with their audience in an interactive and relevant manner through any mobile device or network.*" (MMA, 2009). These concepts all reflect the participation of mobile marketing in communication through mobile devices. Looking at the role of mobile marketing in customer communication shows that it is no longer merely a tool but a marketing channel. Shankar and Balasubramanian (2009), when defining mobile marketing, showed how multidimensional communication between businesses and customers was done via mobile devices to provide promotions.

On the other hand, some researchers define mobile marketing based on their distinctive characteristics. Mobile marketing is a form of marketing with several features to help improve consumers' knowledge through localization, dissemination, short message service, personalization, multimedia messaging service and two-way interactions between organizational representatives and consumers (Chen et al., 2016). Dushinski's definition of mobile marketing is slightly different: "*Mobile marketing is how businesses communicate with consumers on their mobile devices, with their explicit permission, at the right time, at the right place while providing relevant value.*" (Dushinski, 2012). In this definition, the Author mentioned permission. Mobile marketing can limit the "invasiveness" of the marketing process (i.e. massively conducted regardless of whether the customer may or may not be interested in receiving messages). The permission here is that the consumer must be ready to communicate when a mobile phone is used as a marketing tool. Without customer permission, mobile marketing will fail (Berman & Zarb, 2016), which not only affects the effectiveness of marketing activities but sometimes, it also

negatively affects the image of the whole business. Agreeing with this argument, MMA (2011) also asserted that the mobile channel is the best mean of permission-based marketing as it allows brands to transact with each target customer as an individual. The two phrases "*at the right time*", "*at the right place*" show a distinctive difference in mobile marketing from other forms. In mobile marketing, customer needs are not necessarily tied to one place or time, it is spontaneous and must be satisfied quickly if the company wants to convert demand to sales (Scott, 2012). Smart cell phone features allow buyers to easily find products and services within the exact time, meaning they react immediately to the next company when they are ready to buy. This issue leads the interaction between the company and the prospect lasting only minutes or even seconds.

The definition of mobile marketing has matured over time in line with the development of mobile technology, from just another marketing medium to being a channel and ultimately a separate form. Based on the concepts outlined above, the Author proposed a definition of mobile marketing as a form of marketing that:

- uses mobile devices such as cell phones, smartphones, PDAs, tablets or smartwatches to achieve campaigning goal,
- sends personalized marketing messages, short messages or multimedia messages via wireless or mobile network with the customer's permission,
- provides promotional information, interacts and builds customer relationships at the right time, right place.

In the coming time, mobile marketing continues to grow and apply widely thanks to the benefits that it brings to both customers and businesses (Öztaş, 2015). Therefore, the concept of mobile marketing will gradually be built entirely and consistently to support the next research as well as the application in practice. The table 1.6 summarizes mobile marketing definitions.

Table 1.6. Definitions of mobile marketing

Authors	Definition	Focus on
Kalakota & Robinson, 2002	The distribution of any kind of message or promotion that adds value to the customer while enhancing revenue for the firm.	Customer value
Mort & Brennan, 2002	The application of marketing to the mobile environment of smart phones, mobile phones, Personal Digital Assistants (PDA), and telematics.	Emphasis on the role of mobile devices
Heinonen & Strandvik, 2003	Mobile marketing uses SMS and MMS as marketing media in push campaigns.	Role of SMS and MMS
Kavassalis et al.,	Mobile marketing uses the mobile network as an additional	Additional distribution

2003	distribution channel to deliver old fashioned commercial information and interactive promotions.	channel
MMA Code of Conduct, 2005	Mobile marketing is any form of marketing, advertising or sales promotion activity aimed at consumers and conducted over a mobile channel.	Focus on mobile channel
Rettie et al., 2005	Mobile marketing is marketing activities that deliver advertisements to mobile devices.	Marketing through mobile devices
Haghirian & Madlberger, 2005	The usage of interactive wireless media to transmit advertising messages to consumers in form of time and location sensitive, personalized information with the overall goal to promote goods and services.	Role of interactive wireless media
Leppäniemi & Karjaluoto, 2008	The use of mobile medium as a mean of marketing communications.	Role of mobile medium
Soroa-Koury & Yang, 2010	Text- and graphics-based commercial messages that are sent to consumers via mobile devices, including cellular phones, pagers, and PDA.	Highlights text and graphics-based commercial messages
Kaplan, 2012	Mobile marketing constitutes of any marketing activity conducted through a ubiquitous network to which consumers are constantly connected using a personal mobile device.	Ubiquity of mobile marketing
Dushinski, 2012	Mobile marketing is how businesses communicate with consumers on their mobile devices, with their explicit permission, at the right time, at the right place while providing relevant value.	Highlights the importance of time and location sensitive in communication
MMA, 2012	Mobile marketing is a set of practices that enables organizations to communicate and engage with their audience in an interactive and relevant manner through any mobile device or network.	Role in communicating and interacting with their audience
Chen et al., 2016	Mobile marketing uses means such as localization, dissemination, short messaging, personalization, and multimedia messaging services for a two-way interaction between organizational representatives and consumers.	Interaction

Source: own study.

1.3. Mobile generations

According to the speed of technology development, the communication channel of mobile marketing can be divided into generations. The generations of mobile connect directly to the types of mobile marketing, which are shown in table 1.7.

Table 1.7. Mobile marketing channel evolution

Mobile generations	Mobile marketing channel	Mobile communication tool
1st Mobile Generation	Mobile telemarketing	Mobile voice;
2nd Mobile Generation	Mobile messages	SMS/ MMS marketing;
3rd Mobile Generation	Mobile Internet	Mobile website; Applications
4th Mobile Generation	Mobile television	Mobile T.V.;
5th Mobile Generation	Proximity and Location-Based Mobile	Near-Field Communications; QR codes; Geolocation.

Source: own study.

1st Mobile Generation - Mobile telemarketing

The first specified generation is mobile telemarketing. Before, in the absence of mobile phones, telemarketing was traditionally associated with landline phones. Telemarketing is a traditional communication channel. Although this channel has a less profound impact on personal motivation than social media, it has a considerable role as a channel to distribute products, services and information (Carroll et al., 2007). Thanks to the two-way interaction between employees and customers, telemarketing can help companies determine customer reactions and attitudes, customer requests and actual market conditions of their products (Shareef et al., 2016, p. 36).

Mobile telemarketing can be considered as the development of the traditional form of telemarketing. Mobile telemarketing not only inherits the characteristics of traditional telemarketing, but it also has outstanding and distinct features. Personalization is one of them (Artaya, 2019). Because mobile phones are personal devices that are not shared with other users, businesses can reach their target audience more effectively. The mobility of this device allows businesses to connect with customers anywhere and anytime. As a result, the message the marketer gives to the customer becomes more relevant, personalized, and timely.

2nd Mobile Generation - Mobile messages

The 2nd generation is separated in connection with the popularization of new forms of communication- mobile messages such as Short Message Service (SMS) and Multimedia Message Service (MMS). Mobile messaging (SMS/MMS) is a service provided on a mobile platform. As a result, businesses can interact with customers via voice communication and send text messages. This approach gives companies many advantages: reducing false information such as phone numbers, addresses or email (Bamba & Barnes, 2007), cost-effectiveness (Okazaki, 2005b), perfect replacement for traditional paper services, long-term storage on mobile devices. Sending and receiving messages can be done automatically (Huang & Symonds, 2009). Above all, the new way of communication, namely text messaging (SMS), multimedia (MMS), has become popular among young people and spread throughout all ages. It is all of these things that force businesses to realize and conduct applications of mobile messages in marketing activities.

Mobile phones, in addition to making wireless phone calls, also have a primary feature that users also fully exploit in short message service or text messaging. It allows exchanging

short text messages between subscribers. Brown et al. (2008) asserted that SMS messaging is a widely-used communication mechanism for mobile phone users, and, above all, SMS is also a means of communication (Mansour, 2014). Therefore, SMS is one of the first marketing formats in the mobile landscape and one of the most popular (Bakr & Tolba, 2016). In the context of SMS advertising, Khasawneh and Shuhaiber (2018) emphasized that most mobile users (both smartphone users and non-smartphone users) have been contacted by brands using SMS marketing to reach out and connect with them.

SMS marketing is an effective marketing method (Dix et al., 2016). It focuses on using text messages to spread marketing messages. Most businesses use it extensively to send messages to customers about new products, specific discounts or promotions. These messages may include contact information such as a phone number or website address if the customer needs detailed inquiries (Ishaq et al., 2015). Moreover, the SMS information could be based on the customer's demographics, lifestyle, personality and self-concept (Aslam et al., 2016). As technology has evolved, SMS marketing has been adding more and more features. For example, standard shortcodes (CSCs) are four or six digits of phone numbers that mobile phone owners can use to send text messages. In return, they can receive notification information, electronic gift certificates, or other interactive marketing activities such as voting, quizzes, or sweepstakes. The storage capacity is also a must-mention benefit of SMS. Customers can reopen text messages whenever they need them, without necessarily having an Internet connection like other methods (Tsang et al., 2004).

MMS can be considered as an upgraded version of SMS. MMS is supported with additional multimedia files such as graphics, audio, images or video. Therefore, MMS facilitates delivering a richer marketing message (for example, colour images of products, audio/video and animations). MMS has increased rapidly due to the increasing demand for multimedia content in sending messages using mobile technology (Setyono, 2015). This ability can solve SMS's shortcoming when it is only based on text; much information that businesses want to convey is not shown. Moreover, MMS also stimulated consumers' attention and interest, thereby improving their response rate (Lee et al., 2007). Some new features have also been developed, such as telemedicine (Mermelstein et al., 2017), streaming (Govind et al., 2010) and e-learning (Basak et al., 2018). Besides that, marketers can incorporate MMS and mobile features for marketing strategies. These campaigns are mainly based on the users' own content. For example, consumers

could capture moments of experiencing products or services and shared with others by sending pictures via MMS (Strother et al., 2008). Lin and Hsu (2009) stated that MMS had upgraded mobile media by making it more navigable, more versatile when compared to SMS. The authors also asserted that multimedia messaging service promises to introduce a new way to share content and information to enhance consumers' personal connection experience. It can be said that mobile technology has created a perfect MMS development environment (Kou & Yu, 2006).

In conclusion, message marketing (SMS/MMS) is the successor to content marketing (Huang, 2012), which is the first and most basic form of mobile marketing (Mahatanankoon & O'Sullivan, 2008). Moreover, the SMS/MMS system is based on digital communication. Therefore, it is simple to allow the system to recognize the message's content, which facilitates complete automation of the sending and receiving process (Kautonen et al., 2007). However, when using SMS/MMS, marketers need to consider the consumer's permission to receive business messages via their mobile phone (Suher & Ispir, 2011). Because without consumers' consent, they will feel violated on personal information, here is the mobile phone number. This issue can negatively impact the brand of the enterprise (Bamba & Barnes, 2007). Simultaneously, sending messages anytime and anywhere is very easy for consumers who consider them spam messages, annoying them. Therefore, to ensure the effectiveness of marketing via SMS/MMS, marketers need to pay attention to the time, the number of messages, the content of the message to be able to attract and receive consent from the consumer side, motivating them to be willing to communicate and respond to the business.

3rd Mobile Generation - Mobile Internet

The 3rd mobile generation refers to mobile Internet. Mobile Internet marketing is often referred to as mobile marketing. It is a marketing strategy involving the incorporation of mobile devices and corporate websites (www). Mobile Internet marketing focuses on optimizing a website to enhance friendly mobile devices and search engines. Therefore, mobile Internet marketing includes mobile websites and later mobile app sections (Liu et al., 2019). These are two notable mobile channels.

Mobile websites are based on the technology of HTML browser pages similar to online websites. A mobile website can be viewed as a modified version of a website that works specifically on mobile devices, providing quick and consistent download to a mobile device's

screen size to meet user interaction expectations (Budak et al., 2016). Typically, mobile websites are a subset of what is available on a desktop. Users may encounter one of the following types of websites on their mobile devices:

- Responsive-design sites are websites designed for countless devices with different screen sizes. They automatically adjust their content layout according to the available screen size. For example, the same content can be displayed in three-column format, two-column format on tablets, and one-column format on smartphones.
- Mobile-dedicated sites are websites designed exclusively for mobile phones. They are often under a separate Uniform Resource Locator (URL) widely used by the famous "m." (example: m.site.com) and completely different from the whole website.
- A web app is a particular type of website specifically for mobile devices that looks like an app.

Meanwhile, a mobile application, commonly referred to as an application, is a type of application software designed to run on mobile devices, i.e. smartphones or tablets (MMA, 2008). Mobile applications are currently developed on several different operating system platforms (e.g. iOS, Android, Windows 7, etc.) by various hardware manufacturers (Apple, HTC, Samsung, Google, etc.) with different delivery methods (i.e. native apps, mobile web apps) across multiple platforms (i.e. smartphones, tablets). Mobile application developed in many various fields, namely communications (e.g. Internet Browsing, email IM client, social networking), games (e.g. puzzle/strategy, cards/casino, etc.), multimedia (graphics/image viewer, presentations viewers, etc.), productivity (Calendars, calculators or diary, etc.), travel (City guide, currency converter, translators or GPS/Maps, etc.), utilities (Profile Manager, task manager, file manager) (Islam et al., 2013). Applications are typically downloaded from application distribution platforms operated by owners of mobile operating systems, such as the App Store (iOS) or Google Play Store. Some apps are free, and others are priced, with profits split between app creators and distribution platforms (Techopedia, 2018).

Choosing which mobile channel to invest in is a big question that businesses need to study carefully. In terms of cost, developing and maintaining an app typically requires more investment in time and money than a mobile website (Doom, 2014). However, Chaffey (2017) emphasized that mobile applications are more dominant than mobile website. The reason he gave is that more than 90% of consumers spend on mobile using apps. Moreover, consumers actively

download the apps they need. Thus, mobile applications are less intrusive (Liu et al., 2019). Currently, retailers are working towards combining mobile websites and mobile apps in one marketing strategy. Since both are designed for small mobile touchscreens, they have similar usage contexts and layouts. Xu et al. (2014) also emphasized that the addition of the application to the mobile website significantly drives consumer visits to the mobile website. This businesses' solution is a hybrid application - one part native application, one part mobile website. Like native apps, they reside in an app store and can take advantage of the many features available on the device. Like mobile websites, they rely on the HTML displayed in the browser, warning that the browser is embedded within the application.

Businesses can conduct various marketing activities on mobile Internet platforms, such as mobile Search Engine Optimization (mobile SEO) or Mobile Social Media (MSM). Both of these activities can be done on both mobile web and mobile apps. Mobile SEO optimizes content to achieve better rankings for mobile websites in search engine result pages. This process improves organic traffic, which is the traffic coming to the mobile website from search results. Thus, mobile SEO refers to search activity on mobile devices. Mobile search is a search engine query from an Internet-connected handheld device, such as a tablet, smartphone, etc. (Teevan et al., 2011). The types of information that users search on mobile devices are often different from desktop searches. A mobile web search engine's ability allows users to find mobile content on mobile-available websites (Razorfish, 2015). Forms on mobile search include Place Search, Organic Search, and Paid Search (Google Adwords). One feature of mobile search that is more effective for users is a local mobile search. This feature is based on the geolocation feature so that consumers can search for information around their location at any time (Teevan et al., 2011). Therefore, the information provided will be much more helpful.

MSM is a group of mobile web pages or applications that allow the creation and exchange of content (Kaplan, 2012, p. 137). More specifically, MSM is an interaction, exchange of information, and design of user-generated content, mediated by mobile devices. MSM is best known as mobile apps. It can be said that it is becoming the driving force behind the online world's development (Bolat et al., 2016). Based on the nature of the website or application, MSM can be divided into groups such as blogs (micro) such as Twitter, social networking sites like Facebook, wikis, and video/photo sharing services like YouTube, Flickr., suggested services like Yelp, and location sharing services like Foursquare (Humphreys, 2013). Because of the wide

variety of MSM forms, it offers tremendous opportunities for companies in different sectors. It can be effective for viral marketing campaigns, new product launches, marketing communications, loyalty programs, and market research (Yadava et al., 2015). Moreover, the effective use of MSM will help businesses improve mobile SEO, bringing a brand image to more people. In the coming years, the use of mobile devices will increase even more, with each owning a mobile device. Therefore, MSM will be a revolution in mobile marketing due to its inclusiveness and global reach (Yadava et al., 2015).

In short, mobile Internet marketing can be considered a form of Internet marketing applied to mobile devices (Huang, 2012). It inherits the weaknesses of Internet marketing but at the same time contributes to solving them (Merisavo et al., 2006). Specifically, thanks to clear regulations for the use of mobile media, it solves issues related to privacy and confidentiality (Haghirian & Inoue, 2007). In mobile Internet marketing, marketers control content and processes displayed on mobile websites or mobile applications more closely due to limitations on mobile devices' screens and operating systems. As a result, marketing messages become clear, concise, targeted, and highly effective for conveying to consumers.

4th Mobile Generation - Mobile television

The 4th mobile generation is mobile television. T.V. marketing has been around for a long time and is a unique form of traditional marketing. Marez et al. (2007) suggest that T.V. marketing often reaches engaged audiences, which can repeat the marketing message repeatedly to influence customers.

Mobile T.V., which refers to T.V. content that can be accessed on smartphones, tablets and receivers over the wireless network, is considered the ultimate convergence of the media industry (Shim et al., 2013). The mobile T.V. signal is transmitted over non-cable waves, and the mobile T.V. subscriber is required to download the T.V. app to their mobile device or install a dedicated T.V. decoder box connected to a display device (Nam et al., 2019). The rise of mobile T.V. directly competes with traditional T.V. in terms of time and number of views. It also accounts for a portion of television and advertising revenue (Truong, 2011). Leung and Chen (2017) affirmed that mobile T.V. services combine mobility and diverse T.V. viewing options with handheld devices' convenience. They have also predicted that mobile T.V. is the next phenomenon in the global telecommunications and media industry.

Mobile T.V. is primarily intended for individuals who watch T.V. programs through their mobile device while they are outside. In traditional T.V., viewers can only watch when they are at home, but with mobile T.V., they can watch anytime, anywhere (Lim et al., 2015). Typically, consumers tend mobile T.V. programs for short periods to fill vacancies or inactivity, perhaps taking breaks between work hours or travelling on trains (Almeida et al., 2013). However, with this usage habit, consumers are prone to an aversion to advertising during this time. Marketers must take care when conducting marketing activities on mobile T.V.. Showing ads in pre or post mobile T.V. shows may be more effective. Also, mobile T.V. broadcasts are based on time-spotting, which is the time spent between two programs. As usual, time is filled with a single colour display that shows a load counter, but a business can easily replace the screen with a static and discrete ad while viewers are waiting to load the next show.

Marketing on mobile T.V. will likely need to be consistent with broadcast content (program) but requires less personalization than other mobile marketing forms (Truong, 2011). Consumers may be annoyed by irrelevant text messages, but watching an ad broadcast before or after a T.V. show can be interesting even if the advertised product is not an entirely relevant consumer profile. To capture consumers' attention with exciting and original ads, advertisers must find the optimal level of consistency between broadcast content and ad content. Consumers can choose to receive separate messages from mobile T.V. services. Therefore, businesses can deploy interactive marketing campaigns or "pull" to attract consumers.

5th Mobile Generation - Proximity and Location-Based Mobile

The last generation of mobile focuses on proximity and location-based mobile. A new generation of interactive mobile technology has recently emerged, allowing us to link the natural world and digital experiences and communicate. These tools include:

- Near Field Communication (NFC),
- Response Codes (QR codes),
- Location-Based Services (geolocation).

All of these technologies are driving new channels of interaction between business and customers in a real-time, context-sensitive, location-sensitive environment (Paulose et al., 2019).

The first form is the NFC. NFC is a form of contactless communication between devices such as smartphones or tablets that allows users to wave their communication device via an

NFC-compatible device to send information without touching devices together or go through multiple steps to establish a connection (Trottmann, 2013). Short-range wireless RFID technology is ready to bring marketers and consumers together more than ever, as it opens the way for the instant exchange of all types of content and data (Gonzalez, 2012). Thanks to RFID technology, NFC features help marketers reach out to customers. NFC allows consumers to share a variety of content (e.g., contacts, web content or YouTube videos) with other consumers via NFC-enabled phones (Gonzalez, 2012), which is how consumers can share information about products, services or brands of businesses. Besides, purchase behaviour data can be collected through an NFC exchange, which will allow marketers to target and deliver the correct type of content to engage users (Rajput, 2019). Enterprises can easily apply NFC form to marketing campaigns because NFC tags can be placed in printed media, such as signs, magazines, product screens and packaging. Tags with optional readability and data purchase capabilities of anyone with an NFC-enabled smartphone (Al-Ofeishat & Al- Rababah, 2012).

The second form is QR codes. Among the various mobile-based communication technologies (e.g. SMS, MMS, banner ads), QR codes take up a larger space in mobile advertising (Narang et al., 2012). Quick response codes, commonly known as QR codes, are two-dimensional barcodes that contain data in the form of a black and white module accessed simply by a mobile device's camera or dedicated QR Reader application software (Kumar & Jhar, 2017). As data is stored horizontally and vertically as black and white square modules (Meydanoğlu et al., 2015), QR codes can hold many contents like URL, audio, video, etc. Therefore, marketers have also begun to use it more widely in their marketing activities (Demir et al., 2015). QR codes can provide information about products, promotions, discounts (Okazaki et al., 2013). From there, it can accelerate the buying process (Demir et al., 2015). Businesses can reach customers more easily because QR codes can be linked-to websites, entertainment videos or social networks. As a result, customers can like and comment on products on businesses' pages and even connect with different customers (Ryu & Murdock, 2013). QR codes also build a customer database for marketers through information about the number of scans per day, when the scans took place, the type of device used to scan the code, and even where each scan took place (Naran et al., 2012). All this information will show the business which products are popular, how the customers' needs are changing, from which they can make business decisions regarding the selling process (Larkin, 2010), offer offerings to each target audience

(Meydanoglu, 2013) and the development of new products (Okazaki et al., 2012). Furthermore, marketers use various ways to deliver QR codes to customers, such as print media (e.g. magazines, flyers, catalogues, newspapers) outdoor advertising, on product packages to provide more rapid product information (Meydanoğlu et al., 2018).

The final form refers to geolocation. Geolocation is the process of finding, identifying and providing the exact location of a device on the map thanks to its geographical coordinates and measurements. It is commonly used in many different applications to help locate users (Techopedia, 2016). In marketing, geolocation marketing uses a customer's physical location to inform the advertising strategy of the business, such as offering coupons and offers or simply advertising aimed at users of mobile devices in specific geographic areas (Palos-Sanchez et al., 2018). In addition, through analyzing customer location information collected via satellite or cell towers, businesses can gain insight into the location, spending habits, and customer behaviour. Finally, geolocation analyzes and detects possible areas for different sales points, increases sales or solves logistics problems between suppliers, distribution centers and retail stores (Palos-Sanchez et al., 2018). Geofencing and geotagging are two forms of geolocation marketing. These methods allow marketing firms to specifically promote to prospects within a specific geographical radius (Paulose et al., 2019). The main difference between geofencing and geotagging is the impact audience. Geofencing establishes boundaries that trigger certain ads to show to every user within its sphere of influence, while geotagging is more focused on a specific group of users near a geographical point of location (Basid et al., 2017). While geotagging may apply a more personalized message tailored to a user's potential needs, but geofencing can do a better job of bringing up opportunities for people moving through a target area that they may not see.

In general, every generation of mobile marketing brings businesses the right marketing tools. Mobile marketing is a multi-channel form (Huang & Symond, 2009). It reaches its target audience on smartphones, tablets or other mobile devices through website, email, SMS/MMS, social networks and apps (Walters, 2016).

1.4. Benefits of mobile marketing

Considering today, due to the shrinking economy and fierce competition, small businesses and marketers have to find ways to increase customer feedback by designing unique targeted marketing campaigns. Technological advances have brought a whole new era to the mobile world. Thus, modern mobile marketing can become an appropriate mean to help businesses gain advantages in marketing activities based on their unique features. The functions of mobile devices are outstanding compared to other forms of communication (Kurkovsky & Harihar, 2006). Therefore, mobile marketing is a suitable means to help businesses gain advantages in marketing activities while other marketing forms are not (Öztaş, 2015). Holland (2010) emphasized mobile devices' characteristics that make them unique and are the key to their mobile marketing value. The characters and benefits of mobile marketing are shown in table 1.8.

Table 1.8. Characters and benefits of mobile marketing

Characters	Benefit
Ubiquity	Marketers can reach customer at any place, at any time
Immediacy	Marketers can send message in response to events and opportunities in real time immediately
Personalization	Message can be targeted to individual customer
Hight interaction	Communication between businesses and customers is two-way, co-creation, co-experience

Source: Holland, 2010.

The first benefit is related to the ubiquity and immediacy of mobile marketing. In mobile marketing, ubiquity involves a flexible use of time and location (Okazaki et al., 2012). Flexibility in time and space allows businesses to send marketing messages more accessible than ever (Öztaş, 2015). As a result, customers can also search for information and conduct transactions anytime and whenever they need it. This advantage contributes to the support of the immediacy feature, which is reflected in responding to messages almost immediately from customers and businesses. Thereby, it helps marketers strengthen customer relationships (Holland, 2010). Berman and Zarb (2016) also emphasized that immediacy has two benefits: improving the speed from advertising planning to the consumer process (benefits for the business) and the ability to immediately cancel an offer (based on a very high response rate) (consumer benefit). He also affirmed that immediacy is directly related to mobile marketing, unlike other traditional marketing forms such as T.V. or print. Because conventional forms are usually one-way

communication from business to customers while digital marketing requires desktop or laptop computers that customers do not always carry, it can be said that mobile marketing helps marketers respond to their customers' needs quickly, regardless of time and place.

Besides that, marketers can send personalized messages to customers via their mobile phones. The term "personalization" has long been applied to marketing activities as online marketing has grown in popularity. It might be argued that mobile marketing differs from other marketing strategies because of its hyper-contextualized targeting (Tong et al., 2020). Marketers can design and deliver highly relevant and personalized mobile targeted content through mobile channels based on the customer's immediate context of location, time, companionship and dynamic competition (Ghose et al. 2019a). Therefore, it enhances the ability to respond to customers' messages (Shareef et al., 2017). Furthermore, based on information about purchase history, social media usage, demographic data and usage behaviours provided by the company's loyalty program or high profile by integrating Google filters such as contacts, preferences and search queries, personalization can be enhanced on mobile devices (Berman, 2016). The reason is that most mobile devices are not usually shared with others; each customer will use a separate device, unlike T.V.s, PCs or magazines. Besides, mobile technology development allows marketers to instantly access customer hyper-contextual information, such as GPS technology. Rich mobile data about behavioural contexts and environments will enable marketers to create more responsive and personalized advertising strategies (Tong et al., 2020). Personalized marketing campaigns can increase positive customer attitudes and enhance their ability to remember messages, brand and company names, and increase the acceptability of mobile marketing suggestions (Barutçu et al., 2007).

Mobile marketing is a highly interactive form of marketing (Gao et al., 2010). Mobile devices are almost always on and respond conveniently, allowing companies to communicate with their customers in a personalized and interactive style (Sánchez-Prieto et al., 2016). There are many definitions related to the concept of "interaction". Most definitions of interactivity involve the participant's control, meaning the degree to which participants in the communication process can exchange roles and have control over their mutual discourse (Bao et al., 2016; Zhou et al., 2016). From the beginning, mobile marketing activities are built to enhance the interaction between brands and consumers (Wang et al., 2017). It facilitates real-time communication through interactive functions such as reposting, following, and commenting on mobile devices'

social networking apps. Besides, the communication quality between users and businesses is also better with features such as location or email links or chat window interfaces on mobile websites (Zhou et al., 2016). Marketing activities commonly occur only in interaction with customers communication when it involves buying and selling activities. That is when the customer decides to purchase the product. In mobile marketing, engagement takes place right from the start of communication, intending to correct misinformation or deal with delays (Huang, 2012).

Besides the unique feature-based benefits that mobile marketing offers businesses and customers, there are other benefits. Mobile marketing budgets, in particular, are also one of the pluses. It is possible to see, over time, the efficiency of mobile devices, especially smartphones, becomes more active, improved and cost-effective compared with traditional media (Öztaş, 2015). Mobile phone features are tailored to interact with a critical role in mobile marketing. Budgets for marketing activities such as SMS or MMS are lower when compared to print or T.V. advertising (Friedrich et al., 2009). Furthermore, it is possible that due to the smaller screen size of mobile devices compared to desktop or laptop computers, the available area for ads is limited, and the required content is also tiny in size and much lower costs (Moats, 2020).

These days, marketing activities are focused on connecting with customers and ensuring brand communication rather than increasing sales. Therefore, businesses must establish contact with potential customers to convey new brands, enhanced product ranges, new goods and services. To be effective, interacting with the right target audience plays an important role. Mobile phones, which everyone can always carry with them, have become an important tool that provides the opportunity to establish more effective relationships with target customers without any restrictions on location or time on a 24/7 basis. Arguably, mobile phones have changed the communication process between businesses and their customers. At the same time, it also helps strategists build structured marketing campaigns with higher and more direct profits.

Businesses and marketers also face challenges when traditional marketing methods are becoming inefficient and unable to keep up with changing consumer habits (Kietzmann, 2011). Mass media is no longer suitable for savvy consumers when they are empowered to be supported by sophisticated and informative technology. Consequently, customers no longer want to receive one-way messages; instead, they want companies to listen, interact, respond, and provide valuable and relevant information. In this context, mobile marketing is a marketing method that helps businesses solve these problems.

1.5. Challenges and barriers of mobile marketing

Years ago, the challenges marketers faced with mobile marketing were often related to mobile technology and mobile devices. Small cell phone screens made it difficult to read and send messages (Barutçu, 2007) and increased mobile marketing's difficulty in e-commerce environments (Shankar & Hollinger, 2007). Battery life and connectivity issues were also considered. Dushinski (2012) highlighted issues such as signal strength, congestion, distance to cell transceiver location, interference and more that can affect data reception and communication quality for mobile device users. However, the strong growth of mobile technology and innovation in mobile devices have alleviated the above challenges for marketers (Sunny & Anael, 2016).

Nowadays marketers face challenges in transaction security, user information privacy, and the design of non-intrusive advertisements (Kumar & Mittal, 2020). These challenges involve inaccurate, inappropriate or offensive information that can undermine mobile marketing's effectiveness and credibility. Businesses need to avoid marketing campaigns becoming spam by ensuring that customers aren't irritated by unwanted messages on their mobile screens. Data collection is of great importance not only in mobile marketing but in the entire marketing world (Kumar & Mittal, 2020). However, marketers need to take care to ensure customer privacy (Gana & Koce, 2016). Data privacy, collected by different mobile apps and websites, is a common issue. Many people are concerned about the legal right of websites or mobile applications to record their data or transactions without explicit consent. They also worry about their data such as users' personal and financial information that could be at risk. Meanwhile, Vasileiadis (2014) confirmed that customers are anxious when their location and activities are tracked through mobile devices. Gazley et al. (2015) affirmed that security concerns and privacy discourage consumers from using mobile marketing. Therefore, what businesses need to do for mobile devices is to make customers' choices so that they are more comfortable sharing their data. At the same time, companies must ensure the safety and confidentiality of personal information collected from customers.

It is not easy to measure the effectiveness of mobile marketing. The biggest challenge lies in the lack of consolidation in reporting because conducting in-app advertising behaves differently from the web environment (Jones, 2019). On mobile devices, applications, and sites

track identity and measure performance on their terms, making it harder to resolve and allocate identities than desktop environments (eMarketer, 2018). Building a common set of standards to evaluate mobile marketing's effectiveness is essential because improved metrics and transparency will help marketers progress (eMarketer, 2018). However, this job still needs more time.

Furthermore, barriers to customers is a topic that many researchers learn and analyze because it is directly related to the consumer willingness to engage - the primary audience for mobile marketing. Barriers to customers indicated in many research are shown in table 1.9.

Table 1.9. Summary of barriers to mobile marketing

Authors	Barriers
Vrechoupoulos et al., 2003	Complicated use; Lack of security; Poor quality of service; High price for mobile access; Inconvenience of devices and Lack of personalization.
Heres et al., 2004	Technological barriers: Mention technical infrastructure; Available substitutions; Price; Design of technology; Usability; Availability of service; Visibility and testability. Individual barriers: Skills; Capabilities and Financial situation.
Bouwman et al., 2007	Physical accessibility has to do with the question whether or not a medium is physically accessible; Cognitive accessibility has to do with understanding how systems work (technically) and how to master new technologies; Affective accessibility: confidence, efficacy, and trust; Economic accessibility: benefits, costs; Social accessibility: cultural norms; Political accessibility: power and knowledge gaps.
Najafabadi, 2012	Phone Company: Related to the issue of mobile service provision such as poor connection, limited text messages, low data transmission speed, etc. Socio culture: Consumer resistance, technology gap; Policy: Concerning government policies, consumer support; Techniques: Small screen, difficult to operate on the keyboard, little memory, battery life, etc; Safety: Confidentiality of personal information, annoyance and reliability.
Lian & Yen, 2014; Moorthy et al., 2017	Usage barrier: the resistance towards a new invention due to the inconsistency with current routine and plan; Value barrier: a resistance towards the usage of products or services when they do not fulfil user's perception of performance-to-price value, in contrast with other substitutes; Tradition barrier: the obstacles originate when a technology innovation poses a change in customer's established tradition. Risk barrier: the uncertainties which are inherent and entail innovations; Image barrier: negative thoughts of individuals towards the technology tools and perceived complication of use; Perceived cost barrier: additional expenses that are incurred in moving from wired online payment services to mobile payment services

Source: own study.

Bouwman et al. (2007) conducted an assessment of the barriers and their importance in using mobile applications by customers. They proposed six barriers:

- Access objects;
- Cognitive accessibility;
- Accessibility related to attitudes and motivation;

- Economic accessibility;
- Social accessibility;
- Political accessibility.

Bouwman et al. (2007) emphasized that cognitive barriers most impact customers' intention to participate in the mobile environment. Research by Gupta and Arora (2017) argued that self-efficacy, consumer anxiety and relative advantage are the barriers that need to be noted. Consumers often feel a lack of confidence when using a mobile device to shop. Najafabadi (2012) emphasized technical issues and social notions as two main obstacles, in addition to policy and safety. Some other barriers are the traditional barrier, the image barrier (Lian & Yen, 2014; Moorthy et al., 2017) or the barrier of risk and value barrier (Lian, 2015). These barriers also have a significant impact on consumer attitudes toward mobile marketing. Although the studies suggest different barriers consumers encounter in adopting mobile services, in general, the authors suggested that barriers are focused on areas related to technology, security and consumer awareness. For technical matters, mobile device coverage, data transfer rate and capacity of the device are the features that matter related to the ability to receive marketing messages and allow access to more advanced services. Besides, the consumer's technology level is also essential, so most consumers of this form focus on young people. The question of affordability is also relevant, especially to consumers. It can be seen that the barrier preventing consumers from participating in mobile activities is also a challenge that businesses must overcome.

To sum up it should be emphasized that this chapter has introduced marketing theory in general and mobile marketing in particular. The connection between marketing and technology is the focus of discussion; this is reflected in the development of marketing communication channels, especially mobile marketing, associated with technical technology advancement. Besides, the definition of mobile marketing and its scope is analyzed and evaluated. Thereby, it shows that mobile marketing is a suitable form in the field of marketing today. The most prominent of the mobile devices is the smartphone. Due to minimal screen and keyboard shortcomings, mobile phones had not been rated as mass media. With the arrival of smartphones and tablets today, users can read newspapers, magazines and books, listen to the radio, buy music and video games, watch T.V. and even feature-length movies, regardless of where they are and at what time of day. This has led to mobile devices being viewed as a communication

channel that can effectively provide all the main content types of all previous mass media. In the next chapter, the contents related to mobile marketing activities' successful implementation will be discussed. Opinions of businesses and customers will be analyzed in detail. Besides, the concepts and elements, models related to mobile marketing activities will be identified and described.

CHAPTER II
TECHNOLOGY ACCEPTANCE THEORIES

This chapter reviewed at the historical development of technology acceptance models used to predict and understand people's acceptance behavior. Some popular models were be evaluated: Theory of Reasoned Action, Theory of Planned Behavior and the Technology Acceptance Model and The Unified Theory of Acceptance and Use of Technology. In addition, this chapter also explained why this study uses the TAM model. Finally, the chapter outlined the studies that apply TAM in the analysis of mobile marketing acceptance. From there, the research model was proposed.

2.1. Consumer acceptance issues

Customers are the powerful force of any industry; without them, businesses cannot bring in some profits or operations. Many sectors provide definitions for customer acceptance from different perspectives. Psychological science links acceptance with people in general and identifies the criteria needed to achieve acceptance, such as normative, cognitive and conative aspects (Danilo et al., 2016). For the field of psychological attitude, acceptance is the acceptor's essential affirmative attitude, depending on the context, situation, and reference object (Schenkl et al., 2014). In the business and economic sectors, these aspects are materialized into the customer's decision-making process (Gefen et al., 2003). In particular, the acceptor is the customer, the reference object is the product or service, and the context is the purchase situation. In addition, in this "decision process", aspects are meaningful in the decision to purchase at the point of sale and include factors that arise before the purchase, in the period of use or other life cycle stages. Therefore, marketers and businesses need to understand the reasons behind customer acceptance or rejection. This action will help marketing campaigns become more effective in research and development as well as contribute to the company's competitiveness and profitability.

Technology acceptance is how people adopt and apply certain technologies to their use. It is also associated with a demonstrable readiness within a group of users to use IT for tasks which

it is designed to support. Therefore, acceptance can be seen as a function of user participation in the use of technology. Acceptance can be further described as an essential determinant of the success or failure of any technology. Researchers have conceptualized acceptance as an outcome variable in a psychological process that users experience when making technology decisions. Oye et al. (2012) stated technology has very little value unless it is accepted and used. Thus, an understanding of technology adoption is essential. Researchers were particularly interested in identifying why people adopt IT to improve their remarkable processes to design, evaluate, and predict how users will react to new technology. They have studied a wide range of technology adoption issues ranging from individual user traits such as cognitive style to internal beliefs and their impact on usage behaviour (Suvarna & Godavari, 2012).

In marketing, regardless of the evolution of technology or the change in the content, a marketing campaign's critical success depends on consumers, and mobile marketing is no exception (Pescher et al., 2014). Kollmann (1998, cite in Sawng et al., 2011) emphasized that successful innovations in the market are determined not only by customer application but also by their continued use. Mobile marketing is an innovation. Therefore, the success of an innovative form of marketing, such as mobile marketing, can only be guaranteed if consumers use it continuously. This statement means that marketers must persuade consumers to accept and receive constantly advertising messages on their mobile phones. To achieve this goal, businesses and marketers need to understand the factors that impact consumer acceptance. Becker (2006) also confirmed that without a clear understanding of the factors driving consumers to adopt mobile marketing, marketers would be less likely to consistently generate positive returns from their programs. Perhaps, for this reason, research on customer acceptance for mobile marketing has received much attention from researchers (Leppäniemi et al., 2006). A significant number of publications have appeared on the adoption of various media in the mobile marketing sector, namely SMS (Dix et al., 2016; Bakr et al., 2019), mobile advertising (Salem & Althuwaini, 2018; Donga et al., 2018), mobile applications (Kim et al., 2015; Bahtar, 2018), QR codes (Kumar & Jhar, 2017; Demir et al., 2015), etc. In studies related to consumer adoption of mobile marketing, various models are used, specifically TAM, Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), the Unified Theory of Acceptance and Use of Technology (UTAUT). The main goal of these models is to investigate how to promote the use and explain what hinders the acceptance and use of technology.

Recognition of individual needs and acceptance is the beginning stage of any business and this understanding will be helpful in finding the path to growth in the future (Taherdoost, 2018). Therefore, factors driving the adoption or rejection of a technology by users are of great concern. Several models and frameworks have been developed to explain user adoption of new technologies and these introduce factors that can affect user adoption. Due to the purpose of the dissertation, some of the following models are considered:

- Theory of Reasoned Action;
- Theory of Planned Behaviour;
- The Unified Theory of Technology Adoption and Utilization;
- Technology acceptance model.

Theory of Reasoned Action (TRA)

The theory of rational action (Ajzen & Fishbein, 1980) is considered to be one of the earliest models developed to explain technology adoption. Ajzen and Fishbein (1980) assumed that individuals were rational and acted on available information to determine that the individual's behaviour was the primary determinant of their actions. The theory considered the intention to be the primary predictor of an individual's behaviour, and any external effects on the behaviour were through their purpose. According to TRA, there are two determining factors for human intention, including:

- Attitude: refers to positive or negative assessments of the behaviour performed by the individual (Ajzen, 1985);
- Subjective norm: refers to the degree to which a person believes that people important to him /her think he/she should or should not engage in behaviour in the matter (Ajzen, 1985).

It should be noted that the weights of these two determinants differ based on who performs the act and the intent to be investigated. Besides, Fishbein and Ajzen (1975) hypothesized about the close relationship between one's beliefs, attitudes and subjective norms. They argued that attitudes were only changed through changes in one's belief structure. Attitudes were formed throughout a person's prominent beliefs about a particular behaviour. Meanwhile, subjective norms were a function of confidence that a person perceived social pressure from his or her group to perform the behaviour in question**.**

Theory of Planned Behaviour (TPB)

Ajzen (1991) found that cognitive-behavioral management directly affects behavior and desire through an empirical study, and built a TPB model based on the TRA model. In addition to examining attitudes, norms, and intentions, the TPB also took into account Perceived Cognitive Behavior (PBC). TPB emphasized user attitudes towards technology, expressed users' characteristics through perceived cognitive behavior and pointed social influencing factors through subjectively variables. In TPB, attitudes and subjective norms were determined by underlying beliefs. Meanwhile, PBC was based on beliefs about access to the resources and opportunities needed to perform behavior successfully (Ajzen, 2002).

The Unified Theory of Technology Adoption and Utilization (UTAUT)

The UTAUT is a technology adoption model developed by Venkatesh et al. (2003). UTAUT aims to explain the user's intent to use the information system and the subsequent behavior of use. Theory is developed through reviewing and reinforcing the structure of eight models that previous research used to explain information system behavior. The theory is that there are four main constructs:

- Performance expectancy,
- Effort expectancy,
- Social influence,
- Facilitating conditions.

The first three factors are the ones that directly determine the intended use and the behavior of the user, and the fourth is the one that directly determines the user's behavior. The impact of the four main constructs on user intent and behavior is controlled by gender, age, experience, and voluntariness of use. Later, Venkatesh et al. (2003) incorporated three other constructs into UTAUT: hedonic motivation, values and habits, extending UTAUT to UTAUT2. Therefore, The UTAUT2 framework comprises four constructs from the UTAUT model and three new constructs as antecedents of behavioralintention and use behavior. Besides, individual differences—name, age, gender, and experience—are hypothesized to moderate theeffects of these constructs on behavioral intention and technology use. Venkatesh et al. ‘s data (2012) also showed that the impact of hedonic motivation on behavioral intention is moderated by age, gender, and experience, while the effect of price value on behavioral intention is moderated by

age and gender. Habit has both direct and mediated effects on technology use, and these effects are moderated by individual differences. Compared to UTAUT, the proposed extensions in UTAUT2 produced a significant improvement in the variance explained in behavioral intent and technology usage (Chang, 2012).

Technology Acceptance Model (TAM)

The TAM is the most widely used model by information technology researchers to understand the application of IT (Cheng, 2018). TAM is an extension of the TRA, proposed by Davis (1989), to predict an individual's application and use of information technology. According to Davis (1989), developer of TAM, the user's decision about adopting and using the new technology is influenced by several factors. Among them, two main beliefs define an individual's behavioural intentions to use technology which were shown in Figure 2.1, namely:

- Perceived usefulness (PU) is defined as "*the degree to which a person believes using a particular system will improve his job performance.*"
- Perceived ease of use (PEOU) is defined as "*the degree to which one believes that using a particular system will be effortless.*" (Davis, 1989).

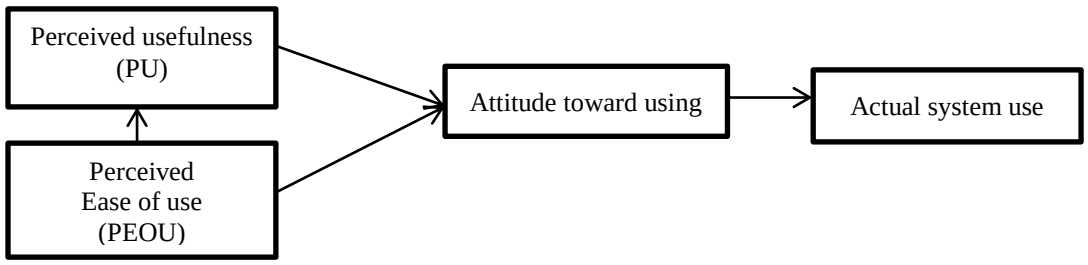

Figure 2.1. Original Technology acceptance model
Source: Davis, 1989.

Davis (1989) also introduced a third factor in the original model: the user's attitude toward technology. However, Davis et al. gradually found an attitude that did not entirely mediate between perceived usefulness and perceived ease of use. Therefore, Davis (1989) removed the attitude structure from the model. The TAM model went through many stages of development and was further expanded. Further TAM development has included the intention to act as a new variable directly influenced by the system's perceived usefulness. Davis (1989) suggested that there will be instances when the system is considered valuable. An individual can form solid behavioural intentions to use the system without creating any attitudes. This statement

led to a modified version of TAM. The original TAM incorporated other factors, called external variables, that might affect a person's confidence in the system. During later experimental stages, Davis refined his model to include additional variables and modified the relationships that were initially formed. External variables included system characteristics, user training, user engagement design and the nature of the implementation. Similarly, other researchers have adopted and suggested some supplements for TAM. The new factors that have a significant influence on the core variables of the model are continuously revealed. Consequently, TAM has evolved to be an essential paradigm for understanding human behaviour towards adopting or rejecting potential technology (Cheng, 2018).

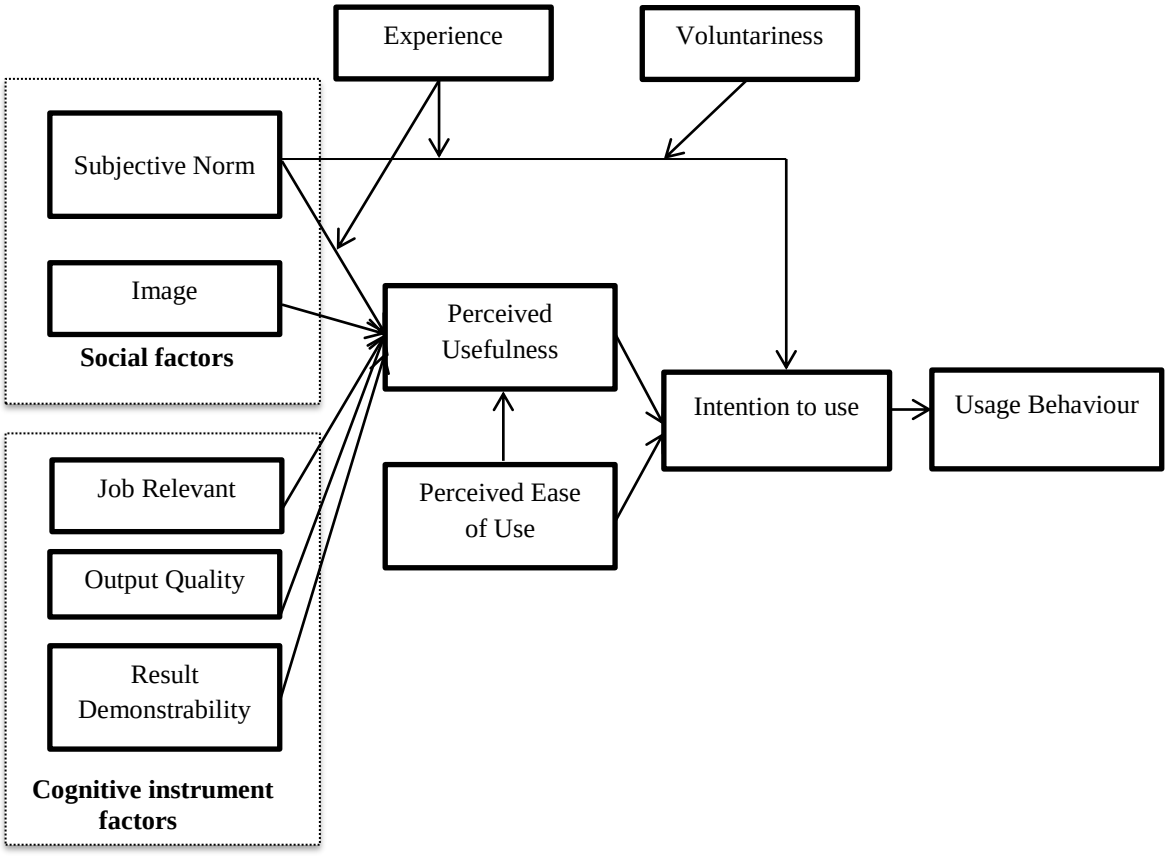

Figure 2.2. The TAM2 model
Source: Venkatesh & Davis, 2000.

There are two famous TAM extensions proposed by Venkatesh and Davis (2000) and Venkatesh and Bala (2008). The first extension of TAM was to identify PU determinants (i.e. TAM2). Venkatesh and Davis (2000) added five variables: subjective norm, image, job

relevance, output quality, and result demonstrability. They classified them into two groups: social factor (subjective norm, image) and cognitive instrument factors (job relevance, output quality, and result demonstrability) (see in Fig. 2.2). The authors examined the expansion model across four business organizations, including two voluntary and involuntary environments. The results showed that subjective norm, image, job relevance, and result demonstrability were the significant determinants of continued usefulness. It also indicated that subjective norms, PU, and PEOU were the direct determinants of intent.

Meanwhile, the second extension's primary focus is on proposing PEOU determinants (TAM3). The variables proposed by Venkatesh and Bala (2008) are individual differences, system characteristics, social influence, and facilitating conditions (see in Fig. 2.3). Venkatesh and Bala (2008) identified individual differences, including personality and demographics (e.g., another person's characteristics or status, gender and age) that can influence the individual's perception of usability and PEOU. System characteristics are outstanding features of a system that can help individuals develop favourable (or unfavourable) perceptions of the usefulness or ease of using a system. Social influences include different social processes and mechanisms that guide individuals to form belated awareness about IT's various aspects. Finally, facilitating conditions represent the organization's support for using IT. The basic TAM has been developed to TAM2 and TAM3, including more detailed measurements for the two primary constructs that are PU and PEOU. Each of these extensions is driven by the need to anticipate using new technologies and identify and stimulate the use of technology (Sargolzaei, 2017). Venkatesh and Bala (2008) argued that TAM3 was a more comprehensive portfolio network than TAM and TAM2. Besides, it is a model that integrates the determinants of PU and PEOU.

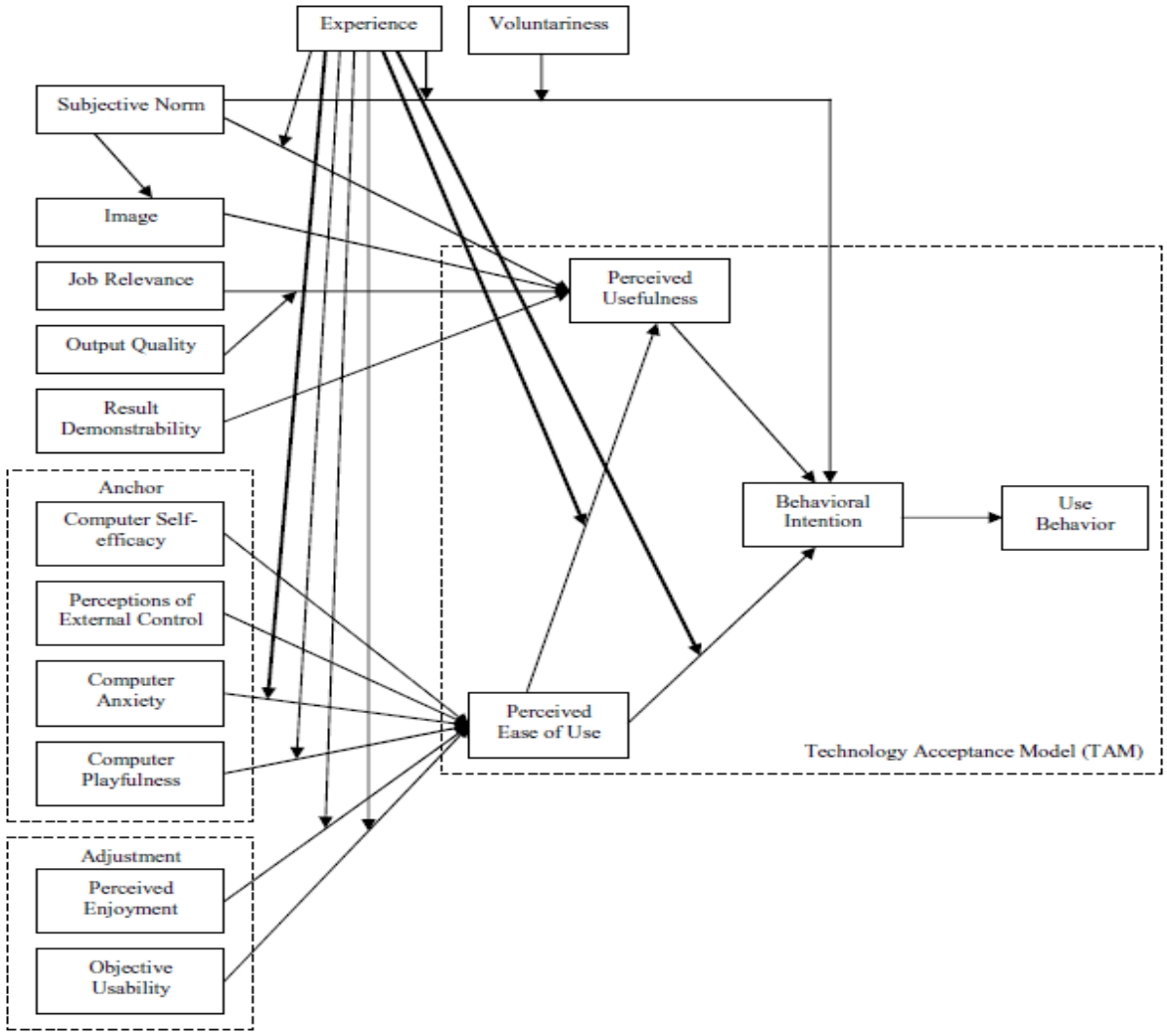

Figure 2.3. TAM3 model
Source: Venkatesh & Bala, 2008.

In addition, the development and expansion of various TAM versions are also built through the addition of other elements by numerous studies (Grani & Marangunić, 2019). These studies emphasized the broad applicability of the model and its adaptation to different technologies and contexts, such as Internet adoption (Lee et al., 2012), digital library (Khan & Qutab, 2016), e-mail (Serenko, 2008), e-learning (Cakır & Solak, 2015), e-commerce (Fayad & Paper, 2015), Internet banking (AlKailani, 2016), Wireless Internet (Lu et al., 2003), hedonistic information systems (van der Heijden, 2004) and other systems. Marangunić and Granić (2015) synthesized the studies using the TAM model from 1986 to 2013, and thereby, they proposed three main directions of TAM expansion when researching consumer adoption and attitudes

towards technology. Figure 2.4 introduces new factors for TAM that can be grouped, including additional belief factor or factors from related model.

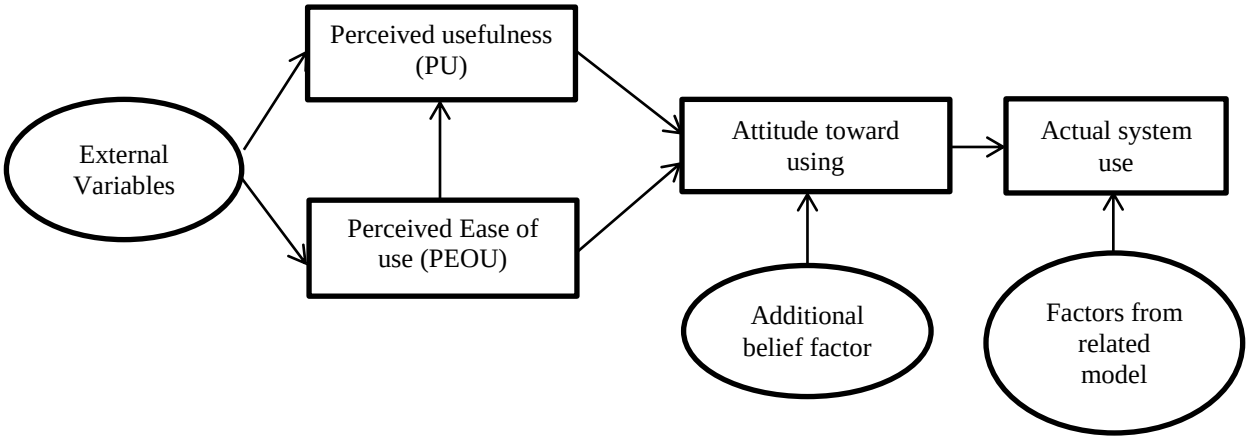

Figure 2.4. Extension of Technology acceptance model
Source: Marangunić & Granić, 2015.

Researchers' interest in the TAM model, since it first appeared more than a quarter-century ago, clearly shows its popularity in technology adoption research. Rooted in TRA and psychological TPB, TAM has evolved to become a critical paradigm in understanding the factors that predict human behaviour toward adopting or rejecting technology. The strength of the model is confirmed by many studies emphasizing its broad applicability to various technologies. Besides, information technology is constantly developing, and new systems are launched; it is essential to understand consumer behaviour and attitudes towards these systems.

2.2. Technology acceptance models – comparison of measurement constructs

Comparing general technology acceptance theories/models is essential to locate a well-improved theoretical model. This work provides an overall picture of the underlying concepts of the theory/model used across the technology-acceptance environment. The table 2.1 shows the measurement structures of each model.

Table 2.1. Measurement structures of each model

Theory/Model	Author	Constructs (Independent variables)	Dependent variables	Moderators
TRA	Ajzen, (1985)	1.Attitude toward behavior 2. Subjective norm	1.Behavioral intention 2. Behavior	1.Experience 2. Voluntariness
TPB	Ajzen (1991)	1. Attitude toward behavior 2. Subjective norm 3. Perceived behavioral control	1. Intention 2. Behavior	1. Experience 2. Voluntariness 3. Gender 4. Age
kTAM	Davis, (1985)	1.Perceived usefulness 2. Perceived ease of use	1. Attitude toward using 2. Actual system use	No moderators
TAM2	Davis et al. (2000)	Subjective Norm, Job Relevance, Output Quality, Result Demonstrability	1. Intent to use 2. Use behavior	1. Voluntariness 2. Experience
TAM3	Venkatesh et al. (2008)	More constructs added: Computer Self Efficacy, Computer Anxiety, Perception of External Control, Computer Playfulness, Perceived Enjoyment, Objective Usability.	1. Behavioral intention 2. Use Behavior	1. Voluntariness 2. Experience
UTAUT	Venkatesh et al. (2003)	1. Performance expectancy 2. Effort expectancy 3. Social influence 4.Facilitating conditions	1. Behavioral intention 2. Use Behavior	1. Gender 2. Age 3. Experience 4.Voluntarines
ÚTAUT2	Venkatesh et al. (2012)	1. Performance expectancy 2. Effort expectancy 3. Social influence 4.Facilitating conditions 5. Hedonic motivation 6. Price value, 7. Habit	1. Behavioral intention 2. Use Behavior	1. Gender 2. Age 3. Experience 4.Voluntarines

Source: Samaradiwakara & Gunawardena, 2014; Gromadka, 2020.

TRA, TPB, TAM, TAM2, and UTAUT are common technology acceptance theories/models used in differentiated settings, especially in the information systems (IS) literature (Al-Mamary et al., 2016). TRA has been adapted for use in many fields and is widely used in academia and business. This model has proven valid in the IS literature (Lai, 2017). The TPB attempted to address the existence of TRA (Samaradiwakara & Gunawardena, 2014). TPB and TRA have provided a clear theoretical basis for many studies in different contexts.

The TAM model identifies the general determinants of individual technology adoption. Therefore, it can be applied to explain or predict individual behaviours across a wide range of computing technologies by end-users and user groups. At the same time, TAM is compared favourably with TRA and TPB in terms of parsing capabilities (Lai & Zainal, 2015). TAM does not include Social Norms (SN) as a determinant of Behavioural Intention (BI), which is a critical determinant theorized by two models TRA and TPB. TAM is also explicitly designed to address

user acceptance factors of system technology (Chau & Hu, 2002). The comparisons confirm that TAM is reasonable and applicable in different research contexts through model expansion; however, it is easy to cause confusion and loss of information richness from studies (Samaradiwakara & Gunawardena, 2014).

UTAUT is built around eight different models, which include both TAM2 and TAM3. Variables such as PEOU, social influence, favourable conditions, attitudes, self-efficacy and anxiety, can underlie the use of new technology (vanRaaij & Schepers, 2008). Venkatesh et al. (2003) also added situational variables, gender, age, experience, and willingness to use the UTAUT model's events to better explain technology adoption and acceptance.

Therefore, it can be argued that UTAUT has played an essential role in technology acceptance research and provides a solid basis for explaining why users accept or reject technology at a particular angle (Samaradiwakara & Gunawardena, 2014). However, the UTAUT model uses moderators; studies that only focus on factors and consumer attention are not suitable to use this model (Lai, 2017).

2.3. Limitation for the use of technology acceptance models

It is crucial to locate a suitable theoretical model; however, each model has certain limitations. TRA model applied to an act of nature that has been previously thought of in one's consciousness (Yousafzai et al., 2010). It is assumed that when someone formed an intention to act, they would be free to perform without limitation. In reality, constraints such as capacity, time, environmental or organizational boundaries, and unconscious habits limit action freedom. Besides, Samaradiwakara and Gunawardena (2014) argued that attitudes and subjective norms posed a high risk of interference because attitudes could often be considered norms and vice versa. Meanwhile, Sheeran et al. (2013) commented that the TPB model was criticized for focusing only on rational reasoning, eliminating unconscious effects on behaviour, such as fear, threat, mood or experience. The model also did not consider environmental or economic factors that may influence a person's intention to perform a behaviour. Moreover, the predicted value of TPB was very limited (Sniehotta et al., 2014). The assessments clearly show that most of the observed change in behaviour is not measured by TPB measures. The theory has not yet resolved the issue regarding people forming an intention and then not implementing it. UTAUT model

also has certain disadvantages. Moghavvemi et al. (2013) suggest that the defect of this model is related to the gap between intention and behaviour. Behavioural intention is an individual's internal reflection of beliefs, and it does not represent external factors that may influence the performance of a behaviour. Thus, the role of extrinsic variables capable of hindering or facilitating the implementation of behaviour is not fully recognized by behavioural intention.

The explanatory power of the TAM model is low. Zahid et al. (2013) argued that TAM's measuring behaviour was complicated, as latent personality traits often motivated behaviour. With the same perspective, Patrick (2018) emphasized that the technology's potential users may not necessarily adapt and be willing to use the new technology based on their perception of IT's usefulness and ease of use. Therefore, to improve TAM's explanatory power, the researchers added external variables. The key relationships between the TAM structures are not consistent. For example, the relationship between perceived ease of use and behavioural intention has been statistically significant in several studies (e.g.). However, some studies suggest that ease of use is not substantial for behavioural intention (e.g., Chau & Hu, 2001; Park, 2009; Budi et al., 2011). Inconsistencies in perceived ease of use can be attributed to three variables: system complexity, user experience, or gender (Venkatesh et al., 2003). The TAM can identify the general determinants of individual technology adoption, so it can be applied to explain or predict individual behaviours across a wide variety of technologies (Samaradiwakara & Chandra, 2014). Moreover, TAM is easier to use than TPB and provides a quick and inexpensive way to gather general information about an individual's perceptions of technology.

In summary, it can be seen that each of the above models has advantages and disadvantages. TAM can be identified as the core of a variety of research models. Furthermore, various modifications of this model have been made to extend the applicability in more research situations. Legris et al. (2003) also confirmed that TAM was plausible and easy to apply on different research bases. The expansion of TAM predictability is accomplished by adding other relevant theories, namely regulatory factors (gender characteristics, culture and technology); or consequential measures (attitude, perceived use, and actual use). Meanwhile, the Author's research focuses on analyzing the acceptance of customers in Poland and Vietnam in the participation of cultural factors. Therefore, in this study, the Author decided to use the TAM model to analyze the acceptance of mobile marketing in Poland and Vietnam. The following

section focuses on an in-depth analysis of the TAM model and its application in mobile marketing studies.

2.4. Current directions of TAM modification

With the continuous development of technology and its integration into users' private and professional lives, the decision about whether to accept or reject technology is still an interesting topic for researchers. A considerable number of studies applying the TAM model, since its first appearance more than a quarter of a century ago, clearly show how widespread this model is in the field of technology adoption. Rooted in the psychological theory of rational action and the theory of planned behaviour, TAM has evolved to become a critical model in understanding the predictors of human behaviour for applying new technology. Therefore, the TAM model is used for research in many different fields, for example, Internet adoption (Lee et al., 2012), digital library (Khan & Qutab, 2016), e-mail (Serenko, 2008), e-learning (Cakır & Solak, 2015), e-commerce (Fayad & Paper, 2015), Internet banking (AlKailani, 2016), Wireless Internet (Lu et al., 2003), hedonistic information systems (van der Heijden, 2004) and other systems. The application in many different fields has led researchers to constantly expand the TAM model to fit the context, object and research purpose (Marangunić & Granić, 2013). The researchers did this by looking for additional determinants of technology adoption. However, this addition needs to unify the results to reach more consistent conclusions (Holden & Karsh, 2009). Table 2.2 provides TAM modification for specific research areas.

Table 2.2. TAM modifications

Research areas	Author	Modifications to the original model	Reason to modification
Health care	Ketikidis et al., 2012	Subjective and descriptive norms, relevance, and computer anxiety.	Evaluation of predictors of Health IT among medical nurses and doctors. The importance of social influence in technology adoption is noticed.
	Kim & Park, 2012	Health belief and concerns, subjective norm, perceived susceptibility, perceived seriousness, health information self-efficacy, health information technology reliability	To develop and verify the extended TAM) in healthcare by describing health consumers' intention to use health information technology.
	Kalayou et al., 2020	Staff IT experience, technical infrastructure.	To emphasize the impact of technical factors on intention to use the eHealth system.

E-learning	Salloum et al., 2019	Computer self-efficacy, system quality, information quality, content quality, accessibility, and computer playfulness.	An understanding of these factors is expected to help decision makers identify the strengths and weaknesses of their e-learning infrastructure and assist them in achieving a higher level of technology adoption.
	Ibrahim et al., 2017	Instructor characteristics, computer self-efficacy, course design.	To analyze the problems of low e-learning usage among students and even teaching staff.
	Lee, 2010	Users' satisfaction, confirmation, perceived enjoyment, concentration, subjective norm, perceived behavioural control.	To explain the acceptance-discontinuance anomaly phenomenon (users stop using e-learning after initial acceptance)
Internet banking	Marakarkandy et al., 2017	Subjective norm, image, banks initiative, Internet banking self-efficacy, Internet usage efficacy, trust, perceived risk, trialability and government support.	For a better understanding of the determinants that act as drivers for online banking adoption.
	Alwan & Al-Zu'bi, 2016	Website service quality, customer trust, customer feedback, perceived privacy and security.	To focus the investigation on the adoption of Internet banking by Jordanian commercial bank customers, the barriers that limit its growth and the solutions to some of the key obstacles that this innovative technology must face.
	Yaghoubi, 2010	Subjective norm Perceived behavior control	To better examine the impact of external factors on the intention to use the Internet based on the combined model of TAM-TPB.
E-commerce	Blagoeva & Mijoska, 2017	Trust, website usability and customer service.	In keeping with the context of the Republic of Macedonia keeping in mind the market size, underdeveloped delivery channels and inability to use online payments, customs barriers, etc.
	Fayad & Paper, 2015	Process satisfaction, outcome satisfaction, expectations, and E-commerce use.	To analyze the relationship between customer satisfaction, expectations and intention to use e-commerce.
	Ayo et al., 2011	Trust, perceived risk and task technology fit	To better understand the barriers and task-technology fit that impact consumers on e-commerce intentions.

Source: own study.

Holden and Karsh (2009) have shown that TAM predicts a significant portion of health IT use or adoption. Still, the theory could benefit from some additions and modifications to the TAM model. This tuning has resulted in improved research quality, standardization, and theoretically motivated additions to the model. More important is to tailor the specific TAM model to the healthcare context. Kim and Park (2012) expanded TAM into three domains: health zone, information zone, and technology zone to better assess consumer adoption of technology in healthcare. The results show that technical infrastructure has a significant influence on the intention to use eHealth. However, the effect of IT experiences on intention to use eHealth was insignificant. In some cases, additional variables were considered independent predictors of intent to use or actual use of health IT. In other instances, additional variables were used to

predict variables in the TAM model, such as PEOU and PU. The list of additional variables includes various characteristics of the IT system such as how well the system works (Barker et al., 2003; Liu & Ma 2006), job relevance (Liang et al., 2003), personal characteristics (Horan et al., 2004), organizational features such as IT readiness or technical support (Schaper & Pervan, 2007), psychological variables such as ownership (Paré et al., 2006) and trust (Tung et al., 2008). One study tested TAM2 (Ketikidis et al., 2012) or tested several hybrid models between UTAUT, TAM and TPB (Schaper & Pervan, 2007). Sometimes, researchers have compared TAM with another model, for example, TPB (Chau & Hu, 2001).

For e-learning, additional variables are directly related to the characteristics of the system, the design of the course and the characteristics of the users. Liu et al. (2010) extended TAM to investigate the willingness of high school students to use online learning communities. Four variables were proposed: online course design, user interface design, perceived interaction, and previous online learning experience. Cakır and Solak (2015) focused on how the personal characteristics of high school students in Turkey affect their choice of online English courses, including anxiety towards e-learning, satisfaction and self-efficacy. Meanwhile, Salloum et al. (2019) extended TAM with system-related variables such as computer self-efficacy, system quality, information quality, content quality, accessibility, and computer playfulness to assess user acceptance of online learning. The study by Ibrahim et al. (2017) investigated students' acceptance of online learning in universities using a modified TAM model consisting of six constructs. Specifically, they are instructor characteristics, computer effectiveness, course design, perceived usefulness, ease of use, and intent to use. In his research, Lee (2010) combined The Expectation Confirmation Model (ECM), TAM model and TPB model to offer a theoretical model to predict the intention to continue using e-learning.

The TAM model is also widely used in assessing consumer acceptance of Internet banking. Researchers have focused on variables related to privacy, security, reliability, and risks in this area. This is very understandable as it relates to the customer's personal information and bank account. Afshan et al. (2018) studied an online banking framework with an expanded TAM model and integrated additional risk factors in the Pakistani context. Marakarkandy et al. (2017) integrated perceived risk and trust into a TAM model to explore online banking adoption in India. The four demographic dimensions of education, income, gender, and age were grouped into two groups in the augmented TAM model to test the moderation effect. Yaghoubi (2010)

combined the TAM model and the TPB model to examine the factors affecting the adoption of online banking in Iran. In addition to security-related factors, the authors also expanded to add new variables such as banks initiative, government support, image, trialability (Marakarkandy et al., 2017), customer feedback (Alwan & Al-Zu'bi, 2016), website (Santouridis & Kyritsi, 2014; Kesharwani & Bisht, 2012).

Trust plays an essential role in various business relationships. In the context of online shopping, i.e., in a buyer-seller relationship, trust is a critical factor as it reduces the element of risk (Walugembe et al., 2015). Pavlou (2003) introduced the trust variable and the risk perception variable to TAM and accomplished an empirical study using the questionnaire and case tests. According to Pavlou (2003), a lack of trust in online businesses was one of the main reasons why customers did not engage in commercial transactions on the web. In agreement with Pavlov (2003), Ayo et al. (2011) extended TAM with trust and perceived risk. In addition, the authors also added task technology fit to the model. Blagoeva and Marina (2017) proposed a research framework based on TAM, extended with related constructs necessary for trust - online shopping, website usability and customer service. The authors have also hypothesized that website usability and customer service directly positively affect perceived usefulness. Chen and Tan (2004) built a new model based on TAM and the technological spillover of innovation theory. They introduced product offers, information richness, storefront usability, perceived service quality, and trust to the new model. They tested the model with a web-based survey and identified all the variables that influence virtual store adoption. Fayad and Paper (2015) have focused on the impact of consumer satisfaction on e-commerce adoption. The initial TAM was extended by adding four predictor variables. The four predictor variables are process satisfaction, outcome satisfaction, expectations, and e-commerce usage.

The TAM model is widely accepted and is applicable in determining consumer readiness to apply Information and Communication Technology (ICT) (Marangunić & Granić, 2013). The theory proposes that PEOU and PU are determinants of an individual's attitude, while attitude is a determinant of Behavioral Intent (BI). Many frameworks and models have been designed and created to describe user acceptance of modern innovations. It is essential to understand how the TAM model was used and its modifications because user acceptance is critical to the pre-improvement and successful implementation of any new technology. These extended TAM models introduced contributing factors towards user adoption in different contexts and new

technologies. In it, the modification of the model is mainly the addition or removal of variables and, in some cases, the addition of moderators. In the future, TAM will continue to be accepted and modified depending on the successful adoption of any new technology.

2.5. Review of TAM in mobile marketing acceptance research

In analytical models of consumer technology acceptance, TAM is the frequently used or extensively used model in m-commerce or m-shopping, compared favourably with TRA and TPB (San-Martín et al., 2013; Lu, 2014). When it was desirable to explain user acceptance intent further, it allowed other factors to be incorporated easily into its basic model (Saprikis et al., 2018). Since the original proposal, the TAM has been widely used, refined, and considered the leading model in interpreting and predicting system usage. To organize and categorize research on the TAM model in consumer adoption of mobile marketing, the author reviewed the articles in crucial mobile marketing journals based on related keywords. These studies provided a results framework that summarized the TAM model research process and its extension in studies related to customer adoption for mobile marketing.

TAM in mobile marketing acceptance research

Bakar and Bidin (2013) identified a relationship between technology adoption and mobile advertising purchase intent of young Twitter users in Malaysia. The author has applied TAM without any extensions to verify its suitability for the mobile marketing field. This study intended to investigate the relationship between technology adoption (usage and usefulness) of Malaysian mobile advertising and purchase intent. This study's findings showed that PEOU and PU in mobile advertising significantly impact adoption by young people aged 15 to 29 in Malaysia. Muk and Chung (2015) examined the factors influencing consumer acceptance of SMS advertising. The authors have included attitudes into the model, although Davis (1989); Venkatesh and Bala (2008) recommend elimination. Data were collected in the United States and South Korea to test conceptual models and cross-cultural validity scales. The results showed that these scales are valid in the national context. The usefulness structure was fundamental to establish favourable consumer attitudes towards SMS ad adoption in both countries. Young Korean consumers' attitudes towards SMS advertising were more optimistic than their US

counterparts. This study found that consumer adoption of SMS ads differed in two culturally different countries.

Although the basic TAM model could still be applied to analyze consumer adoption and application to mobile marketing, the above authors also stated that using the original TAM model without the extension cannot fully reflect and explain consumer acceptance. Therefore, it is necessary to identify the external variables relevant to the mobile marketing context to improve the TAM model's explanatory power (Muk & Chung, 2015).

TAM with extending elements in mobile marketing acceptance research

As mentioned in the previous section, the TAM model's expansion is done in two directions: developing two main elements of the model or adding other factors to the primary TAM model. Researchers add different factors in the mobile marketing landscape to analyze consumer acceptance, depending on the research objective. The TAM model with extending elements is shown in Figure 2.5. The TAM2 & 3 were introduced in previous part. This part indicated how TAM2 & 3 are applied in mobile marketing.

TAM2 is an extended TAM model to analyze the PU factor with five variables deeply. These five factors are divided into two groups of social factors and cognitive instruments. These variables are introduced in detail in Figure 2.1. However, depending on the study's purpose, the authors can analyze all five or selected variables. Soroa-Koury and Yang (2010) conducted an assessment of consumer acceptance and feedback on mobile marketing from a social norms theoretical point of view. This study focused only on understanding social norms' impact on perceived usefulness, namely, consumer misconceptions towards mobile marketing. Moreover, Soroa-Koury and Yang (2010) stated that subjective norm can include positive and negative perceptions of mobile marketing. Therefore, the subjective norm can increase or decrease the PU of mobile marketing. Misconceptions need to be noted because they affect this form's image and consumer acceptance barriers. However, not all illusions can predict PU. Lack of understanding and an erroneous consensus was essential predictors in Soroa-Koury and Yang (2010) study.

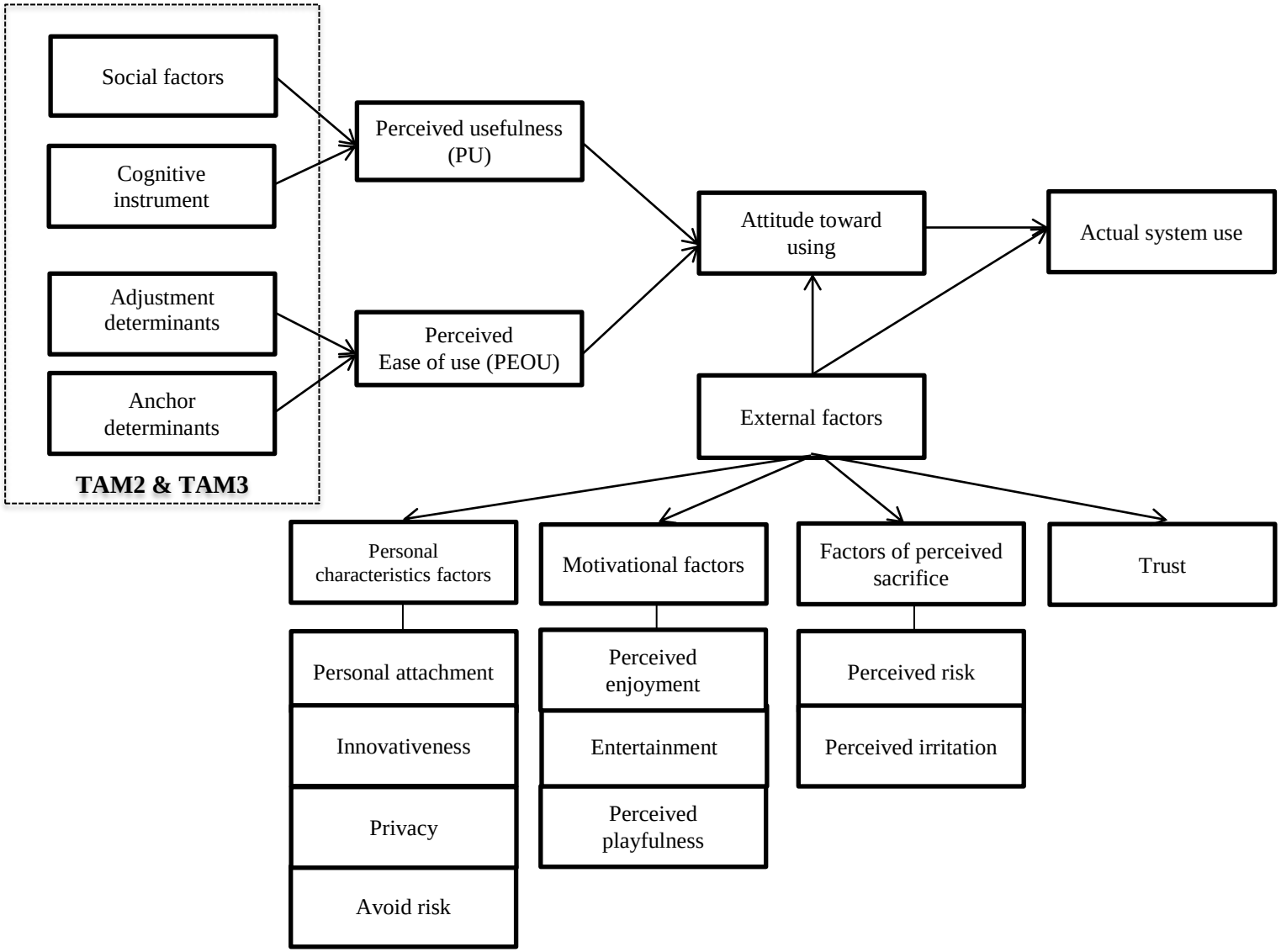

Figure 2.5. Extensions of the TAM in mobile marketing acceptance
Source: own study.

Ismail and Razak (2011) studied the factors influencing young consumer acceptance of mobile marketing in Malaysia. The authors used the TAM2 model with extensive variables to analyze the PU factor, including subjective norm and perceived image. The result showed that the subjective norm has the most significant impact. They stated that young consumers, friends, and family significantly impact their subjective standards in mobile marketing adoption. More specifically, they are more likely to follow their friends' opinions on mobile marketing than their families. The perceived image also was the factor that can stimulate consumers' attitudes towards mobile marketing use (Ismail & Razak, 2011). Perceived image refers to how users feel adopting and using innovation to enhance their social system's image or position. It could not be denied essential motivations for almost every individual to accept an innovation to attain social status; therefore, image perceptions and attitudes towards technology use have a positive relationship (Nor & Pearson, 2008). Mobile marketing services provide mobile users with additional services, in addition to voice and SMS messaging. Individual consumers applying mobile marketing services may feel trendy or tech-savvy and socially up to date. Thereby, the user's attitude has improved.

Jaradat and Al-Mashaqba (2014) used the TAM3 model to analyze the user's acceptance and intention to use the M-Payment service. The variables in the TAM3 model are introduced in detail in Figure 2.2. Relationships between factors are also clarified in the study. The results showed that output and perceived image were the two factors affecting PU. In contrast, subjective norm and job relevance do not affect PU. For PEOU, self-efficacy and the perceptions of external control have a significant direct effect. From the results gathered, Jaradat and Al-Mashaqba (2014) stated that interviewees thought they had control over their abilities and the availability of resources to using M-Payment services. Roy (2017) examined (a) the adoption behaviour of mobile applications using the extended TAM framework, specifically TAM3 and (b) whether the adoption leads to the user behaviour and the intent to convert. The informativeness and entertainment of an app affected a smartphone user's attitude toward using mobile apps. Unlike Jaradat and Al-Mashaqba (2014), Roy (2017) discovered the effectiveness of smartphones, external control of smartphone perception and anxiety affected the ease of use. Thereby, the author also identified the role of consumers' cognitive and conative components in the model of technology adoption.

In addition to TAM2 and TAM3 models, the studies also add other factors to TAM's primary model according to each research context on mobile marketing. These factors can be categorized into four mains groups: (1) personal characteristics, (2) motivational factors, (3) perceived sacrifices and (4) trust.

Personal characteristics

The first group that many studies have used in the extended TAM model is personal characteristics factors. Personal characteristics are likely to be important to the successful use of technologies, as we observe that individuals have different needs (Brown et al., 2010). This difference can affect consumer acceptance and attitudes. This group includes factors such as:

- Personal attachment;
- Innovativeness;
- Privacy;
- Avoidance risk.

Personal attachment refers to the extent to which consumers seek to personalize their mobile phone with unique content, wallpapers and ringtones as ways to present their phones as extensions of themselves. It also refers to the extent to which cell phones represent an integral part of an individual's life so that they not only use them 24/7 but also consider themselves addicted (Saeed & Bekhet, 2018). Usually, personal attachment has a positive effect on mobile marketing adoption and attitudes. Gao et al. (2013) investigated the mobile marketing adoption of consumers. In their study, the authors used the TAM model's PU and PEOU elements combined with three personal-level traits, including personal attachment, innovation, and risk avoidance. The results showed that personal attachment and innovation influenced consumer attitudes toward mobile marketing. Saeed and Bekhet (2018) explained more about the impact of personal attachment on young people's mobile marketing attitudes. They have found that young Malaysian customers have an interest in expressing themselves through their mobile phones. Therefore, mobile phones are both tools for communication and expressing young people's individuality and identity, particularly in Malaysia.

Innovativeness is also a factor related to personal characteristics that researchers apply to the TAM model (Gao et al., 2013; Yoon et al., 2015; Alalwan et al., 2018). Innovativeness can be categorized according to personality factors that shape the extent to which anyone can accept

and adopt new ideas, products and systems (Alalwan et al., 2018). People are more willing to innovate if they are more likely to accept and use new products and systems than others in the same social system (Rogers et al., 2005). Yoon et al. (2015) explored how the acceptance and intention to use messages on mobile devices are affected by technical and personal characteristics and social factors. They claimed that personal innovation has a significant impact on intent to use text messages mobile devices. Together with Yoon et al. (2015), Alalwan et al. (2018) concluded that innovativeness was the most crucial factor predicting customers' intention to use mobile Internet services in Saudi Arabia. Such an outcome could be due to the current mobile and IS technology revolution. Customers have more opportunities to try a new and innovative system, such as mobile Internet service or mobile applications. Alalwan et al. (2018) emphasized that younger, higher-educated and high-income research subjects tend to be willing to accept and apply services on mobile devices. Hur et al. (2017) divided personal innovation into two technological and fashion innovativeness to study mobile applications' acceptance in the fashion field by two age groups (young and mature) in Korea. The results indicated that consumers with a high technology innovation level tend to use an innovative application service if the application is easy to use, useful, and enjoyable. Besides, research also showed that as technological innovation increases, PU and PEOU also increase for younger generation consumers. Moreover, technology innovation also has an impact on consumer acceptance. However, one surprise of the study is that fashion innovation doesn't have much of an effect on consumer adoption and intentions in both age groups. Therefore, in this case, Korean adoption of mobile applications was mainly influenced by factors related to technology's impact.

Aside from factors that positively impact user acceptance, avoiding risks, and privacy concern have adverse effects. Gao et al., 2013 emphasized that companies' desire to avoid risks associated with their mobile marketing efforts will significantly affect attitudes toward mobile advertising and promotion (Gao et al., 2013). Saeed and Bekhet (2018) stated that young customers in Malaysia were sensitive to their privacy; this concern significantly affected their attitudes and intentions toward mobile marketing. In fact, with increasing concern about protecting user privacy, consumers are increasingly afraid of exposure to other forms of mobile marketing because mobile phones are highly personalized. Mobile marketing can become too invasive in intimate personal spaces (Sørensen, 2007).

Motivational factors

The second group is related to motivation. This group includes perceived enjoyment, perceived playfulness and entertainment. Perceived Enjoyment (PE) can be defined as the degree to which any use of a product or service is deemed pleasant in its own right without taking into account any potential performance consequences (Kim et al., 2008). PE has a significant impact on consumer acceptance of mobile marketing (Afzal et al., 2015; Pan et al., 2015). Afzal et al. (2015) showed that PE was the determining factor that enables consumers to accept SMS. Meanwhile, Pan et al. (2015) used the TAM model, a framework that has been expanded with Social Influence (SI), Personal Innovation in Information Technology (PIIT) and PE to explore the factors influencing consumers' decisions to accept m-marketing. In this study, PE can be defined as the degree to which the use of certain technologies inactivity is considered attractive. Young consumers saw mobile devices as their way of transmitting personal identity. Pan et al. (2015) suggested that mobile marketing offering pleasurable advertisements to the outside and satisfies inner delight will attract higher consumer attention.

Alalwan et al. (2018) also emphasized that PE proved to be the strongest predictor of customer intentions on using mobile Internet services in Saudi Arabia. To explain this, the authors have identified the mobile Internet's nature as a more modern and unique platform for achieving a wide range of services. Thereby it maximized the sense of joy and enjoyment of customers when they used those systems. PE also found to have a significant impact on Saudi consumer perception of PU. So, as long as customers feel that their mobile Internet use is enjoyable, they will actively perceive mobile Internet as beneficial. Chang (2018) examined travel mobile marketing applications in six main aspects: transportation, accommodation, community and other activities, combined with the Handicap Model. This study has shown several differences compared to previous studies. In this case, PE had not contributed significantly to consumer reviews in the tourism sector.

Another factor was analyzed - entertainment. Parreno et al. (2013) combined two models TAM and TRA, to investigate adolescent mobile ad acceptance factors. They analyzed three factors from two models, namely irritation, PU and entertainment. The findings suggested that all three elements were the primary driver of mobile advertising attitudes and that PU could reduce consumer perceived discomfort. Consumer perceived entertainment was a direct contributor to mobile ad attitudes and acceptance. Along with the above point of view, Abbasi et al. (2020) also

emphasized in their research that factors such as entertainment become more important and relevant in high-context cultural countries, particularly here in Malaysia. Because people are more likely to use mobile advertising to satisfy their enjoyment and emotional needs, they look forward to an entertaining and inspirational advertising program.

Finally, the last factor was playfulness. Hur et al. (2017) put the perceived playfulness factor into their research in adult and young group respondents. The results indicated that people who found the application easy to use also tend to see the application as useful and achieve a high level of playfulness in using the application. As a result, their intention to use the application increased. Among the younger generation of consumers, the impact of usefulness on preferences is more significant than playfulness. This result implied that younger generation consumers tended to focus on practical value, such as the usefulness of the application, because they were accustomed to using an innovative service, which led to their insensitivity to those stimuli. However, for mature consumers, technological innovativeness has an indirect effect on PU and perceived playfulness through PEOU. Adults were more likely to adopt a mobile app for entertainment value than millennials. This study's findings had significant implications for understanding how different generations have embraced new technology services and why these differences exist. In addition to the age comparison, Ha and Im (2014) made a gender comparison. Authors (2014) pointed out that playfulness and PU seem to be more important to women than men, while a sense of PEOU is a more vital determinant for men. The authors also agreed that as mobile coupon services' perceived playfulness increased, attitudes toward mobile coupon became more positive. Making mobile coupon services enjoyable will be crucial to advancing a positive attitude towards using mobile coupon services. Thereby, marketers can improve the acceptability of services in the future.

Perceived sacrifices

The third group of additional factors in TAM model comprises perceived sacrifices factors. Perceived sacrifices group includes perceived risks, perceived irritation and so on. Im and Ha (2013) explored the activations and discouraged permission-based marketing in mobile coupons. The perceived inhibitory and risk factor was necessary premises of attitudes and intentions. Perceived risk consideration was essential in mobile coupon adoption as the direct impact of perceived risk on disclosing personal information can lead to mobile device rejection.

When comparing experienced and inexperienced users, perceived risk affected consumers more strongly when they don't have experience with mobile coupons than when they have. Natarajan et al. (2107) identified security concerns and performance risks as important factors preventing consumers from using mobile devices' shopping apps. Research intimated that customers are more likely to use mobile commerce if they know that it is adequately protected. The authors proposed that marketers must demonstrate the risk-free environment of mobile shopping apps to reach target customers. The results also found that perceived risk has a negative effect on user satisfaction in using mobile shopping apps, making it the main factor to consider during the design phase for newcomers to the market. Unlike the two studies above, Muñoz-Leiva et al. (2017) confirmed that the impact of perceived risks on consumer acceptance of banking mobile application and intentions was negligible. The authors also said that good experience in this app had improved purposes of use. Therefore, users consider mobile applications in the banking sector to be a low-risk technology, and perceived risk is not decisive in applying applications. However, for mobile apps in the shopping sector, perceived risks play an important role in consumer acceptance.

Lin et al. (2017) evaluated the impact of irritation in mobile advertising. The results showed that irritation, credibility and PU were the most important and influencing factors. However, contrary to the two elements of credibility and PU that positively impact consumers in accepting the ads on mobile devices, irritation negatively affects. Irritation is a hindrance to mobile advertising. Huynh and Nguyen (2016), Abbasi et al. (2020) agreed with the above point. The explanation was that customers feel bothered with information delivered at an inappropriate time via SMS, and the content was counterproductive to advertising.

Furthermore, when mobile phones are considered very private, users will have a negative attitude if they believe that mobile advertising is offensive (Abbasi et al., 2020). According to the survey results, 62% of respondents in this study reported being annoyed by mobile marketing because it was delivered to customers at noon or rest (Huynh & Nguyen, 2016). Therefore, Huynh and Nguyen (2016) suggested that business owners avoid annoying by choosing the right time to send advertising information via SMS. Also, Marti-Parreño et al. (2013) investigated the relationship between irritation and other research factors on acceptability and mobile advertising attitudes. PU may reduce irritation, while perceived entertainment does not reduce cognitive stimulation as expected by the author. The author argued that attempts at persuasion are not

considered intrusive if the message is relevant to the target group and provides value to the recipient. Perceived entertainment, by contrast, cannot alleviate the intrusion of advertising. That means advertisers' efforts may be enough to trigger a positive attitude but not enough to break the more substantial barrier of intrusive awareness built-in mind consumers over the years exposed to advertising on traditional media.

Trust

The fourth group is related to trust, which is an essential factor in relationship exchange, where one party relies on the other to deliver on its promises (Gana & Koce, 2016). Consumers are hesitant to shop unless they trust the seller or the company's brand. Especially in the context of mobile marketing, trust makes even more sense where the parties involved may not necessarily meet face-to-face to exchange transactions. Jayawardhena et al. (2009) emphasized that trust is a prerequisite for the success of mobile marketing. Therefore, many researchers have integrated the trust factor into the TAM extension model to assess consumer acceptance. Who (2011) examined the impact of trust on mobile marketing adoption based on the technology adoption model. The results showed that the newly added element of TAM contributed significantly to the success factors of mobile marketing. Wong and Zhou (2015) combined the TAM model and Commitment-Trust Theory to understand consumer attitudes towards mobile marketing. The results showed that the relationship between trust and attitude commitment, PU, PEOU, and purchase intent are determined by time and place scenarios. Meanwhile, Amin et al. (2014) developed and empirically examined consumer satisfaction when using mobile services based on TAM and trust models. This study contributed new insights into the mobile marketing literature by examining the impact of PU, PEOU and trust on mobile user satisfaction. From there, the authors assessed the effect of satisfaction on consumer attitudes and intentions.

Various authors have suggested that trust and other factors such as PU, PEOU, perceived risk, etc., influence each other and affect the acceptance or adoption of mobile marketing. Gao and Waechter (2015) have highlighted the positive impact of trust on perceived convenience and benefits and how these three influencing factors predict intention to use mobile payment services. Chen and Li (2016) found that while trust harms perceived risk, it positively affects perceived usefulness. In addition, Yan and Yang (2015) confirmed in their studies that user trust is significantly influenced by PEOU, popularity, structural assurance, and PU. Therefore, this

impact affected the user's willingness to use. Jurbert and Van Belle (2013) stated that the rapid development of mobile technology had boosted the potential of mobile marketing. Still, the lack of consumer trust is a factor affecting acceptance. Consumer trust becomes a must for mobile marketing, especially when consumers have little information about the company and its services.

To sum up, it should be noticed that theoretically, the TAM model is well established to develop and test a model of customer behavioural intentions using mobile marketing services. Saeed and Bekhet (2018) emphasized the TAM model's validity in predicting young customers' attitudes and preferences toward mobile marketing. In general, when studying consumer acceptance and attitudes towards mobile marketing, the TAM model elements still have the most significant impact on consumers, among which PU is considered the main factor. When conducting an in-depth analysis of the PU factor with the effects of five variables, the results show that subjective norm has important decisions for PU (Rouibah et al., 2011; Soroa-Koury & Yang, 2016). Meanwhile, its efficiency significantly affects PEOU. Therefore, enhanced efficiency can increase PEOU when customers are more comfortable interacting with the mobile marketing channel (Faqih & Jaradat, 2015; Roy, 2017). Additionally, there is a considerable positive correlation between PEOU and PU, suggesting that customers who realize easy-to-use mobile channel interactions also feel more efficient and valuable (Roy, 2017; Faqih & Jaradat, 2015; Li et al., 2014; Liébana-Cabanillas et al., 2014). On the other hand, for the groups of external factors associated with the TAM model, studies show that the individual factors and motivational factors positively affect consumer acceptance and mobile marketing attitudes. Meanwhile, the group of perceived sacrifices has a negative impact.

Based on the studies discussed in the previous section, the variables are extended in the TAM model, including personal characteristics factors, motivational factors, factors of perceived sacrifice and trust. Nevertheless, within the scope of this dissertation, it is necessary to select the appropriate elements. Assessing the impact of these factors will provide a basis for recommending suitable mobile marketing activities for Poland and Vietnam.

First, the group of motivational factors has an essential role in determining user adoption in the mobile marketing context (e.g. Afzal et al., 2015; Pan et al., 2015; Alalwan et al., 2018). The studies that the author synthesized above all focused on expanding TAM with entertainment-related motivational variables such as PE, perceived playfulness and

entertainment. It should be noted that people use mobile marketing for several reasons, such as informative and entertaining ones (Whiting & Williams, 2013). These specific motives are linked to a higher degree with the general behavioural goals of action or inaction (Noguti & Waller, 2020). Furthermore, these motives are related to the value of the marketing message. Message value is defined as a subjective assessment of the relative value or utility of marketing to consumers, including informational value and entertainment value (Ducoffe, 1995, p. 2). However, authors rarely associate informational value with the TAM model when assessing adoption for mobile marketing (e.g. Haghirian et al., 2008; Chowdhury et al., 2010; Aydin & Karamehmet, 2017; Sharif, 2017). Therefore, to increase the novelty of the research, information value is added to the TAM model to test its impact on user acceptance (see in Fig 2.6).

Second, the Author wants to consider issues related to trust. It is noticeable that trust has a significant impact on user acceptance and factors in the TAM model (e.g. Jayawardhena et al., 2009; Who, 2011; Gao & Waechter, 2015). Trust can refer to personal trust and business/brand trust. The actions of mobile marketing firms easily influenced consumers (Persaud & Azhar, 2012). For example, smartphone users are also worried about mobile marketers' misuse of their data (Watson et al., 2013). The banking institution that can secure and protect customers' data is highly trusted by customers when using their mobile applications (Laksamana et al., 2012). Therefore, brand/business trust becomes vital for decision making (Muk & Chung, 2015). This suggests that brand trust may be necessary for users to feel comfortable with mobile marketing. Therefore, it is appropriate to extend the TAM model with brand trust.

Third, user characteristics have been shown to influence their acceptance of mobile marketing. This group may include personal attachment, innovativeness, privacy etc. Among them, the Author noted privacy. The growth of mobile marketing will depend on adoption and usability issues to ensure permission-based marketing. Mobile devices are highly personal devices. Therefore, protecting users' privacy is getting more and more attention and can affect their acceptance of mobile marketing (Keith et al., 2013). Kumar and Mittal (2020) also emphasized that privacy is a challenge for businesses when conducting marketing activities on mobile phones. Therefore, this study wishes to determine the impact of privacy on the adoption of mobile marketing.

Based on the points discussed above, this study will identify external factors to add to the TAM model, including information value, brand trust and privacy, which are shown in table 2.3.

Table 2.3. The developed model

Factors	Group	Type
PU	TAM	Independent
PEOU	TAM	Independent
Information value	Motivation	Independent
Brand trust	Trust	Independent
Privacy	Personal characteristics	Independent
Mobile marketing acceptance	TAM	Dependent

Source: own study.

The author selected TAM (Davis, 1989) as the core of this study theoretical model. The focus of the thesis is on the analysis of TAM-based extrinsic variables that originate from the research environment and are related to the system in question (mobile marketing) in an empirical study. The relationship and impact of factors in TAM's extension model on mobile marketing adoption is shown in Figure 2.6.

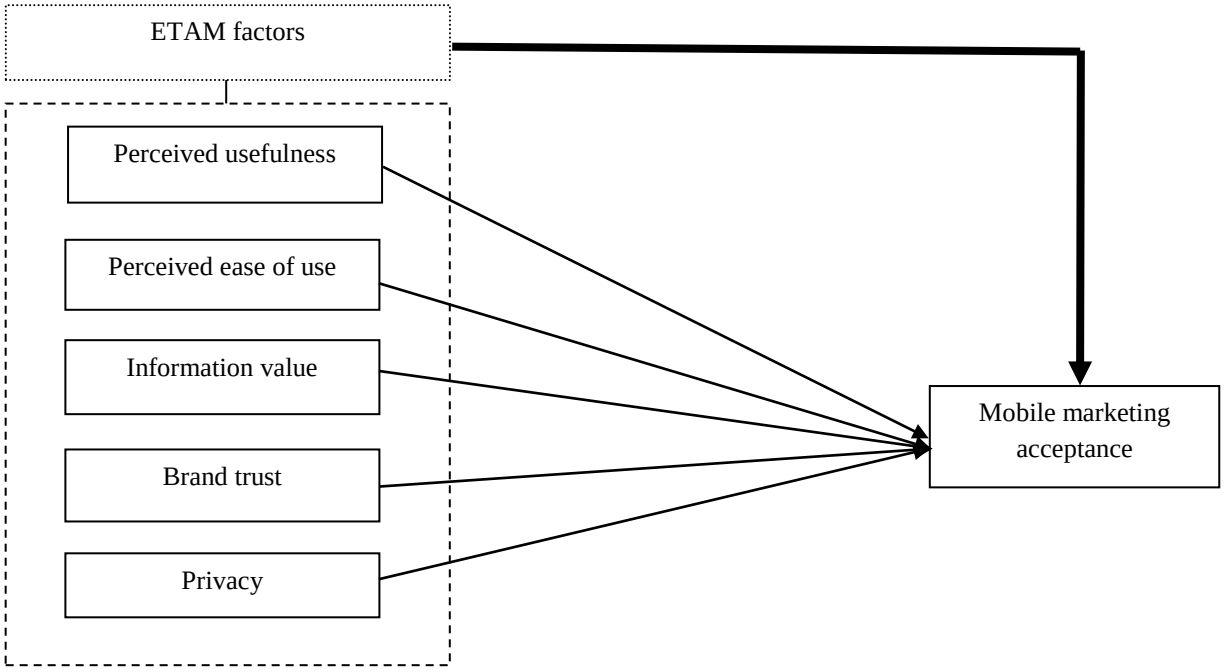

Figure 2.6. The theoretical model of technology acceptance factors in mobile marketing – the conceptual framework

Source: own study.

2.6. Cultural context in mobile marketing acceptance

Many previous studies have shown factors affecting consumer behaviour, in which cultural elements are believed to play an important role (Sriwindono & Yahya, 2012). Culture is the factor that influences many aspects of consumers (Muk & Chung, 2015). Therefore, many scientists are interested in cultural issues in marketing research in general and in mobile marketing. This trend is shown by the dynamic increase in the number of research articles published culturally or multiculturally.

Culture is a complex term to define. Much of the obstacle to understanding the concept of culture stems from the different uses of the time. Culture, by nature, is very different from other elements in the social environment (Sekaran, 1983). Therefore, there are many definitions of culture. Sometimes these definitions may be conflicting. Arnolds (1867, cite in Bennett, 2015) argued that culture involved efforts or intellectual or artistic products, which we might call *"high culture"*. According to this definition, the author emphasized that only a few groups of people had culture.

Contrary to the above description, Taylor (cite in Bennett, 2015) said that "*culture is the complex whole which includes knowledge, beliefs, art, morals, custom and any other capabilities and habit acquired by man as a member of society*." As such, the author thought that everyone was cultured. And culture came from knowledge to habits. It can be seen that the two authors have given conflicting definitions; they had one thing in common that they emphasized a unique culture. For Arnolds (1867), culture was related to art and aesthetics, and for Taylor, culture was associated with the scientific basis.

Boas and his students (1904) rejected the idea of the two scientists. He stated that cultural diversity depended on the people or various social, cultural approach and is not assigned to a specific sector (cite in Spencer-Oatey, 2012, p. 1). He also asserted no high or low culture. Hofstede (1994, p. 3) interpreted: "*Culture is the collective programming of the mind which distinguishes the members of one group or category of people from another*." In this definition, Hofstede focused on the role of culture in society.

Thus, it can be asserted that the concept of culture is very complicated. It is not only encapsulated in semantics. Therefore, making a complete definition of culture is impossible. Depending on the specific case, we can use each definition of culture. Cultural dimension theory,

developed by Hofstede, is a framework used to understand cultural differences between countries and how these values relate to human behaviour. Therefore, Hofstede's theory is most widely used in the national cultural framework for psychology, sociology, marketing or management research (Soares et al., 2007).

Initially, Hofstede's theoretical model consisted of four primary dimensions: power distance, individualism versus collectivism, uncertainty avoidance, femininity versus masculinity (Hofstede, 1980, p. 14). This was a result of a global survey of IBM employees in 1970 to understand the combination of national culture and organizational culture and employee values. Later, in a follow-up study in Hong Kong, he realized that some values were not mentioned in the original model. So, he added to the fifth cultural dimension - the long-term orientation. This dimension was related to Confucianism. In 2010, he added another dimension: indulgence versus self-restraint. Thus, Hofstede's model consists of six basic dimensions:

- **Power-Distance**: is an indicator that measures the distribution of power and wealth among individuals within a business, culture or nation. In this respect, inequality and power are viewed from the perspective of followers - lower levels. The fundamental problem is how society handles the difference among people.
- **Individualism vs Collectivism**: considers the level of society incorporated into groups, obligations, and perceived dependence on groups. On the individualist side, it is defined as the focus of attachment to an individual and their family. So, Hofstede said that this was a loose social relationship. Meanwhile, collectivism is more closely related, uniting family members and others into a group based on mutual help and loyalty. They emphasize the "I" versus the "we."
- **Uncertainty avoidance**: is related to the degree of social ambiguity and uncertainty. Uncertainty avoidance has examined whether people accept and be comfortable with unexpected, unspecified events that happen in life. It also relates to the level of getting risk. In particular, a high level of avoidance of uncertainty indicates a low acceptance or tolerance for ambiguous events, rigid and not taking different behaviours or ideas. The low uncertainty index shows comfort, loose regulation, and easy acceptance of ambiguous events in contrast to it.
- **Masculinity vs femininity**: focus on considering the role of gender differences in hobbies related to achievement, attitudes towards sexual equality, behaviour, etc. In this respect,

masculinity is defined as a society's priority for achievement, heroism, assertiveness and material rewards for success. On the opposite side, femininity prioritizes cooperation, humility, caring for the weak and quality of life.

- **Long-term orientation vs short-term orientation**: considers the level of society's interest in time. Short-term orientation focuses on traditional values, toward the near future, a relatively small trend to save for the future or immediate satisfaction. Long-term orientation emphasizes perseverance, perseverance and long-term growth, adaption to the situation and solving practical problems.
- **Indulgence vs Restraint**: refers to whether society controls the people's wishes in the group? Indulgence is defined as a society that lets relatively free satisfaction of basic and natural human desires related to enjoying life and playing. In opposition to it, restraint points to a community that controls and suppresses people's aspirations through strict rules.

Culture is a complicated concept to define, so this has led to difficulties in identifying, conceptualizing, and operating for research on it and its influence on consumer behaviour in the context of mobile marketing. It can be seen that, currently, there are many theoretical frameworks on culture. In studies, Hofstede's framework is still considered a basic model, practical, and can integrate culture into research. Although there are some objections to his size, it's undeniable that they capture the differences between nations (Soares et al., 2007).

The application and use of cultural theories to the marketing field are of great interest to researchers, even though it was previously related to human resource management. Several researchers have investigated the influence of cultural factors in a single country (see, e.g. Yaveroglu & Donthu, 2002; Baptista & Oliveira, 2015; Chopdar & Sivakumar, 2018). Meanwhile, other studies analyzed on an international scale (see, e.g. Muk & Chung, 2015; Ouyang et al., 2019; Al-Haddad & Galib, 2020).

Mobile marketing is also not out of this trend. With the development of this form on a global scale, the study of cultural theories is essential. It gives meaning to marketers or mobile service providers (Lee & Baskerville, 2003). In the same view, Zhang et al. (2012) asserted that cultural factors influenced mobile services' application and use. Therefore, studies related to cultural theory in the context of mobile marketing are on the rise. The topics in these researches are often primarily associated with the theoretical modelling of cultural dimensions in the context of mobile marketing; the relationship and the role of culture in consumer behaviour

(acceptance, attitude, intention to use) for forms such as SMS, mobile apps, MMS, etc.; the influence of multicultural factors and predicting the future of mobile marketing in a multinational context. Topics related to consumer behaviour are paid more attention to.

Researchers explore the impact of culture on consumer behaviour on mobile marketing through analyzing the relationship between cultural theoretical frameworks and technology acceptance models, such as TAM, UTUAT, etc. (see, e.g., Kumar et al., 2016; Baptista & Oliveira, 2015). Alkhaldi and Alsadi (2016) synthesized references from 1975 to 2016 to provide a comprehensive discussion and assessment of cultural theories; review technology acceptance theory and analyze previous cross-cultural technology adoption studies. This assessment provided evidence examining the influence of national culture on information systems, and the context is promising different findings. The conclusion is that culture has a significant impact on technology adoption models, and they think that testing their adaptability is necessary. Tarhini et al. (2015) recognized that researchers should examine the effect of culture on technology adoption by showing that the TAM model is biased in multicultural contexts.

It can be seen that the role and impact of each cultural dimension on consumer behaviour and attitudes on mobile marketing is different. While individualism is positively impacted, uncertainty avoidance has adverse effects. Also, de Mooji and Hofstede (2000) identified individualism/collectivism as an essential aspect that influences consumer acceptance of the technological change. Even the two dimensions mentioned above have different effects on consumers. Some researchers said that marketers need to be concerned about privacy in an individualist society when they take over mobile marketing. For collectivist cultures, attention should be paid to the marketing strategies that communicate with the whole group (relatives, friends, colleagues) (Muk, 2007). On the contrary, uncertainty avoidance is the factor that hinders the acceptance or intent from using mobile services. Mandler et al. (2018) argued that countries with low avoidance levels were easily approachable and recommendable. For societies with a high degree of uncertainty avoidance (Japan, Eastern Europe, etc.), efforts must influence and reduce perceived uncertainty.

With regards to Masculinity/ Femininity, the researchers seem to pay less attention to this cultural dimension. This cultural dimension is considered from an individual perspective in these articles, comparing male and female genders. On analyzing masculinity/femininity from a cultural or social philosophy, almost no research has been done. Karjaluoto et al. (2008) showed

that women had a stronger relationship with mobile marketing than men. Goh and Sun (2014) argued that men supported status and value orientation, so their acceptance of mobile services is influenced by self-expression. Women are more interested in social orientation and norms, so PU is crucial to their approval.

For power distance, the studies focus on information technology in general. For mobile marketing, the number of research is still limited. In those studies, the impact of power distance is both negative and positive on innovation. Harris et al. (2005) confirmed that high-power culture customers quickly change and adopt advanced technologies, including mobile commerce. Consumers' behaviour and intent to adopt mobile marketing are affected to varying degrees by different cultural dimensions.

Besides, multicultural models help to explain consumer behaviour differences across cultures and the differences in innovation adoption for each culture. Acknowledging cultural differences is considered a prerequisite for successful international marketing (Liu et al., 2019). Agreeing with the above opinion, Hung and Chou (2014) stated that considering the potential of cultural influences on innovation application makes strategies more effective. Currently, many articles use multiculturalism as a basic unit of analysis to understand consumer behaviour towards general marketing and mobile marketing in particular (e.g., Gao et al., 2013; Hung & Chou, 2014; Muk & Chung, 2015; Liu et al., 2019, etc.). The studies aim to focus on how specific cultural differences impact mobile marketing acceptance and adoption. Studies can survey countries within the same culture or can compare countries from different cultures.

While countries are in the same region as Asia, Europe or the Americas, there are also distinct differences in attitudes and consumer acceptance of mobile marketing. In their study, Hung and Chou (2014) compared consumer acceptance in Malaysia and Taiwan. The authors applied the cultural factors in Hofstede's model to analyze their effect on adoption in these two markets. The results showed a difference in power distance and masculine impact in Taiwan and Malaysia. Specifically, most Taiwanese pursued the characteristics of masculine, so mobile marketing campaigns focus on emphasizing the benefits of career achievements and wealth. However, masculine's persuasion may not be as effective as increasing mobile commerce adoption in Malaysia. Besides, the study also found that Malaysians were more reserved than Taiwanese in applying technological innovations. Taiwan is an export-oriented economic organization with global trade relationships with Western countries, especially North America.

Because of that, the Taiwanese were soon exposed to cultural ideas from the West. Meanwhile, Malaysian users were those who showed more compliance with their bosses and accepted competent leadership. This finding was consistent with the assumptions mentioned by Waarts and van Everdingen (2005) that the less a society has power distance trait, the higher the intention to use innovations. Akhtar et al. (2019) analyzed the two countries Pakistan and China. For Pakistani consumers, social influence had a substantial impact on its intention to use mobile banking applications. They often have a habit of consulting relatives and friends before making a decision. Surprisingly, social influence did not have a significant influence on Chinese consumers in this study.

Moreover, many studies focused on comparisons between Eastern and Western cultures in mobile marketing adoption. Qin et al. (2018), Muk and Chung (2015) both conducted a comparison of adoption in the US and South Korea in the context of mobile marketing. However, the two studies used two different models for analysis. Qin et al. (2018) used the TPB model to evaluate the factors influencing consumer intentions of mobile social networking applications in the US and South Korea. At the same time, they compared the two samples' results to determine the impact of cultural factors. The results showed that the effect of concerns over privacy risks was more substantial for Korean users. Muk and Chung (2015) used the TAM model. An important finding to note is that, for Korean consumers, PU is the only factor affecting their attitude towards accepting SMS advertising. SI and PEOU do not affect Koreans. PU mediated the effect of the relationship between PEOU and Americans' attitudes. These results were surprising.

Most Asian countries are collectivist, while Western countries tend to be more individualistic. Therefore, usually, Asian countries are more affected by SI than Western countries. It is conspicuous that Korea, a modern economy, has converged some in shared values of young people, more than those of the contemporary West. The affluence and influence of the Western media can transform a country's culture from collectivism to individualism (de Mooij & Hofstede, 2010). In recent times, the impact of economic growth and the wave of Western media on Korea has developed more individualism among young Koreans. Young Koreans are likely to rely more on their identity personal experience to gauge SMS advertising's consequences. Qin et al. (2018), Muk and Chung (2015) stated that young Korean people's perception of mobile advertising was more favourable than American youth. Like the two studies above, Muralidharan

et al. (2015) insisted that Indian consumers had a better attitude towards smartphone advertising in general and entertainment value, information and reputation of these advertisements than US consumers. The study also showed that entertainment influences Indians' attitudes toward smartphone advertising, while informativeness influenced Americans.

Liu et al. (2012) indicated that the impact of irritation on the Japanese sample was higher than that of the Austrian sample, which means Japanese consumers were more sensitive to mobile advertising than Austrian consumers. The authors argued that this contrasts to the scientific and literary notions that often classify the Japanese as very group-oriented and collectively. They share a large amount of information that Western standards are considered very private. Consumers in individualistic countries and cultures with low power gaps tend to see advertising as stimulating, misleading, and promoting materialism (Belch & Belch, 2007). However, in this study, the results showed the opposite. Similarly, Liu et al. (2019) argued that perceived functional value would have a more substantial impact on advertising adoption in an individualistic culture, such as Australia, than in a collectivist culture, such as China. The results showed the opposite. Furthermore, mobile ad adoption's immediate interactive aspect may indicate that Chinese consumers were more likely to shop on their own than Australians. This result did not seem to be unanimous with Kacen and Lee (2002) findings that collectivist consumers were less likely to join in impulsive buying behaviour. The above contradictions suggest that marketers should not look at an ethnic culture when studying mobile phones' advertising effects. A combination of other factors (i.e. personal values) can help explain and predict consumer behaviour in a mobile environment.

Kumar et al. (2016) analyzed the multicultural impact of the consumer accepting the coupon via SMS on mobile phones. The study was investigated in Canada and Bangladesh using the UTAUT2 model. Survey results have shown the difference between Canadian and Bangladeshi consumers. Specifically, Canadian consumers are influenced by personalization while Bangladeshi are not. Furthermore, for Bangladeshi, the effect of trust on the store's service perception is more important than for Canadian consumers. Besides, the correlation impact and importance of other factors also differ for these two countries. Thus, it can be seen that multicultural theorists can gain insights from the findings of this study. This study clearly shows that for Canadian consumers, SMS content design needs one-to-one targeted marketing with loyal customers because they have a strong demand for relevance and customized suggestion.

For Bangladeshi customers, value is something to keep in mind in exchange for the effort they provide to businesses and marketers. But message personalization is not a direct motivation for Bangladeshi consumers. Therefore, the consumer-stimulating-response model for any country-specific strategy should be designed with cultural differences in mind.

In conclusion, culture is a standard value system in which individuals are interacted differently, leading to significant differences between individuals across countries (Schwartz, 2014). Culture is said to affect almost every aspect of communication (source, message, channel, and receiver), so multicultural empirical evidence will be of great significance for global marketers and advertisers (Liu et al., 2019). Timokhina et al. (2018) suggested that consumer behaviour is related to cultural tastes and preferences. In particular, ethics and national culture are two of the main factors affecting consumers across cultures. Some researchers recommend that marketers need to weigh cross-cultures in building more effective targeted consumer reach strategies. To address the generality of findings and help advance theories, multicultural research is one of the best (Akhtar et al., 2019). It is also acknowledged that users from another country with a different culture will lead to the adoption and use of mobile marketing differently (Lee et al., 2002). For example, the Middle East's cultural value seems to be similar to the value of Asians and in contrast to Western (American) values. Middle Eastern society has high power gaps, collectivism, low uncertainty avoidance, masculinity, short time orientation, and high context style culture. In this regard, Mandler et al. (2018) argued that multicultural values still exhibit a statistically significant impact on mobile commerce usage and application, even when controlling individual characteristics. However, it should be noted that the country and culture are not the same. National boundaries do not necessarily coincide with culturally homogenous societies. Multiculturalism plays an essential role in assessing consumer behaviour in the mobile marketing landscape. It can be said that mobile marketing appears to be a reasonably homogeneous form of marketing related to consumer behaviour patterns. Consequently, it will be interesting to investigate the differences between mobile marketing and other online marketing forms or other traditional forms among different cultures. It is possible to compare the extent of the impact between theoretical models of culture on consumer behaviour. Besides, researches in this area may expand problems related to the testing of multilayer, hyper cultural, and microcultural models, country - culture, etc. These are research directions that can be considered

in the future. Such patterns will help to better understand the role of culture in attitudes and behaviour.

In the scope of this study, to assess the difference in mobile marketing acceptance between customers in Poland and Vietnam, cultural factors are added to the model presented in Figure 2.6. Thus, this is theoretical model for empirical research in this doctoral dissertation. The final model is shown in Figure 2.7.

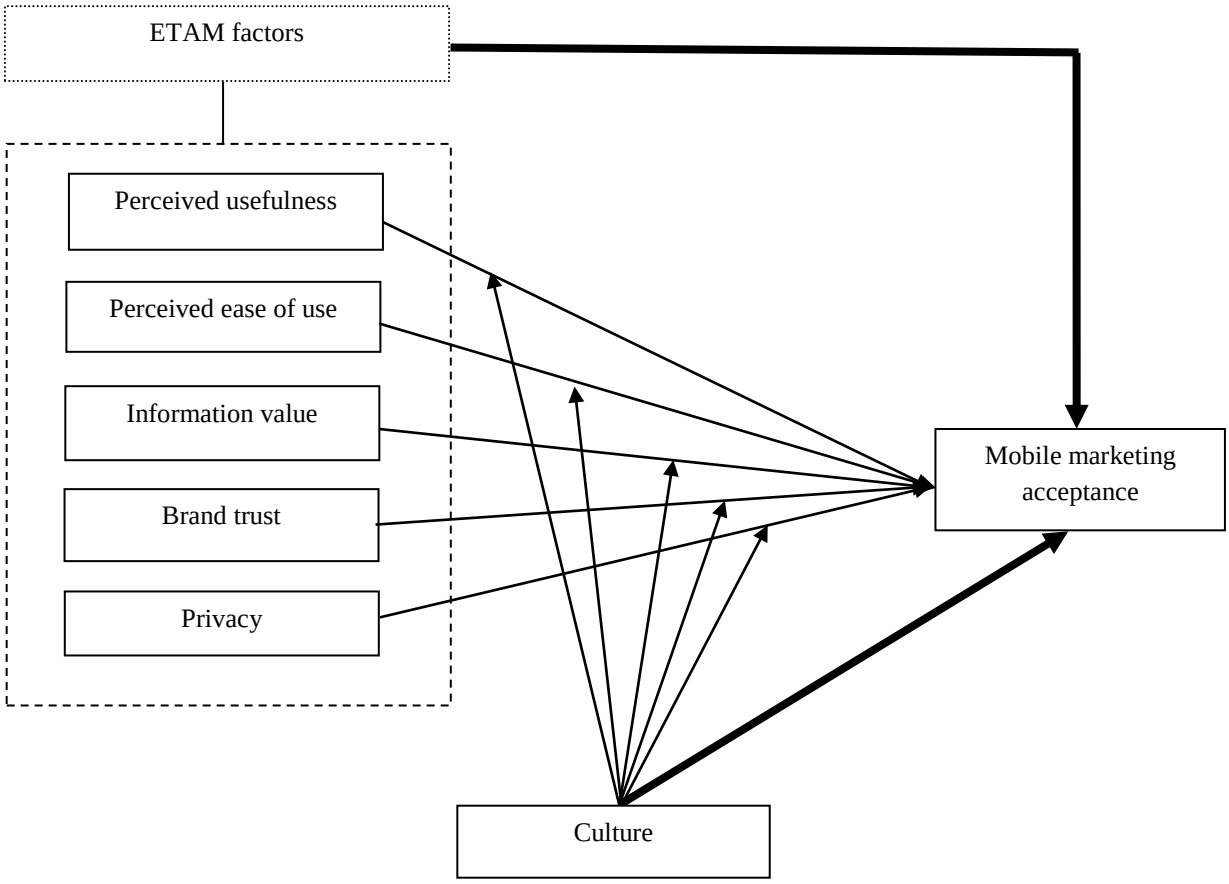

Figure 2.7. The theorical model
Source: own study.

CHAPTER III
THE CONCEPT OF TECHNOLOGY ACCEPTANCE BY GENERATION Z IN POLAND AND VIETNAM – CONTEXT OF THE STUDY AND RESEARCH DESIGN

This chapter provided the general concept and characteristics of Generation Z. In addition, the distinctive characteristics of Generation Z in Vietnam and Poland were also described and compared. Thereby, the findings showed a clear difference in culture between the two countries Finally, this chapter presented and discussed a conceptual framework of the research and the development of research hypotheses.

3.1. Generation Z as the object of the research study

Mannheim (1952) defined a generation as "*a group of individuals of similar age who are witnesses of a significant historical event, within a given time frame. This author believed that the defining characteristic of a group that meets the characteristics of a generation is generational consciousness*." It is characterized by a set of shared values, beliefs, attitudes, and social change. Mannheim (1952) has shown that individuals born in the specific period have similar values, behaviours and lifestyles. Extending this concept further, members of the same generation experience the same events while at the same life stages. Those special events that occurred during the formative years had a particularly profound impact on the generation's enduring characteristics, values, and beliefs. All generations have specific features and judgment values; individuals exhibit similar characteristics to others in the generation they are in (Gürcüoğlu & Çelik, 2016). Each generational group is broadly described from a collective perspective, primarily influenced by social changes, economic conditions, and essential historical developments (Chicca & Shellenbarger, 2018a). In addition, Chen (2014) stated that people in the same generation might exhibit different characteristics from other generations' behaviour. Agreeing with the above point of view, Gürcüoğlu and Çelik (2016) emphasized how the intergenerational differences can manifest in personality, working life and social life. However, the classification of generations based on the above characteristics has produced different results.

In addition, Pilcher (1994) defined a generation as "*a delineated population who experience the same significant events within a given time.*" This definition is commonly used in the social sciences. It can be understood that people in the same generation often share similar sociological or cultural experiences about the world at a particular time in history. Because of this, the term "social generations" was born. Some analysts have emphasized that generation is one of the basic social categories in a society and these categories allow a coherent view of people's attitudes and aspirations. Others, however, hold the opposite opinion, questioning whether the importance of generation is preserved in the face of more powerful and potentially more challenging cultural influences, such as class, gender, race and education. The study of generations by Howe and Strauss (2000, p. 41) established three criteria by which we can talk about a generation. These criteria include:

1) *"Perceived member"* means that the person feels, considers himself part of a group, as a member of that group.
2) *"Common beliefs and patterns of behaviour"* is such as family background, occupation, religion, or political views.
3) *"Shared history"* includes all historical events during childhood and adolescence. These events have a significant influence on the private lives of most of the group members.

More simply, Murtell (2020) defined a generation as "*all those who were born and lived at the same time, considered collectively*" or it is "*the average period, generally considered to be about 20–30 years, during which children are born and grow, become adults, and begin to have children.*" It can be seen that although definitions of generation are different, they all emphasize the importance of historical events. Thus, an event will significantly affect a particular set of values and characteristics that members of a generational group will hold throughout their lives, which will decisively influence their attitudes and behaviour. Kwiecień et al. (2020) synthesized the classifications of generations of previous studies, which are shown in Table 3.1.

Table 3.1. The classification of generations overview

Author (s)	Type of generation(name)	The years of birth for representatives of a given generation
Dimock, 2019	Silent	1928 to 1945
	Boomers	1946 to1964
	Generation X	1965 to1980
	Millennials	1981 to 1996

	Generation Z	1997 to 2012
Chicca & Shellenbarger, 2018a	Generation Y Generation Z	the early 1980s to the mid-1990s the mid-1990s to ending around 2012 (Generation Z includes those born from 1995 onwards)
Lakatos et al., 2018	Generation X Generation Y Generation Z	1965 to 1980 1980 to 2000 after 2000
Cho et al., 2018	Generation Y Generation Z	1977 to1994 the mid-1990s to 2002
Goh & Lee, 2018	Baby Boomers Generation X Generation Y Generation Z	1945 to1964 1965 to1979 1980 to 1998 1995 to 2009
Brown et al., 2015	Sages Baby Boomers Generation X Generation Y	1925 to 1945 1946 to 1964 1965 to 1980 1981 to 2000
Ozkan & Solmaz, 2015	Silent generation Baby increment Generation X Generation Y Generation Z	1925 to1944 1945 to1964 1965 to1979 1980 to 2000 after the year of 2000
Chomątowska & Żarczyńska-Dobiesz, 2014	Baby Boomers Generation X Generation Y Generation Z	1946 to 1964 1965 to 1976 1977 to 1990 after 1990
David et al., 2012	Baby Boomers Generation X Generation Y	1946 to 1964 1965 to1978 1979 to 1994

Source: Kwiecień et al., 2020.

Based on the classification of the studies, in this dissertation, the Author classified the generations as follows:

- Baby Boomers include people born between 1946 and 1964;
- Generation X includes people born between 1965 and 1979;
- Generation Y includes people born between 1980 and 1995;
- Generation Z includes people born between 1996 and 2013.

Taking into account the purpose of the dissertation, further considerations will focus on Generation Z.

Characteristics of the Generation Z

Generation Z was born from 1996 to 2013. Generation Z is the most ethnically diverse generation (Dimock, 2019). Like the previous generation, Generation Z's behavioural character development is significantly shaped and influenced by the diverse environment and surrounding factors. Generation Z was born in an era full of challenges, from terrorism, political instability to

environmental concerns. Besides, they are the first generation to have direct and widespread contact with digital technologies such as social networking sites and information on the Internet (Turner, 2015). They grew up in a highly sophisticated media and technology environment that has made them a much more Internet-savvy and professional generation than their predecessors (Dimock, 2019). The advent of the web, the Internet, smartphones, laptops, freely available networks and digital media has dramatically impacted the ethos of Generation Z (Singh & Dangmei, 2016). Therefore, they are also known as Generation Z, iGen, digital natives, net generation, iGeneration, Gen Next, I Gen, Gen Tech, Gen Wii, Post Gen, and Plurals (Betz, 2019; Wiedmer, 2015). They were born and raised in the digital world and what distinguishes them from the other generation is that their existence is more linked to the electronic and the digital world. It can be mentioned that they are the first global generation, the most technologically qualified and socially empowered (Pavan & Vishwanath, 2018). The advent and strong development of technology, especially the Internet, has impacted changes in the characteristics, lifestyle and behaviour of Generation Z (Betz, 2019).

First, the impact of technology changes the lifestyle and personality traits of Generation Z. The hallmarks of Generation Z are that they are practical, intelligent rather than wise, and like to take the lead. As a result, Generation Z is more entrepreneurial, realistic about job expectations, and optimistic about the future. Furthermore, Generation Z has the "*network generation*" features due to the highly developed digital era in which they were born (Singh & Dangmei, 2016). Since Gen Z feels comfortable in the world of technology, the most important thing is that they want to be surrounded by that environment. They are always online using any technical device (Dimock, 2019). These manifestations can be seen through their actions and may appear to be a pattern in their lives (Bencsik et al., 2016).

Generation Z has a different way of communicating, and social media is an integral part of their lives. In addition to Facebook, Generation Z uses many other social networking platforms such as Instagram, Twitter, Snapchat or some anonymous social networks such as Secret, Whisper etc. (William, 2015). When communicating, the words, slang and expressions Generation Z use are pretty foreign to their parents, and the two sides sometimes drift apart. Since Generation Z primarily communicates through social media, they lack physical interaction. They are a generation that can form huge communities and a communication loop with people they will never meet in real life. Paradoxically this generation is collaborative, chatty, and

sociable online, but in the real world 'they tend to be less able to develop personal relationships (Riva et al., 2012). In addition, they may be less likely to use logic when thinking. The reason is that they can get any information quickly and in no time through the Internet. They favour watching videos instead of reading media like books and manuals. Generation Z wants to receive messages and knowledge from a much more exciting website (Jaleniauskiene & Juceviciene, 2015). Therefore, the norms of Generation Z are different from those of the previous generation.

However, due to their over-reliance on technology, Generation Z has underdeveloped social and relational skills and is more at risk of isolation. They are insecure and suffer from mental health problems, such as anxiety and depression (Chicca & Shellenbarger, 2018a). Besides, Generation Z tends to be impatient, lack focus, individualistic, egotistical and highly dependent on technology (Singh & Dangmei, 2016). Generation Z wants to be heard and exchanged regardless of their young age (Singh & Dangmei, 2016). Technology is part of their identity. They are tech-savvy but lack problem-solving skills and have not demonstrated the ability to look at situations, put them in context, analyze and make decisions (Coombs, 2013). They are continuously looking for new challenges and impulses. They are not afraid of constant change, and due to the world of the Internet, they possess a lot of information, but only to a certain extent. To solve the problem, they try to find the solution on the Internet. Although Generation Z is racially and ethnically diverse and open-minded, they often do not take an active role in social issues, preferring to engage in sedentary activities (Shatto & Erwin, 2017).

Second, technology changes the habits and behaviour of Generation Z consumers. It can be affirmed that Generation Z is the next new generation of consumers. To attract and interact well with this potential customer force, businesses and marketers need to focus on understanding and analyzing their characteristics and behaviours (Anjum et al., 2020). From there, they provide appropriate strategies to achieve the best results. Disruptive and different Generation Z shoppers are growing up. Constant technological innovations, challenging economic conditions and complex global politics influence their habits and behaviour. Despite their young age, they wield unprecedented influence over purchasing decisions and wield enormous economic power of their own (Glass et al., 2017). For Generation Z, maturating in a digital environment has influenced the decision-making process. With many forms of communication that are immediately usable (like NFC, QR codes etc.), interaction with the online world has become hyper-personalized for many people of this generation (Kowalczyk, 2019). Digital networks facilitate exposure to their

preferences, creating a matrix of consumer choices. This group of consumers will direct their purchases to meet basic needs – like food, clothing – based on what they find online. Wood (2013) describes Generation Z as consumers use based on four pillars:

- Interest in new technology;
- Insistence on ease of use;
- Desire to feel secure;
- Desire to temporarily escape the reality that they have to face.

It's important to note that Generation Z's preferences and buying needs are vastly different from previous generations. This generation's buying culture, which already spends most of its time on the Internet, strongly influences their priorities and expectations. However, it should be noted that Generation Z still prefers to visit stores and interact directly with brands (Parry, 2020). As a result, Generation Z has always had more options in the market (both in brick-and-mortar retailers and in e-commerce) than their predecessors. Having more options also leads to them becoming more demanding. Therefore, they rely on distinctive designs or aesthetic differences to make choices or purchase decisions. Priporas et al. (2017) found that Generation Z is less loyal, more concerned with the experience, and has high expectations for the products and services of the business. When choosing a shopping channel, their considerations are expressed in order of preference, which are availability, convenience, and value (Haller et al., 2020).

Generation Z is savvy consumers who know what they want and how to get it. At the same time, they are oversaturated with brands (Băltescu, 2019). Generation Z's decisions and choices are thoroughly analyzed and highly pragmatic; they consider expending as access rather than possession or as an expression of personal identity (Goh & Jie, 2019). These characteristics put significant pressure on businesses as they have to find new ways to attract and capture consumers' attention. To appeal to this generation of consumers, brands must see them as individuals who pride themselves on their values, not as a homogeneous group of consumers with defined shopping habits. They respond to brands that interact with them and seek to earn their trust, rather than brands that rely solely on the big names. Generation Z is excited to be exposed to brands that are highly innovative and stand out for values. They expect to have a relationship with their own set of values (Parry, 2020). They are also very active in sharing their ideas, collaborating and co-creating with brands. In this process, they expect brands to meet their needs (Haller et al., 2020). Additionally, Generation Z attaches great importance to reliably and

consistently delivering retail essentials whether they shop in-store, through an app, or on a website.

Besides, finding information in the decision-making process of Generation Z is also easier. They are already exposed to the Internet, social networks, and mobile systems, so they are very comfortable gathering and cross-referencing multiple sources of information and integrating virtual and offline experiences (Băltescu, 2019). Almost all information from products, services or prices is available on the Internet platform; Generation Z can easily compare businesses and make suitable choices. Moreover, social media is flooded with the buying habits of Generation Z, who often make purchases through social networks. Özkan and Solmaz (2017) highlighted that Generation Z loves to watch and learn about marketing activities done through social media. Generation Z wants to make informed decisions about the brands and products they choose. They want to feel proud of their choices. As a result, they tend to scroll through multiple touchpoints before purchasing — doing online research, social media, asking family and friends, and in-store before making a purchase (NRC, 2020). It can be said that 24/7 access to information and digital resources has made Generation Z more educated, knowledgeable and autonomous in deciding on products and services or brands. Kotler et al. (2021) described Generation Z as a new type of customer such as:

- distinguished by high mobility;
- must have everything at once - they must not waste time. When they see something on T.V., they immediately search for it on the Internet using their mobile devices;
- decide to buy something in a store, they first compare price and quality online;
- are also very social and active on social media. They have close relationships with others and have constant access to the Internet.

Mobile marketing and Generation Z

Today, Generation Z of all ages have access to mobile devices such as smartphones, tablets, smartwatches, and more. The skill to access information from anywhere and at any time has dramatically influenced Generation Z in their consumption habits. So, Generation Z or gen-Z'ers is also recognized by everyone as the generation associated with smartphones and social media. Kaplan (2012) reported that Generation Z doesn't read newspapers (that's why newspapers will probably disappear soon), don't watch regular T.V. (at least don't bring it over to

T.V.), and besiege most of the time with their mobile devices. This trend makes it almost impossible for them to reach them through billboards or radio. Social media has always been a part of their lives — Facebook was founded in 2004, YouTube in 2005 and Twitter in 2006 — making them perfect candidates for mobile social media apps. Mobile phones by young consumers are increasing rapidly (Hussein & Attia, 2019). Generation Z constitutes a large target segment of mobile Internet users. This trend is overgrowing in emerging economies and is therefore worth exploring (Tan & Leby Lau, 2016).

Generation Z is almost entirely dependent on their mobile devices for most daily tasks (Zephoria, 2020). From paying bills for the bank to managing home security, these operations are now virtually done with the convenience of mobile devices. This dependence causes brands to adjust how they interact with this generation. In retail, Generation Z enjoys the convenience of using their mobile devices to conduct various activities, from business to shopping. Generation Z's desire for this distinctive mobile experience has challenged retail brands in defining how to reach their Generation Z consumers. So, there is no doubt that mobile marketing is a potent tool of digital marketing strategies for businesses for Generation Z (Garlick, 2019). To remain relevant in the market, brands must adapt to Z's need for a solid mobile presence from brands.

Anjum et al. (2020) found that Generation Z requires a better mobile experience because most digital interactions are on mobile phones. Marketers must ensure that their digital marketing strategies rely on promoting brands and providing affordable services. Maintaining an easy-to-use mobile app helps brands optimize the mobile experience for their consumers. In addition, the brand must ensure that the product image is sharp, bright and eye-catching, exclusively for the brand's mobile website or mobile applications (Garlick, 2019). Generation Z will be convinced to click on the image and buy the product. Visual appeal can generate an online sale. To successfully reach Generation Z, brands must maintain a mobile media presence while providing innovative, engaging products to consumers. This marketing strategy not only results in short-term sales but also creates long-term consumer relationships.

3.2. Comparison of Generation Z in Poland and Vietnam

According to worldpopulationreview datas (2021), the number of Generation Z is 6.816,4 million and constitutes 18.04% of the population of Poland in 2021. Meanwhile, their number in

Vietnam is 24.849,9 million and constitutes 25.29% of the population of Vietnam. Overall, the most prominent feature of Generation Z is the digital natives; they have instant access to all kinds of information. They stay connected and spend more time on social media than any other age group. However, cultural differences reflect differences in individual values and in the assumptions people make. Each culture has its values, traditions and communication patterns. In terms of country and culture-specific drivers and characteristics, Generation Z in each country will have distinctive features (Scholz & Rennig, p. 19). Generation Z in Poland and Vietnam may have distinct characteristics due to the specific differences between Eastern and Western cultures. Cultural differences between Poland and Vietnam are analyzed based on the dimensions of the Hofstede model, including: (1) power distance, (2) individualism, (3) masculinity, (4) uncertainty avoidance, (5) long-term orientation and (6) indulgence. The scores in the cultural dimension of Poland and Vietnam are shown in Figure 3.1.

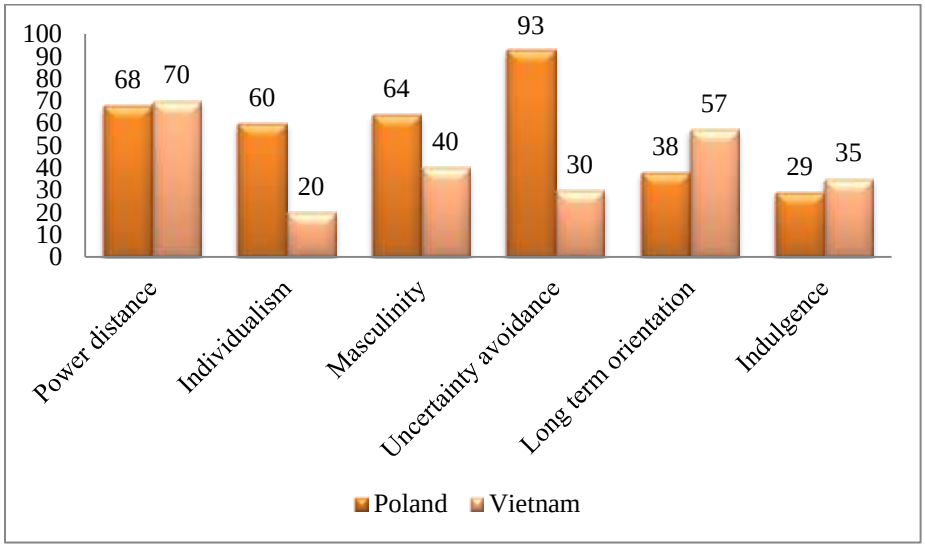

Figure 3.1. Comparison of cultural dimensions in Poland and Vietnam
Source: Hofstede, 2017a.

The first aspect is the power distance. A hierarchical society indicates an acceptance of the hierarchy within an organization. This reflects inequality, subordinates expect to be told what to do, and the ideal boss is a benevolent autocrat (Hofstede, 2017a). Lower-level colleagues often show respect to their superiors, and it is essential to cultivate relationships with supervisors. Moreover, office work is valued much more than physical work. In Vietnam, the government plays a leading role in monitoring and intervening in the economy and other aspects

of social life (Sarason et al., 2018). It is this characteristic that can lead to power that can be distributed unequal across business sectors. A social business venture may have a distinct power disadvantage and lower priority than state-owned enterprises. In addition, due to the influence of Asian culture, power is also expressed in social relationships. Older people automatically get respect from younger people.

However, Kuźmińska-Haberla (2017) stated that today's younger generation views the issue of hierarchy differently and disapproves of inequality much more. Mazurek (2019) indicated that Generation Z in Poland prefers to interact with a manager who listens to them rather than just giving them instructions, even though they expect feedback from their manager. They appreciate the opportunity to contribute with their proposals, so it is crucial to develop a co-creative work environment. For Generation Z in Vietnam, the impact of power distance is relatively more profound. In an organization, they often have little opportunity to voice their ideas and are forced to submit to their supervisor. This creates a conflict as Generation Z is seen as the generation that wants to express themselves and love freedom.

The second dimension is individualism. Poland, with a score of 60, is an individualist society. This means that there is a high preference for a loose social framework in which individuals concerned with themselves and their immediate family (Hofstede, 2017a). That is why the Polish Generation Z has characteristics such as transparency, autonomy, flexibility and personal freedom (Mazurek, 2019). Group or individual-oriented approaches are apparent in the workplace. Generation Z cares about their achievements, career advancement and employment. They like to be seen and treated as individuals by their superiors, bringing impact and added value to the organization (Schawbel, 2014). Hiring is performance-dependent, similar to promotion - it should be based on results, merit and personal achievement. However, Polish culture contains a "contradiction": Poles need a hierarchy despite their high individualism. This combination (high for power distance and high for individualism) creates a specific 'tension' in this culture (Wojciech & Bogusz, 2011). Poles value belonging to a group but try to protect their identity. This characteristic is evident in Generation Z, namely that they will support the company's goals, but only as long as they are consistent with their personal goals (Dolot, 2018).

In contrast to Poland, Vietnam, with a score of 20, is a collectivist society. This is reflected in a close long-term commitment to the "member" group, be it a family, extended family or extended relationships. Loyalty in a collectivist culture is outstanding and transcends

most other social norms and rules. Such a society fosters strong relationships where everyone is accountable to the members of his or her group. Vietnamese people also tend to work in harmony with each other, have a team-thinking style, and prefer group activities and decision-making to benefit the group instead of individual goals (Nguyen & Truong, 2016). Young people in Vietnam still depend a lot on their families. For example, they are still not oriented in choosing the right career because most of them will listen to their parents' opinions.

Masculine is the third dimension of Hofstede model. Poland scores 64 in this respect and is, therefore, a masculine society. In masculine countries, people "*live to work*", managers are expected to be assertive with a focus on fairness, competition and performance. Even so, Poles are said to have less extreme attitudes towards work (Kuźmińska-Haberla, 2017). Especially the younger generation trying to find a work-life balance, and don't want to sacrifice their private life for work. Meanwhile, Vietnam is considered a feminine society. In feminine countries, the focus is on "*working to live*", people always strive for consensus, value equality, solidarity and quality in their working life. Conflict is resolved by compromise and negotiation. However, Vietnam is an Asian country. Vietnamese people tend to emphasize male dominance in many aspects of life. Although gender inequality has narrowed significantly among young Vietnamese in recent decades, discrimination still exists regarding the role and position of women in society. Therefore, it can be said that Vietnam is a country with a moderate level of masculinity (Nguyen & Truong, 2016).

The fourth dimension of Hofstede model involves uncertainty avoidance. The Poles have a very high priority on uncertainty avoidance. They maintain rigid rules of belief and behaviour and are intolerant of abnormal behaviours and ideas. In these cultures, the emotional need for rules (even if regulations never seem to work) time is money. People have an inner urge to busy and hard-working. Moreover, innovation can be resisted, and security is an essential factor in personal motivation (Hofstede, 2017a). Therefore, Generation Z is always defined to seek security. Feelings of security and the need for maturity and control lead young people in Poland to drink less, wear seat belts more often, and rarely use drugs (all4comms, 2016). Moreover, at work, they want to stick with the company for a long time, willing to go on a business trip abroad, but they don't want to change their workplace (Dolot, 2018).

In this respect, the Vietnamese have less priority in avoiding uncertainty. They maintain a more relaxed attitude, where the practice is perceived as more of a rule and deviation from the

norm is more easily tolerated (Hofstede, 2017a). More importantly, innovation for Vietnamese people, especially Generation Z, is not seen as a threat. They are willing to try new things, including new technology. Therefore, they have a preference for global and international trends. However, Vietnam's Generation Z faces a clash between Asian and Westernism (Nguyen & Nguyen, 2020). Therefore, they are forced to find solutions to access new streams of thought without losing their national cultural identity. But rather than disrupting previous generations, the Vietnamese in Generation Z show a strong preference for local values and a firm commitment to social issues. Therefore, traditional cultural elements are increasingly integrated into all aspects of life. They still cherish traditional values but incorporate them in a modern context. Although rated as more open-minded than the Poles, Vietnamese also have a certain degree of risk aversion, a delay in making immediate decisions when feeling uncertain, and a tendency to rejecting unprecedented ideas or behaviours. Especially in work, Vietnamese business managers sometimes can be intimidated by ambiguous situations, so they often try to avoid these uncertainties by establishing some formal rules and detailed action plans to prevent possible problems (Duong & Swierczek, 2008).

The fifth dimension is long term orientation. Poland's score of 38 in this respect means it's more normative than pragmatic. Poles tend to define short-term orientation. They show great respect for tradition, save for a relatively small future, and focus on getting results quickly (Kuźmińska-Haberla, 2017). Meanwhile, Vietnam is classed as communes. However, with 57 points, Vietnam's score in this aspect is significantly lower than other cultures strongly influenced by Confucianism, such as China 80, Taiwan 93, Korea 100 and Japan 88 (Nguyen & Truong, 2016).

The last dimension refers to indulgence. Polish and Vietnamese societies are both restrictive societies. Societies that score low on this dimension tend to be skeptical and pessimistic. In addition, in contrast to peaceful societies, restrictive societies do not emphasize leisure time and control over the gratification of their desires. People with this orientation are aware that their actions are constrained by social norms and feel that it is wrong to indulge in self-indulgence. Their desires, sometimes hidden, are limited by social and religious means. However, because Generation Z is a generation associated with technology, especially the Internet and social networks, they become more confident, more open and spend more time on their entertainment activities on the Internet.

Based on aspects of Hofstede's model, the conclusion can be drawn that: Poland is a country with characteristics such as average individualism, considerable power distance, highly masculine society and high uncertainty avoidance and short-term orientation. Meanwhile, Vietnam is a country with characteristics such as high collectivism, considerable power distance, moderately masculine society, and moderate uncertainty avoidance and long-term orientation. It can be seen that Poland and Vietnam both have similarities and differences in cultural aspects. It is these characteristics that will affect the acceptance of the technology in Poland and Vietnam. Table 3.2 shows the extent of cultural dimensions in Hofstede's model between Poland and Vietnam.

Table 3.2. Comparison cultural dimensions between Poland and Vietnam

Cultural dimensions	Poland	Vietnam
Individualism	Average	Low
Power distance	Moderate	Moderate
Masculine society	High	Moderate
Uncertainty avoidance	High	Moderate
Orientation	Short-term	Long-term

Source: own study.

3.3. The state of mobile marketing in Poland and Vietnam

Mobile market in Poland and Vietnam

According to Datareportal statistics, there are 52.76 million mobile connections in Poland in January 2021. Poland's number of mobile connections has increased by 728 thousand (+1.4%) from January 2020 to January 2021. The number of mobile connections in Poland in January 2021 is equivalent to 139.5% of the total population. In addition, there are 31.97 million Internet users in Poland as of January 2021. The number of Internet users in Poland has increased by 1.3 million (+ 4.4%) from 2020 to 2021. Internet usage in Poland reached 84.5% in January 2021. Meanwhile, there were 154.5 million mobile connections in Vietnam in January 2021. The number of mobile connections in Vietnam in January 2021 is equivalent to 157.9% of the total population. Thus, this number in Vietnam increased by 1.3 million (+0.9%) from January 2020 to January 2021. In addition, the percentage of mobile device users accessing the Internet is 65.08 million people, accounting for 94.7% of all Internet users. In which up to 94.3% of people

use smartphones to access the Internet. Thus, it can be seen that the number of mobile phone users in Vietnam is higher than in Poland but the growth rate is lower.

Regarding mobile phone activities, making phone calls and using its gadgets is the most common activity performed by Poles, accounting for 41.7%. They also frequently use their mobile phones to scan QR codes and make mobile payments, with rates of 37.8% and 35.5%, respectively. In addition, they also love watching videos on mobile devices. Vietnamese people are very fond of using mobile devices; on average, they spend 3 hours and 18 minutes a day accessing the Internet on mobile devices. The activities that Vietnamese people do when using mobile devices are also very diverse. They spend a lot of time on phone calls and services (at 56.2%). Next, 45.6% of respondents regularly scan QR codes on their mobile phones. Activities less than 50% are watching video content (37.2%) and mobile payments (33%). Vietnamese people rarely use mobile phones to store tickets or boarding passes. Data are shown in Figure 3.2.

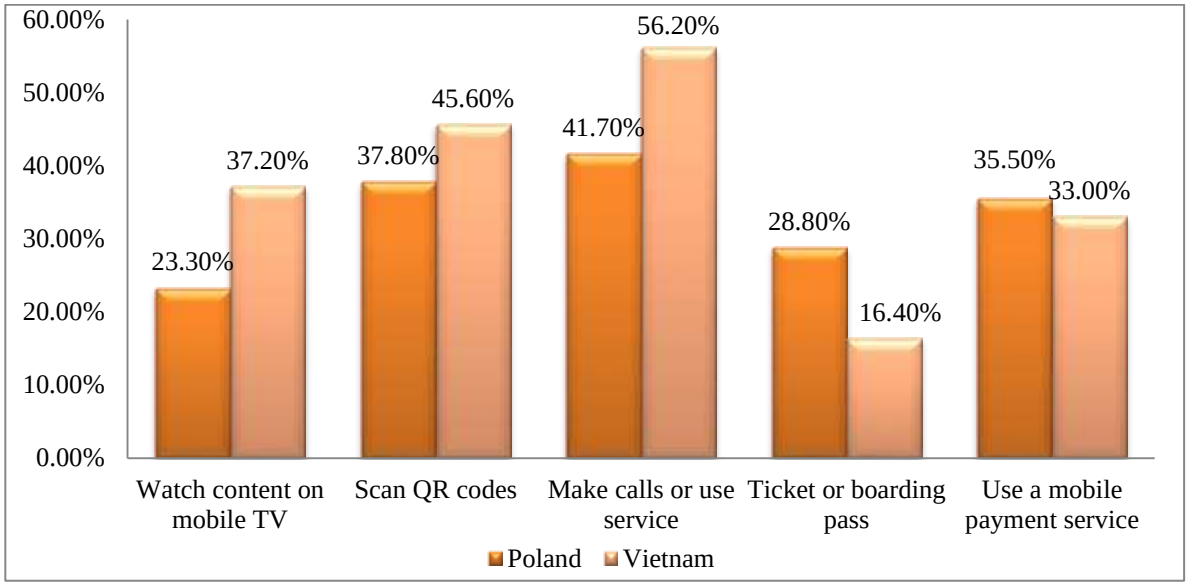

Figure 3.2. Reasons for using mobile phones by Polish and Vietnamese people
Source: Datareportal, 2021.

The market for mobile applications is overgrowing in Poland. According to Datareportal statistics, in January 2021, about 870 million mobile applications downloaded, and spending on these applications reached 390 million USD. Social networking is the application that Polish people most often use, reaching 93.3%. Among them, the Facebook platform is the most visited

by them. The high use of social networking sites also contributes to the increase in the rate of chat applications on mobile phones, and these applications are second with a rate of 91%. The most popular mobile chat apps for Polish people are the Facebook messenger, Whatsapp or Snapchat etc. Besides, they tend to like watching videos on their mobile phones. The proof is that 83% of respondents use entertainment or video applications. They also prefer to shop via mobile phone, with the number of downloaded shopping apps reaching 80.7%. In addition, Polish people use mobile applications for many other purposes in life, such as health, finance and even dating.

In 2020, Vietnamese people downloaded 2.78 billion mobile applications, and spending on apps was US$290 million. The percentage of Vietnamese people's mobile applications focuses mainly on social networks (with fees). Some of the paid social media apps that Vietnamese people use, like Bigo live- enable a live streaming platform that users can share live moments with their followers. Besides, Hago application – where you can join any chat channel, play games together or sing and make friends. Tinder is also the mobile application that Vietnamese people pay the most (ranked 4), although the number of people downloading dating apps in Vietnam is not much, only 10%.

Chat apps and social networking apps are frequently used by Vietnamese people, accounting for 94.7% and 94.5%, respectively. In which, TikTok is the most downloaded social networking application, followed by Facebook. For chat apps, Facebook messenger and Zalo are two popular apps. Maps, video entertainment and shopping, are also popular with Vietnamese people. It is worth noting that although Vietnamese people often use mobile phones to transfer money to relatives and friends, only 40.1% use applications from Vietnamese banks. The reason is that currently, in Vietnam, there are many applications related to e-wallets, such as Momo pay or Zalopay. These e-wallet applications link with all Vietnamese banks, especially allowing consumers to top up and withdraw money at convenience store chains such as Circle K, Ministop, Viettel Post, F88, FPT Shop. This helps a lot for Vietnamese people because they have a habit of mainly using cash while paying by card or bank account has only been popular in recent years.

Figure 3.3 shows differences in mobile application usage by category in Poland and Vietnam.

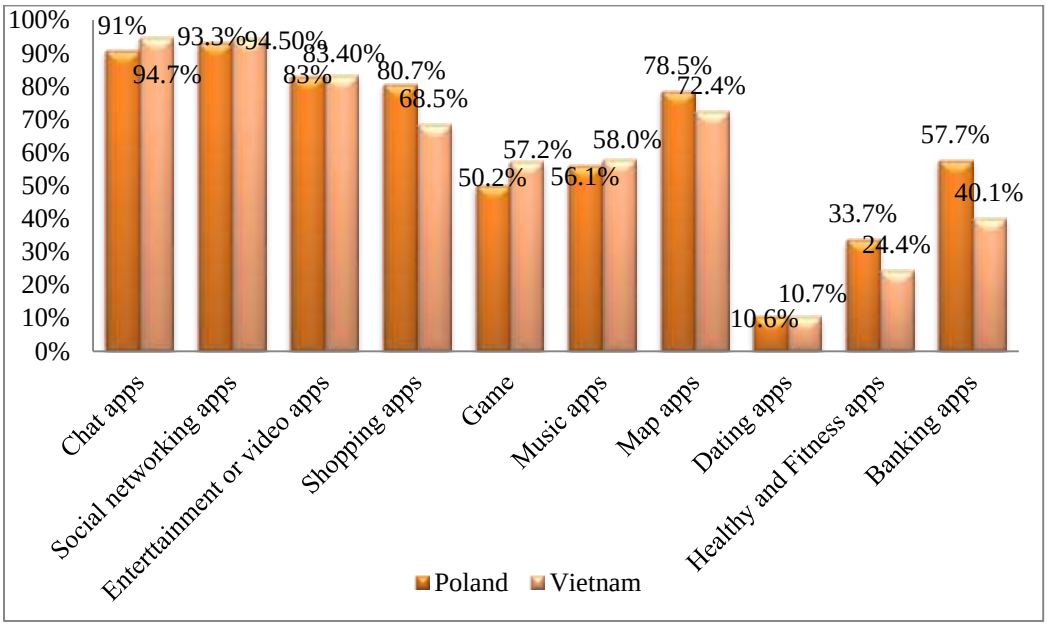

Figure 3.3. Use of mobile apps by category in Poland and Vietnam
Source: Datareportal, 2021.

Mobile marketing in Poland

The emergence of smartphones with powerful wireless networking capabilities paved the way for establishing various mobile commerce services. As a result, Polish businesses have begun to pay attention to mobile marketing. With the increasing use of mobile content, advertising budgets on this channel are increasing, especially in SMS messages combined with search engines and social networks. association (Wirtualnemedia, 2020). According to IAB Polska (2020) report, 45% of the growth in Internet marketing is mobile advertising budgets. Overall, the value of mobile advertising grew 21% year-on-year in 2019 and its share of the entire electronic advertising market in the first three quarters of 2019 was 28.2%. Therefore, IAB Polska further asserts that mobile marketing will be one of the key channels in e-commerce activities in Poland in the future.

Sznajder (2013) observed a rapid increase in mobile technology use in Polish companies, especially in marketing activities. Thanks to mobile technology, businesses can carry out more effective marketing activities involving all elements, including product shaping, pricing, distribution and promotion. The way Polish companies interact with consumers has also changed. Businesses have many ways to reach customers without being limited in time and

place. Besides, the author also mentions the business sectors strongly influenced by mobile technology, namely: travel, banking and automobile. In Poland, travel agencies' revenue from mobile transactions has increased by 280%. Booking flights and hotels, renting cars, purchasing travel packages is increasingly done through mobile devices. Travel agencies and travel agents develop various applications that are useful to their customers. For the banking sector, Sznajder (2013) emphasized the role of mobile payments. Mobile technologies such as NFC are beneficial for the proliferation of mobile payments. This tool brings convenience to customers as they do not need to go to the bank to carry out transaction procedures.

Bajdak et al. (2019) investigated the mobile marketing tools used in Polish enterprises and the attitude of business managers towards this form. The study was conducted through interviews with 235 business managers in various fields such as services, commerce, manufacturing and mixtures. The results showed that marketing communication with individual customers, social media on mobile devices is the most commonly used by businesses, accounting for 77.4% of the companies surveyed. In second place are mobile sites ranked second, with 69.8% of companies surveyed use this tool. The primary purpose is to present the company's products and terms of purchase. Email on mobile devices ranks third with 67.2%. Followed by text messages (SMS), search engine advertising (AdWords) and mobile advertising account for more than 50% of businesses surveyed. Meanwhile, tools such as newsletters, mobile applications, locators, mobile coupons, QR codes are rarely used. Agreeing with Bajdak et al. (2019), Sznajder (2016) also said that mobile websites and mobile email are the two most used Polish businesses when communicating with customers.

The study also analyzed the opinions of Polish business managers for each tool of mobile marketing. According to the survey results of the survey, mobile website, search engine advertising (AdWords), mobile email, newsletter, mobile application, mobile advertising - graphic (Display), SMS / MMS brings benefits that correspond to the expectations business. Meanwhile, the mobile social network is the most incredible tool for management when its services to business operations exceed expectations. Besides, Polish companies also appreciate the role of mobile marketing in enhancing their competitiveness against competitors. This statement has also been confirmed in Sznajder (2013, 2016); thanks to mobile marketing, businesses can reach customers more efficiently and improve their ability to persuade them to buy products/ service. For the development of mobile marketing tools in the future, businesses

have identified social networks and mobile applications as two tools with solid strides. However, mobile email, SMS/MMS are again said to have not made significant progress (Bajdak et al., 2019). Surprisingly, Bajdak et al. (2019), Sznajder (2016) both noted that locators and QR codes are not widely used at present. Still, thanks to their high efficiency and potential their inherent capacity, they will be used more in the long run.

The use of mobile devices is developing more and more critical. As a result, Polish businesses are starting to incorporate mobile marketing activities into their marketing strategy more often (Sznajder, 2013). Through mobile, companies can present offers attractively, personalize the content of their messages (including behavioural, contextual and geo-demographic targeting) effectively with buyers, regardless of their location and time. These advantages allow buyers to engage in marketing and, as a result, arouse positive emotions in them, which is to persuade them to buy and strengthen their relationship with the brand/product (Wiechoczek, 2016).

Mobile marketing in Vietnam

After joining the World Trade Organization (WTO), Vietnamese enterprises have had the opportunity to access more international markets. However, at the same time, Vietnamese businesses also face more challenges. As more international business groups have entered the market, they bring more choices to consumers and create fierce competition challenges for domestic enterprises. Therefore, to gain a competitive advantage, Vietnamese enterprises are forced to constantly develop and innovate appropriate business strategies, including marketing strategies. With constantly changing trends, media consumption in Vietnam has completely changed, and the influence of mobile and digital consumers is undeniable (MMA, 2017). Consumers are forcing digital transformation with mobile devices, and the need for personalized mobile experiences is on the rise. As a result, brands need to reframe mobile marketing to help serve the expectations of the growing consumer group through this transformation. Thus, mobile marketing is no longer a "*new concept*" of the world economy. In Vietnam, the mobile marketing market has been known for the past few years but promises strong growth because of the benefits this service brings. Several experts and businesses have provided their opinions on the mobile marketing market in Vietnam. Table 3.3 summarizes those comments.

Table 3.3. Business and expert opinions on the situation of mobile marketing in Vietnam

Experts	Opinions
Tran Thi Thanh Mai - General Director of Kantar Media. (brandsvietnam, 2015)	Mobile marketing in Vietnam currently takes place the most on instant messaging service applications. In which, Facebook Messenger, Zalo and Instagram are three popular applications used by Vietnamese people. With rapid development, mobile devices are considered potential advertising platforms.
Alan Cerruti - CEO and co-founder of Happiness Saigon, Vietnam. (eztexting, 2015)	Limited viewing availability standards in Vietnam, coupled with a "desire to reach the masses", have led to a demand for advertising on mobile devices.
Rohit Dadwal - Executive director of Mobile Marketing Association Asia Pacific Limited. (Vietnamnews, 2018)	Mobile phones, especially smartphones, have drastically changed the way Vietnamese consumers access media content. This shift is shaping the way businesses across sectors conduct in the marketing world. Vietnamese enterprises are transforming to capture and maximize their mobile marketing efforts.
David Porter - Vice President of Global Media at Unilever Asia, Africa, Middle East, Turkey and Russia. (Vietnamnews, 2018)	Mobile marketing is growing faster than ever. As a result, it has put massive pressure on marketers to rethink their organizational structure to get the best mobile marketing. Vietnam is the center of mobile phone growth.
Nguyen Thu Huong - Sales Director of GAPIT. Communication Joint Stock Company. (adcvietnam, 2019)	Mobile marketing is an inevitable trend in the future to help Vietnamese businesses get out of the way with effective business strategies.
Dang Thai Son - Marketing Director of Appota Corporation. (vietnamplus, 2020)	In Vietnam, online advertising is increasingly dominating the market, especially advertising content on mobile devices in the coming years. Therefore, this is fertile ground for advertisers and digital content marketers.
Thue Quist Thomasen - Founder của Decision Lab. (Brandsvietnam, 2015)	Brands in Vietnam face a huge opportunity to reach out to their consumers through a personal device they always carry, the mobile phone. We need more research to get a strategy for each category, not just transferring digital marketing strategies to mobile phones.

Source: own study.

Through expert opinions, it can be seen that Vietnam is a "*land of opportunity*" for mobile marketers. There are many reasons for this statement. Firstly, the number of people using mobile phones is enormous, with over 154.5 million mobile connections. Second, Vietnamese businesses started investing heavily in their mobile marketing activities. Investments in this form have increased gradually in recent years. As of September 2018, mobile ad spend has amounted to approximately US$136.1 million. By 2019, the mobile ad will grow to US$190.6 million and US$211.6 million for 2020. Spending on this is predicted to continue to grow, can reach 227.4 and 242.2 million USD in 2021, 2022, respectively (Statista, 2019). Third, ad-blocking apps in Vietnam have not had much impact on mobile marketing. Specifically, Apple's iOS has been released with an ad-blocking function. However, in Vietnam, consumers use the majority of Android phones. These phone lines account for 59.52% of Vietnam's mobile operating system market share (Statista, 2020). Android's default browser, Chrome, doesn't accept ad-blocking plugins like Safari can do today. On mobile devices, content is mainly used in apps compared to

mobile browsers. Apple's ad-blocking feature only covers ad blocking on its mobile browser, Safari.

Vietnamese businesses still have a lot of work to do to apply mobile marketing successfully and effectively. Tran Thi Thanh Mai- General Director of Kantar Media, has emphasized that *"users are the central factor marketers need to focus on exploiting. Users are fully active in deciding whether to view or ignore ads on online platforms. Therefore, to effectively communicate via mobile devices, the transmission method and the content of Vietnamese businesses require creativity to attract users*." (brandsVietnam, 2015). According to Porter - a vice president at Unilever Asia: "*Vietnamese advertisers and publishers are looking for ways to provide a more seamless experience for their users. They are looking at more targeted and relevant multimedia, video and ads. All of these changes are happening right now, and the industry is working together to find the right balance between monetization and user experience*." (Vietnamnews, 2018). Vietnamese brands must be prepared to satisfy customers wherever they are. Therefore, they should have genuinely mobile-ready content, including optimizing the site for mobile devices, pre-organizing media and advertising groups to build mobile-appropriate content.

Mobile marketing development trends in Vietnam focus on online video and mobile apps: mobile social networks, shopping apps and instant messaging apps. They consume more online video content than offline video/T.V. content and than any other country in the world. Importantly, they enjoy viewing this video content on their mobile devices (MMA, 2017). This action is supported by the fast and reliable 3G/4G network infrastructure, the pervasive free WiFi ecosystem in Vietnam. Besides, mobile commerce is growing strongly. People who use shopping apps (e.g. Shopee, Lazada, Tiki, etc.) at least once a week jumped to 61% from 31% in 2019. Shopee is the most used online shopping app in Vietnam, with 49% of a market share (qandme statistics, 2020). Mobile commerce facilitates cost reduction, efficiency improvement and commercial linkages among Vietnamese enterprises. Realizing the critical role of m-commerce, both the Government of Vietnam and the Vietnam E-commerce Association have actively supported and facilitated the development of m-commerce through the development of a series national policies. In addition, they also participated in programs to improve the economic environment (Chau & Deng, 2018). These changes also contribute to the development of mobile marketing in the Vietnamese market.

To sum up, it should be noticed that the above Figures partly reflect the mobile market in Poland and Vietnam:

- In terms of mobile usage data, Vietnam is somewhat superior when it has 154.4 million mobile connections, Poland reaches 51.84 million. However, if compared with the populations of both countries, the number of mobile connections in Vietnam and Poland is equivalent to 157.9% and 139.5% of the total population, respectively. This result shows considerable growth potential in the mobile sector in both countries.
- Polish and Vietnamese mobile users' favourite activities are making calls, scanning QR codes and making mobile payments.
- It is important to note that Vietnam leads in the number of downloaded applications, but it's Poland with impressive mobile app spending.
- Users in Poland and Vietnam prefer applications related to social networks, chat applications, shopping and entertainment applications. However, the Poles access the Facebook while the Vietnamese prefer the TikTok application. Popular chat applications in Poland such as Snapchat and WhatsApp are not used much in Vietnam, instead of Zalo or Facebook messenger applications.

It can be seen that mobile devices and their applications are increasingly playing a particular role in people's lives and gradually changing their behaviour. Both Poland and Vietnam have the potential to develop this market. However, the two countries have distinct characteristics. So, capturing this trend, marketers can adjust their marketing strategies accordingly and achieve the desired effect in each country. Businesses must establish communication with potential customers to convey information regarding new brands, enhanced product ranges, new goods and services. Such communication is to reach the right target audience effectively and contribute to more effective preparation of marketing campaigns, in a structured way with direct and higher profit. Besides, consumer behavior in the mobile environment is very different. Therefore, the task of businesses needs to understand the factors that affect consumer behavior on the positive and negative side. Thereby, businesses can integrate media in their mobile strategy (Pelet & Papadopoulou, 2014).

3.4. Cultural context of the research – comparative analysis of Polish and Vietnamese culture in regard to mobile marketing acceptance

Ensuring the effectiveness of mobile marketing activities still requires thorough analysis. The level of use of mobile marketing media and the success of businesses in this area largely depends on consumers' attitudes and acceptance of the means used (Bajdak et al., 2019). Understanding its importance, studies on customer attitudes and acceptance towards mobile marketing in Poland and Vietnam have received more and more attention. The studies provide a comprehensive picture of customer behaviour when approaching mobile marketing in the two countries.

Bajdak et al. (2018) conducted a study on young people's attitudes in Poland towards various forms of mobile marketing. The results show that young people in Poland have a positive attitude towards mobile applications, followed by mobile coupons and mobile websites. The authors found that these tools bring a lot of value to customers, such as speed, time-saving, multitasking, accessibility and convenience, and simplicity and security. Meanwhile, SMS/MMS received negative feedback as respondents felt the messages provided content that did not match their needs and sometimes included hidden fees. However, the authors also highlighted that up to 50% of the interviewees were satisfied when receiving messages related to coupons. Thus, it can be seen that for the form of SMS/MMS, the content they contain has a particular influence on the attitudes of young people in Poland. Besides, three benefits are appreciated when customers reach out to mobile marketing, which is better awareness of upcoming promotions, ease of interaction, and quick access to information. Finally, Bajdak et al. (2018) provided that the main barriers to adopting mobile marketing tools are:

- Intrusiveness;
- A high volume of incoming calls/messages;
- Security concerns about the collection of personal information.

These barriers have also been identified through the studies of Lian and Yen (2014), Moorthy et al. (2017), Gupta and Arora (2017). Research by Gwiaździński (2019) also found that mobile applications are the most appreciated tool by those surveyed in Poland (born 1990 onwards). Mobile social networking sites and QR codes are the following most positively reviewed tools. This is due to the widespread use of these tools by brands and the relatively long

lifecycle of the technology. Moreover, mobile applications, QR codes have been on the market for quite some time, and consumers have become familiar. This finding is somewhat different from the study of Bajdak et al. (2018) because the respondents have an apathetic and reluctant attitude towards QR codes. The reason is that due to the need to install specialized software, marketers use them inefficiently. In addition, Gwiaździński (2019) also examines consumer attitudes towards several advanced mobile marketing tools such as Augmented Reality and iBeacon. For the people surveyed, the two tools above were still new; their awareness was not high. However, these two tools still have application potential. Businesses must use them to provide and disseminate to customers the knowledge and value they will bring to customers.

Following the results of the study of Gwiaździński (2019) as well as Gregor and Gwiaździński (2019) compared the opinions and attitudes of three Generations X, Y, Z in Poland towards mobile marketing tools. All three Generations surveyed had similar and very high ratings of mobile applications and mobile social networking sites. However, QR codes are different; people in Generation X had good image of this tool, while those in Generation Y and Z did not appreciate its effects. According to the survey results of the authors, only Generation Z agreed that QR codes change their attitudes towards brands. NFC and iBeacon technologies are known to only about 50% of respondents from all three generations. Moreover, the authors have deeply analyzed the behaviour of three generations X, Y, Z towards tools. Only millennials were willing to recommend social apps to others. Generations X and Z were all ready to introduce mobile social networking sites. However, iBeacon was a tool that all three generations would not recommend to their friends or acquaintances.

Regarding the compelling influence image, both generation Y and Z representatives have noticed the effectiveness of mobile social media marketing activities. On the other hand, both of these generations believed that using QR codes does not change their attitudes towards brands. Most surprising, the effectiveness of NFC technology in changing attitudes towards the brand was claimed by representatives of all three generations. In particular, iBeacon gave respondents who find it difficult to express their views on it. The reason may be that iBeacon has not been popularized much at the time of the survey. It was low awareness and knowledge that affects customer attitudes (Gregor & Gwiaździński, 2019). Thus, it can be seen that the perspective and acceptance of mobile marketing is very different in each generation X, Y, Z in Poland. For each

medium of mobile marketing, their perceptions are also uneven. Therefore, to enhance the effectiveness of mobile marketing media, awareness of these forms should also be noted.

Meanwhile, Vietnamese consumers surveyed have a neutral attitude towards all forms of mobile marketing. In the study by Le and Nguyen (2020), users responded with no positive emotions when seeing ads. Still, most of them agreed that mobile advertising helped them collect information about product/service. However, when asked about the use of advertising information on mobile devices to make purchasing decisions, most Vietnamese consumers have chosen to hesitate or disagree. Explaining this, the two authors argued that many consumers did not believe in mobile advertising because advertising tries to present perfection and does not provide truthful information. Therefore, they only used the information in mobile advertising for reference. Regarding the factors affecting the attitudes of Vietnamese consumers, Le and Nguyen (2020) stated that reliability and entertainment are the two main factors. Vietnamese consumers appreciate the importance of trustworthiness. The two authors further explained that assurance policies of companies in advertising are necessary to enhance consumer confidence. Although not as important as trust, entertainment still made a specific contribution to Vietnamese people's attitude and acceptance towards mobile marketing. Fun and enjoyment are the elements of entertainment. The more entertaining mobile marketing is, the more engaging they are.

Le and Wang (2020) discovered that personalization, financial benefits, and trust affect Vietnamese consumers towards location-based advertising on mobile devices. Personalization is a significant factor influencing consumer attitudes. Mobile marketers that integrate relevant user information to deliver tailored marketing messages are generally better received. In addition, research results intimated that Vietnamese consumer value the financial benefits that mobile marketing brings to them. As a result, perceived encroached risk was underestimated because users' perception of compensation was more valuable for sacrificing risk in mobile marketing. This can also be a solution for Vietnamese businesses to minimize consumers' worries about risks. Unlike the study of Le and Nguyen (2020), entertainment value did not have much impact on Vietnamese people when exposed to location-based ads on mobile devices. Perceived risk of being compromised negatively affects attitudes. The authors believed that the traditional and oriental cultural characteristics of Vietnam significantly affect the indigenous people's perception, belief, and lifestyle. Therefore, the fear of disclosure, misuse of personal information eroded their level of trust and readiness. As a result, these effects caused them to negate the

mobile marketer's efforts. For mobile applications, such as banking applications, the most affected attitude of Vietnamese consumers is the PEOU factor (Bui & Ngo, 2020). Vietnamese consumers are timid when they have to manipulate a lot of banking applications, and they are not satisfied when the interface of the applications is too confusing and complicated. These obstacles have reduced their experience. Besides, like the research on mobile marketing in Vietnam, Bui and Ngo (2020) also revealed that the trust factor is the second factor that significantly impacts attitude and intention to use mobile banking applications. In this case, trust and safety are concerned with personal information and security and confidentiality related to consumer finances.

Besides, Vietnamese consumers are also affected by subjective opinions. Subjective norms are defined when customers consider the normative expectations of others they consider as essential, such as family, friends and co-workers, etc. Through those opinions, they decide whether they use technology or not (Bui & Ngo, 2020). The acceptance and application of advertising on mobile devices by Vietnamese people in shopping are still low; most of them rely heavily on the advice of family and friends (Le & Wang, 2020). In the study, Bui and Ngo (2020) emphasized that Vietnamese people often use banking applications recommended by friends or relatives. These findings represent a feature common to collectivist societies like Vietnam. The authors also conducted their analysis and found that PEOU and PU positively affect subjective norms. This means that if businesses can improve the perceived ease of use and perceived usefulness of mobile marketing, they can promote subjective norm.

3.5. A conceptual framework of the research and the development of the research hypotheses

Research questions

This study focuses on answering the following questions:

1. Which factors in the research model influence Generation Z’s acceptance of mobile marketing in Poland and Vietnam?
2. Does culture determine the acceptance of mobile marketing?
3. How to propose the concept of mobile marketing activities for Generation Z in Poland and Vietnam?

Main objective

The main aim is to assess the determiners that influence of acceptance of mobile marketing by Generation Z in two different contexts: Poland and Vietnam and to propose mobile marketing activities for Generation Z in Poland and Vietnam. The relation between dimensions of mobile marketing acceptance and culture is explored.

Detail objectives

The following specific goals have been subordinated to main goal:

- Exploring the perceived usefulness affecting acceptance by Generation Z of mobile marketing in Poland and Vietnam.
- Identifying perceived ease of use affecting acceptance by Generation Z of mobile marketing in Poland and Vietnam.
- Analyzing the influence of brand trust on acceptance of Generation Z of mobile marketing in two countries.
- Identifying the information value impacting on acceptance by Generation Z of mobile marketing in two countries.
- Exploring privacy affecting acceptance by Generation Z of mobile marketing in Poland and Vietnam.
- Proposing the concept of mobile marketing activities for Generation Z in Poland and Vietnam.

The development of the hypotheses

Based on the theoretical model presented in Figure 2.7, the research hypothesis is built. In technology acceptance research, hypotheses are built to show the relationship between model variables (Venkatesh & Davis, 2000). Research hypotheses will allow to test every single relationship between the variables in terms of probability value (i.e. significance level) and normalization coefficient (i.e. predictive value). This approach is common in contributive research, where research hypotheses are proposed first and then tested. The following sections will prove the research hypotheses for each of the identified variables. Figure 3.4 shows that the developed model relationships and the proposed hypotheses were structured.

In the proposed theoretical framework (see Figure 3.4) PU, PEOU, IV, BT and privacy are included. This study is also examining the culture effects on these constructs. In other words, the Author is trying to find cultural influences on the Extended Technology Acceptance Model (ETAM), whether they lead to different behaviours at various levels of dimensions that will be defined in this study for each construct or not. And most importantly, it is about understanding the factors affecting customer acceptance of mobile marketing in different cultural contexts (Polish and Vietnamese) (see Figure 3.4). From there, information for managers and marketing in attracting and encouraging customers to participate, thereby improving the effectiveness of the m-marketing strategy were provided.

Therefore, the main hypotheses of this study are:

H0a: The ETAM model has a positive and significant impact on customer's acceptance of mobile marketing.

H0b: Culture determines significantly the impact of ETAM factors on mobile marketing acceptance. It is higher in Poland than in Vietnam.

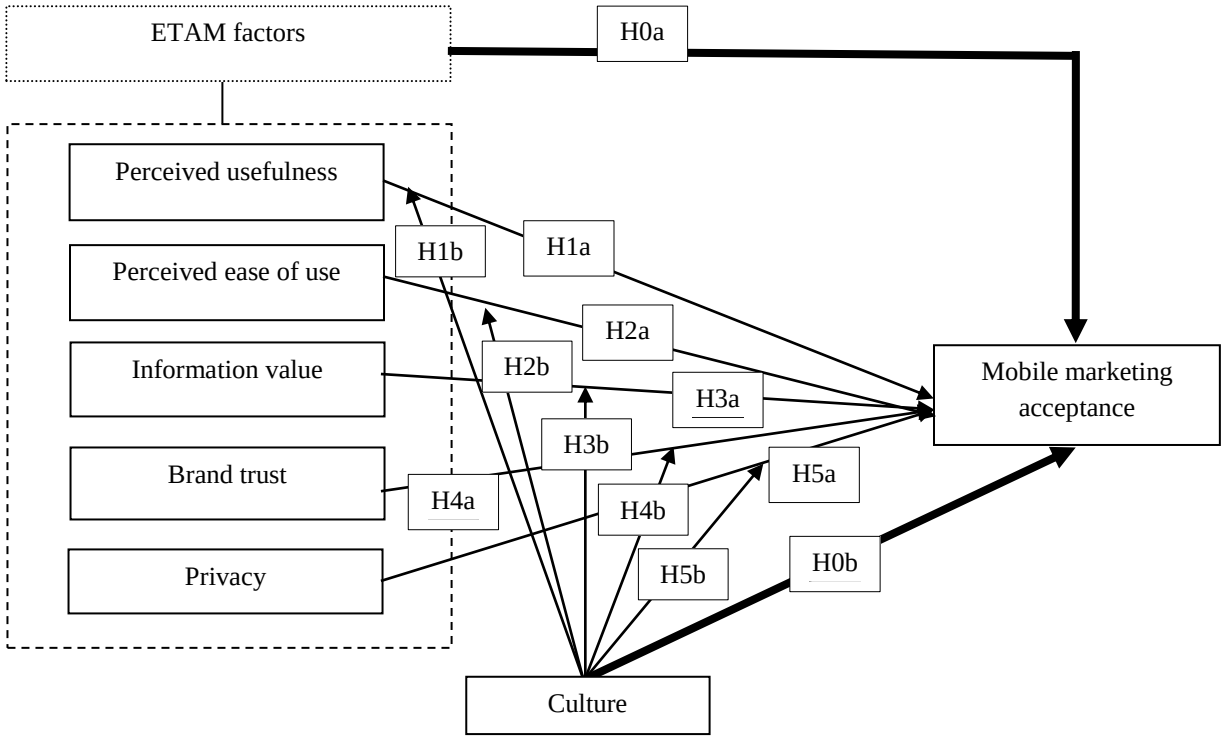

Figure 3.4. The theoretical framework
Source: own study.

Perceived usefulness (PU)

Perceived usefulness is one of the independent constructs in the Technology Acceptance Model (TAM). Within the framework of TAM, PU is hypothesized to be a direct predictor of technology's intention-to-use (BI) behaviour (Park et al., 2014). Previous studies have shown that PU is positively associated with intention to use, such as electronic text (Baker-Eveleth & Stone, 2015), instant messaging (Wang et al., 2011), mobile service providers (Abbas & Hamdy, 2015), online travel services (Li & Liu, 2014), e-learning (Lin & Wang, 2012), knowledge generation (Chou et al., 2009). PU has a significant impact on user attitudes, having a relative effect on user acceptance and satisfaction (Morosan, 2012; Detlor et al., 2013; Hess et al., 2014).

The importance of usefulness as an antecedent of intension to use a computer system has been noted in previous studies (Venkatesh & Davis, 2000). PU refers to the extent to which target customers believe that using IT will create significant value for them; this statement also positively affects users' intention to use that system (Rouibah et al., 2011). Besides, PU is one of the basic premises of innovative use, for example, what convenience value does mobile technology provide to customers (Revels et al., 2010). It is illustrious that usability is a yardstick to judge the remarkable quality of a mobile phone. As a result, usefulness has become increasingly important in the mobile phone industry (Heo et al., 2009). In mobile marketing, PU refers to how consumers perceive the use of mobile marketing services as beneficial to them in their daily lives (Saeed & Bekhet, 2018). Specifically, consumers can receive discounts, and special offers, which enables them to save money or mobile marketing messages may also provide helpful information regarding products and services, which might increase consumers' shopping efficiency. As a result, consumers perceive that they obtain value from mobile ads, making them more inclined to accept the ads (Billore & Sadh, 2015). Persaud and Azha (2012) highlighted the significant impact of PU on mobile marketing adoption. Agreeing with the above point of view, Saeed and Bekhet (2018) pointed out PU significantly influences young customers' attitudes towards mobile marketing services, leading to increased usage intention towards this form.

Murillo-Zegarra et al. (2020) have shown that PU is associated with functional and convenience benefits when using mobile applications. The authors analyzed the relationship between PU and users' perception of value. Thereby, PU is the strongest predictor of perceived value. The benefits and conveniences that technology brings with shopping on mobile apps will

influence the user's perception of value. As perceived value increases, user attitudes towards mobile applications also increase. Sohn (2017) suggested that PU perception describes the extent to which consumers believe that using an online store on a mobile device will enhance their shopping task performance. In addition, in this study, the results show that perceived PU varies with context. For example, when consumers rate mobile retail stores that offer clothes, PU is more potent for information retrieval than event ticketing sites. Therefore, Sohn (2017) affirms the consumer's perception of how valuable a mobile online store is based on the product category. Afzal et al. (2015) studied the determinants of consumers' intention to use SMS in Pakistan. Through data analysis, PU is the main predictor of SMS adoption in Pakistan. This result is consistent with many studies, Chan et al. (2008) confirmed that PU is the strongest predictor of intention to use any system. PU has a positive relationship with SMS usage behaviour, and it is also a strong driver of intent to use text messages (Nysveen et al., 2005; Kim et al., 2008).

Culture is a standard value system in which individuals interact differently, leading to significant interpersonal differences between countries (Schwartz, 2014). Nevertheless, no studies are comparing perceived usefulness in the mobile marketing landscape in Poland and Vietnam until now. In individualist cultures, social relationships tend to be formed around tasks, activities, and work (Phan, 2004, p. 291). It is, therefore, possible that individualist cultures may be motivated by beliefs about how mobile marketing can help improve job performance, which is central to PU. Li et al. (2010) also found that usefulness was an essential predictor of technology use for individualist countries but not for collectivist countries. In the previous section, Poland is an individualist country while Vietnam is a collectivist country. Basing on the above mentioned the following hypotheses are proposed:

H1a. PU has a positive and significant impact on customer acceptance of mobile marketing.

H1b. Culture determines significantly the impact of PU on mobile marketing acceptance. It is higher in Poland than in Vietnam.

Perceived ease of use (PEOU)

Drawing from the information technology (IT) literature, PEOU has been identified as a critical structure for testing and assessing user acceptance of a particular technology (Amin et al., 2014). Revels et al. (2010) highlighted PEOU as an essential driver of consumer intention to use

technology. PEOU generally refers to the user's perception of whether performing a particular technical task requires mental effort on their part (Rouibah et al., 2011). Wang and Ha-Brookshire (2018) stated that PEOU relates to the extent to which users believe that using a particular technology will be easy and uncomplicated. Morosan (2012) suggested that users adjust their behaviour to new technology if they find it easy, referring to PEOU. Furthermore, many researchers argue that PEOU is considered an essential factor for adopting technology, but it also influences long-term use (Saprikis et al., 2018).

Many previous studies have believed that PEOU has an important impact on IT customer perception and usage behaviour (Lanlan et al., 2019). In the context of mobile services (e.g., mobile shopping, mobile learning, mobile text messaging, mobile payments, mobile games and mobile entertainment), consumers found mobile services more beneficial when these services provide them with a friendly environment (Sang Ryu & Murdork, 2013). Yadav et al. (2016) confirmed a significant impact of perceived ease of use on consumers' intention to use mobile commerce. In addition, Yu and Buahom (2013) presented its positive effects on the behavioural intention of m-services. Agarwal and Karim (2015) found that PEOU had a significant impact on intention to use m-coupon.

Besides, Ohk et al. (2015) explored that the relationship between PEOU and user satisfaction in influencing the acceptance of mobile applications. Through the collected results, the authors concluded that the more manageable the user experience, the greater the pleasure. The more satisfied users are with mobile apps, the more likely they are to use them. Consumers claimed that they have no difficulty accepting m-marketing services and believe that using m-services will be effortless (Saprikis et al., 2018). Pan et al. (2015) stated that users' impression of mobile marketing is that it brings many benefits to their daily life and is easy to use. Since then, PEOU has a significant influence on intention to use mobile marketing services. If other variables are held constant, the easier the technology is to use, the higher the likelihood of user adoption (Saprikis et al., 2018). Additionally, Grewal et al. (2016) noted that the growth motivating factors of mobile marketing are determined by PEOU, which is a convenience provided to those with secure Internet access.

In addition, PEOU also affects other factors in the technology acceptance model. The positive effects of PEOU on PU and consumer attitudes have been widely documented in studies using TAM in different contexts (Leong et al., 2011; Bouwman et al., 2012). Ozturk et al. (2016)

specified PEOU as a self-determining factor to consider the impact on users' mobile hotel booking intention. They also found that PEOU had a strong influence on loyalty and comfort. Mutahar et al. (2018) explore user acceptance of mobile applications in the banking sector. The authors analyzed the opinions of mobile banking users in Yemen. The findings have shown that PEOU has a significant positive direct influence on users' intention to use mobile banking. Also, PEOU mediates the relationship between self-efficacy and intention.

Studies have found inconsistent findings when contextualizing technology acceptance theories and models in different cultures and contexts (Huang et al., 2019). Tarhini et al. (2015) studied technology acceptance among Lebanese and British university students. They found that PEOU is only important for students in the UK. Srite (2006) argues that PEOU is less critical in a collectivist culture. In the context of mobile marketing, studies have also identified differences in the impact of PEOU on users across different cultures, most notably between the West and the East (Qin et al. 2018; Muk & Chung, 2015). Therefore, the hypotheses proposed are as follows:

H2a. PEOU has a positive and significant on customer acceptance of mobile marketing.

H2b. Culture determines significantly the impact of PEOU on mobile marketing acceptance. It is higher in Poland than in Vietnam.

Information value (IV)

Most mobile marketing uses are concerned with providing information to send or receive (Al-Meshal & Almotairi, 2013). The first goal of mobile marketing is to inform the end-user. The majority of consumers are looking to communicate directly to receive information (David et al., 2002). Kim et al. (2016) asserted that informativeness is one of the most fundamental attributes that all forms of marketing have. The reason is that the ability to describe a product in detail and provide the necessary information is an essential clue to the perceived value of marketing to consumers. Consumers perceive marketing as informational and value-creating, which, in turn, positively affects their attitudes toward marketing campaigns. Many studies have identified the dimension of marketing-related information, commonly referred to as information, accepted as a significant factor that creates value for consumers and influences consumers' attitudes towards marketing (Ünal et al., 2011; Aydin & Karamehmet, 2017). Furthermore, Aydin and Karamehmet (2017) stated that providing information with information quality

characteristics, such as correctness, timeliness, and usefulness, is a primary and vital marketing function.

In mobile marketing, providing timely and relevant product information influences consumers' attitudes towards mobile advertising. Kim et al. (2016) emphasized that information in mobile marketing offers users the ability to make informed judgments about future purchases. At the same time, the user's perception of this favourable aspect leads to the formation of a positive attitude towards this form. The authors also suggest marketers need to focus on marketing information and credibility. However, Kim et al. (2016) have indicated that personalized information has no impact on users' attitudes towards mobile marketing. This result contrast with previous studies. The effect of the personalization of data in mobile marketing may vary with user intent. Personalization has a higher impact when information gathering is the primary goal than when the user is closer to a purchase decision (Liu-Thompkins, 2019).

In the study by Aydin and Karamehmet (2017), they compared the impact of informativeness on user intention and attitude towards two forms of mobile marketing, namely SMS and mobile application. Through the evaluation of the results, the two authors concluded that informativeness is the second most crucial criterion in attitude-forming advertising and the third most important for advertising value for SMS. This factor has been ranked as the third most important factor in shaping ad value and attitude for mobile apps. Young consumers' attitudes towards mobile advertising are significantly influenced by the perceived informativeness of mobile advertising (Sharif, 2017). Advertisers provide valuable and timely information that can capture the interest of young consumers. It is not surprising that consumers are not upset if marketers present advertisements with relevant details (Chowdhury et al., 2010).

Haghirian et al. (2008) compared the effects of informativeness on Austrians and Japanese. They discovered that the advertising messages on Austrian mobile phones were mainly informational. The Japanese companies strongly promoted mobile advertising as a means of entertainment from the beginning. Austrians seem to appreciate and value informative advertising messages to a greater extent than Japanese. The authors argued that this difference stems from cultural differences between mainly individualist Austrians and mainly collectivist Japanese. Koo et al. (2012) also have a similar opinion. The authors assessed the impact of informativeness on Americans and Koreans in the context of mobile advertising. US consumers live in a culture of individualism that prefers messages that convey information clearly and

concisely. Therefore, American consumers value information in mobile advertising more than Korean consumers. Muralidharan et al. (2015) also suggested that entertainment influences Indians' attitudes towards smartphone advertising while informativeness is vital for the American sample. Thus, the hypotheses were proposed:

H3a. IV has a positive and significant impact on customer acceptance of mobile marketing.

H3b. Culture determines significantly the impact of IV on mobile marketing acceptance. It is higher in Poland than in Vietnam.

Brand trust (BT)

Trust as a widely accepted primary component of human social relationships has been studied in many different scientific disciplines, such as psychology, sociology, economic science, or IS research (Janson et al., 2013). The most common definition of trust is suggested by Mayer et al. (1995), it is used by many IS studies (Söllner et al. 2011b). Mayer et al. (1995) defined trust as: "*willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party*." More specifically, trust is seen as a customer privacy concern and expectation that an online business organization will protect customer information and prevent its leakage to third parties (Menon, 2019). In the previous research literature, trust can be assessed by examining consumers' perception of their likeability. In the context of mobile marketing, consumer trust in mobile marketing can be measured in a variety of ways (Shareef et al., 2017). For mobile marketing, trust relates to the importance, value and usefulness of advertising, customer's thoughts about using innovation in terms of positive/negative point of view, good idea/wrong or stupid/wise, and their sense of accomplishment when using a particular invention (Eneizan et al., 2019).

Dix et al. (2016) identified trust issues as a significant obstacle to mobile marketing adoption and loyalty development. Consumers often feel unsafe when making transactions and sharing personal information via mobile devices. Jung et al. (2020) also highlighted how trust plays a vital role in mobile marketing adoption. Gana and Koce (2016) stated that user imagination and privacy risks would reduce the intention to use mobile tool marketing. Huang (2012) explored and examined the success factors of mobile marketing based on the information systems (IS) success model of Delone and McLean. He identified 23 mobile marketing success

factors from the document; 31 international mobile marketing experts participated in scoring and categorizing these factors. The results indicate that brand trust is an essential factor in the success of mobile marketing. Menon (2019) examined and explained the critical determinants of purchase intention for mobile banking services in India. The author has divided trust into two distinct elements, namely personal trust and institution trust. Through the analysis, the author has found a solid and positive relationship between banking trust and the intention to buy and use mobile services of banking institutions. Persaud and Azhar (2012) investigated consumers' willingness to accept marketing through their smartphones. According to the analysis results, consumers' shopping style, brand trust and values were the main drivers of mobile marketing. Amoroso (2013) explored the importance of organization-based trust for the adoption of mobile shopping apps. The author has found that higher levels of organization-based trust led to higher satisfaction levels when shopping online using a mobile device. This impact stimulated the acceptance and adoption of mobile shopping applications.

Wang et al. (2017) aimed to examine the factors influencing tourist acceptance of mobile marketing in China and Kazakhstan. A cross-market comparison of mean scores for key variables highlighted some of the differences between China and Kazakhstan. Respondents in China indicated greater trust in their mobile devices and a higher attitude towards mobile marketing in general than respondents from Kazakhstan. Merhi et al. (2019) explored the key factors that could hinder or create favourable conditions for the adoption of mobile banking services in a multicultural context. In it, they compare the impact of trust on British and Lebanese consumers. Through analysis, trust has a significant effect on the adoption of mobile banking services by consumers in the two countries. However, the impact is higher for the British than for the Lebanese. Wang et al. (2019) investigated how attitude, trust, and privacy concerns influence mobile advertising effectiveness in a cross-cultural context, including China and the US. The study's data found that trust effects attitudes towards mobile marketing in China more strongly than in the United States. This result seems surprising given previous studies that the United States is a society based more on trust between the two. De Cremer (2015) stated that trust becomes a norm and default in individualist cultures like the United States. In contrast, in Chinese society, distrust is a default. Following this reasoning, it can be argued that since trust is not guaranteed in China, it has more of an impact on China's attitude towards mobile advertising. Vietnam has a culture of collectivism and Confucianism like China. Thus, the effect of trust is

different on the acceptance and attitude towards mobile marketing in Poland and Vietnam. The following hypotheses are proposed:

H4a. BT has a positive and significant impact on customer acceptance of mobile marketing.

H4b. Culture determines significantly the impact of BT on mobile marketing acceptance. It is lower in Poland than in Vietnam.

Privacy (P)

Privacy is the degree to which personal information is not known to others. In the online environment, privacy relates to individuals' awareness and control over collecting and using personal data (Zhu et al., 2017). It can be considered that privacy is a boundary-control process by which individuals can determine who they communicate with and what type of communication they do (Basak et al., 2018). In addition, the notion that privacy can be conceptualized as a commodity that can be traded has become widespread (Zhu et al., 2017). It must be remembered that an individual's decision to be willing to disclose personal information is made by balancing the risks of revealing information with the benefits that sharing this information can bring to them (Keith et al., 2013). The sharing of personal data is increasing in contemporary life, leading to a change in consumer behaviour.

The issue of privacy is a significant challenge for businesses trying to maximize the use of the mobile environment to their benefit. Competition in the global market has highlighted the importance of consumers' privacy concerns as they are better aware of and equipped with the tools to verify business claims (Gana & Koce, 2016). So, it can be said that the advancement in mobile technology has created new marketing opportunities for entrepreneurs, but it has also led to related issues regarding consumer privacy concerns. In the context of mobile marketing, privacy includes users' concerns about losing control of the personal information provided when they use this form. These concerns include collecting, using, storing, and disclosing personal information, location tracking, and unsolicited advertising (Featherman & Pavlou, 2003). From the consumer's perspective, the invasion of privacy and general security concerns associated with mobile marketing media have been recognized as some of the significant barriers affecting consumer acceptance of mobile marketing (Donga et al., 2018).

Reith et al. (2019) show a significant influence of privacy concerns on using mobile payment applications. The authors have also highlighted consumer demand for responsible use

and storage of their data. They, therefore, suggested to marketers to alleviate consumer privacy concerns by claiming to handle personal data securely in promotional messages. Keith et al. (2013) revealed that increased perceived privacy risks from new mobile applications would reduce an individual's intention to disclose personal information. This will affect the choice to use the app. Meanwhile, Worku et al. (2020) found that privacy positively impacts mobile marketing acceptance among university students in Ethiopia. To account for this result, the authors stated that a text or message sent without a student's prior permission is considered a threat to their privacy. The more students find that their willingness to accept texts is checked, the more their privacy is protected. Therefore, the ability to accept mobile marketing is also higher. Menon (2019) has also suggested a positive and essential relationship between banking application privacy and customer acceptance of mobile banking applications.

However, Ashraf and Kamal (2010) and Gao et al. (2012) did not find privacy impact on consumer acceptance. Gao et al. (2012) examined the factors influencing consumer attitudes towards mobile marketing across two major markets — the United States and China. The results provided that privacy did not affect consumer attitudes in both countries. Ashraf and Kamal (2010) evaluated the acceptance of mobile marketing among university students in Pakistan. They found that the impact of privacy on mobile advertising was not significant in the regression analysis.

Culturally, many studies have identified it can influence the relationship between mobile marketing acceptance and privacy. Ozdemir et al. (2016) reported that cultural values have a clear impact on users' views on privacy in three countries Singapore, Sweden and the United States. Merhi et al. (2016) compared the effect of privacy on using mobile banking applications between Lebanese and British consumers. As a result, privacy impacts consumer intentions in the two countries, with the main effect being observed in the British sample. In a study by Chopdar et al. (2018), Indian consumers were wary of privacy threats related to them-shopping environment. Meanwhile, privacy did not have a significant impact on US consumers' acceptance of mobile shopping apps. Bellman et al. (2004) attempted to account for differences in Internet privacy concerns between different countries. The authors found that countries with a high index of individualism are less likely to have privacy concerns. Poland has higher index of individualism than Vietnam. Thus, based on existing research, consumers from Polish and

Vietnamese cultures may approach privacy and acceptance differently with mobile marketing. The hypotheses were proposed:

H5a. P has a positive and significant impact on customer acceptance of mobile marketing.

H5b. Culture determines significantly the impact of P on mobile marketing acceptance. It is lower in Poland than in Vietnam.

CHAPTER IV
RESEARCH METHODOLOGY

This chapter described the research method chosen to test the hypotheses and validate the research model used to investigate the acceptance of Generation Z for mobile marketing in Vietnam and Poland. This chapter begins by presenting the research process. Whereby a discussion of the chosen method - deductive approach was provided. Next, a discussion of sample size and definition was given. Moreover, this chapter then explained the analytical technique employed in the research, namely the quantitative method. Finally, the data collection procedures were explained.

4.1. Research process

In research, there are two reasoning processes, inductive and deductive. Induction is "*a process where we observe certain phenomena and, on this basis, arrive at conclusions*" (Sekaran, 2003). Inductive research begins with an investigation by observing a phenomenon then tries to explain it through developing a theory or a hypothesis. The inductive method follows phenomena to understand the nature of the problem. Based on these observations, ideas or hypotheses can explain the phenomena. Meanwhile, deduction refers to "*a set of techniques for applying theories in the real world to test and assess their validity*" (Lancaster, 2005). Deductive research is a top-down approach in which developed theories and hypotheses can be accepted or disproved through empirical observation. Furthermore, qualitative research is mainly suitable for inductive research, while quantitative research for hypothesis testing is related to deductive research (Teddlie & Tashakkori, 2003). The study aims to develop a technology acceptance model to explain Generation Z's acceptance of mobile marketing in Poland and Vietnam; therefore, this study follows a deductive research approach. The survey carried out four main steps:

1. Theory/hypothesis formulation: The first step is to form a theory or hypothesis based on the researcher's ideas and literature review. The acquired knowledge can be

logically integrated to solve the research problem. For this study, a literature review was performed to investigate current research in technology acceptance.

2. Operation: All concepts used in theories or hypotheses must be precisely defined to be measured. This process is necessary to eliminate confusion about what will be calculated and how these measurements will be taken. This study developed a model to explain mobile marketing acceptance by Generation Z. The model consists of 6 variables, and 12 hypotheses govern their relationship. Furthermore, all variables were identified along with their measurement items.
3. Theoretical test/experimental observation: This phase deals with research methodology and design, such as sampling procedure, data collection, analytical methods, and interpretation of results.
4. Accept or reject the theory: The theory or hypothesis can be refuted or accepted based on the research results. This study will use EFA analysis through SPSS 22 and structural equation modelling (SEM) through IBM AMOS to perform confirmatory factor analysis and multiple regression analysis. The investigation results were for the developed model, and the proposed hypotheses were discussed and evaluated.

4.2. Quantitative methods

Quantitative research is a form of research based on the methods of the natural sciences, generating numerical data and facts (Ahmad et al., 2019). It aims to build a cause-and-effect relationship between two variables using mathematical, statistical and computational methods. Research is also known as empirical research. The figure collected by the researcher can be divided into categories or ranks, or it can be measured in units of measure. There are many reasons for using quantitative research methodology in this study:

- Quantitative methods are used to test/evaluate theories, while qualitative methods are used to develop them. Quantitative research is the recommended method for deductive studies (Surbhi, 2018).
- Collected data are statistically analyzed and, if found to be reliable, the findings can be generalized to the study population (Creswell, 2008). Quantitative methodologies can handle big data needed to prove or disprove theories scientifically.

- The quantitative approach collects information to explain a phenomenon or relationship across a more significant number of participants (Ben-Eliyahu, 2014). Accordingly, it provides the ability to summarize characteristics between groups or connections that can then be analyzed statistically. This approach addresses a large number of participants and assists researchers in recognizing overall patterns in relationships. When considering the objectives of this study, quantitative methods were considered the most appropriate.
- Qualitative research is exploratory, and it is useful when the researcher is not sure what the essential variables to test are (Creswell, 2008).
- The most appropriate technique for examining technology adoption at the individual level is survey research, while case studies at the organizational level are more suitable. Furthermore, survey questionnaires represent an appropriate method when researchers aim to collect data from many individuals and wish to obtain standard data by using a set of questions for all participants. This research expects to find out the factors contributing to the acceptance of mobile marketing by Generation Z according to the extended TAM model. Therefore, this study used the quantitative method as appropriate.

Quantitative research includes three methods: field experiments, laboratory experiments, and questionnaires. This study follows a quantitative approach by using questionnaires as the primary tool for data collection. Questionnaires allow access to a broader base of the study population and provide a cross-sectional status of the population at a given time (Armour & Macdonald, 2012). The questionnaire refers to "*all methods of data collection in which each person is asked to respond to the same set of questions in a predetermined order*" (Saunders et al., 2009). The use of questionnaires is generally inexpensive, rapid, geographically dispersed, and allows participants to respond without restrictions (Saunders et al., 2009). Furthermore, there are two main types of questionnaires, self-completed and interviewer-completed. There are five criteria for choosing an appropriate approach: respondent characteristics, respondent's personality importance, respondents bias, sample size, sample type and the number of questions. Based on the above criteria, the self-completed questionnaire was selected, because the research subjects were students, the required sample size was large, the question type used is Likert-scale, and the number of questions is relatively high. In addition, self-completed questionnaires are

often used as the primary method for data collection in the field of technology adoption. In Figure 4.1, a road map for the study's quantitative approach is presented, reflecting the steps taken from the development of the quantitative tool to the hypothesis validation stage, including various statistical tests to ensure consistent, valid and reliable measurements.

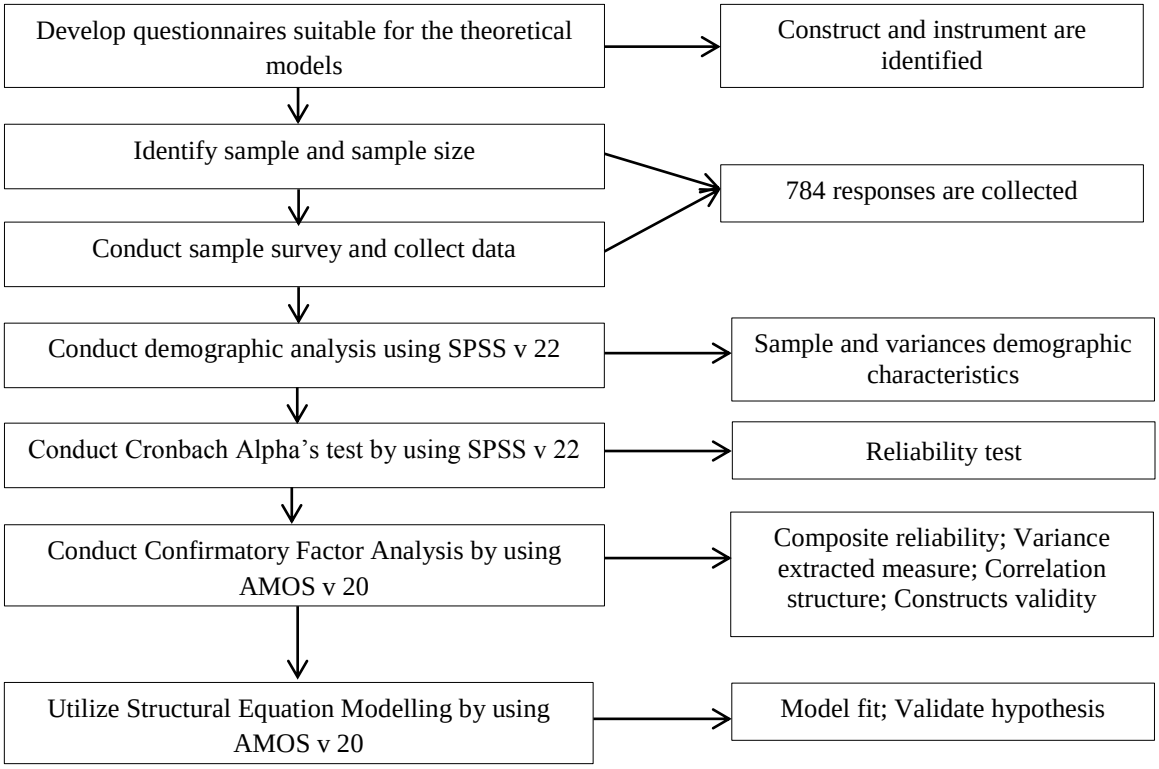

Figure 4.1. Research qualitative approach road map
Source: own study.

4.3. Questionnaire design

The tools in this study were designed to collect quantitative data, and the collection of as much data and information from participants as possible supports the analysis. The questionnaire used in this research was designed after reviewing several previous studies relevant to this investigation. The theoretical framework guided the questionnaire design process, which was long to develop to remain consistent with the research objectives. Measurement categories are taken from scholars such as Gwiaździński (2019); Gregor and Gwiaździński (2019); Murillo-Zegarra et al. (2020); Hur et al. (2017); Huynh and Nguyen (2016); Chang (2017); Yousra

(2019); Menon (2019); Liu et al. (2012); Muk and Chung (2015). The following steps were considered to ensure the construction of an appropriate questionnaire:

1. Relevant literature was reviewed to collect valuable questionnaire items that contribute to meeting the survey's objective and measure participant responses adequately.
2. The questionnaire items were restructured and revised after receiving the supervisor's feedback, comments and suggestions, to ensure the content was consistent with the research requirements.
3. The questionnaire was translated from English into Polish and Vietnamese. Based on the response, a suitable fallback structure was provided, and any ambiguity removed was sought.
4. Finally, a pilot test was performed to evaluate the questionnaire's adequacy and ensure the measurement reliability of all items.

In addition, the study used a series of logical steps in the survey design process to ensure the clarity and improve the effectiveness of the survey. This survey process should follow procedures to ensure that data is collected accurately, efficiently and at a reasonable cost. Figure 4.2 summarized in detail the steps of the questionnaire survey.

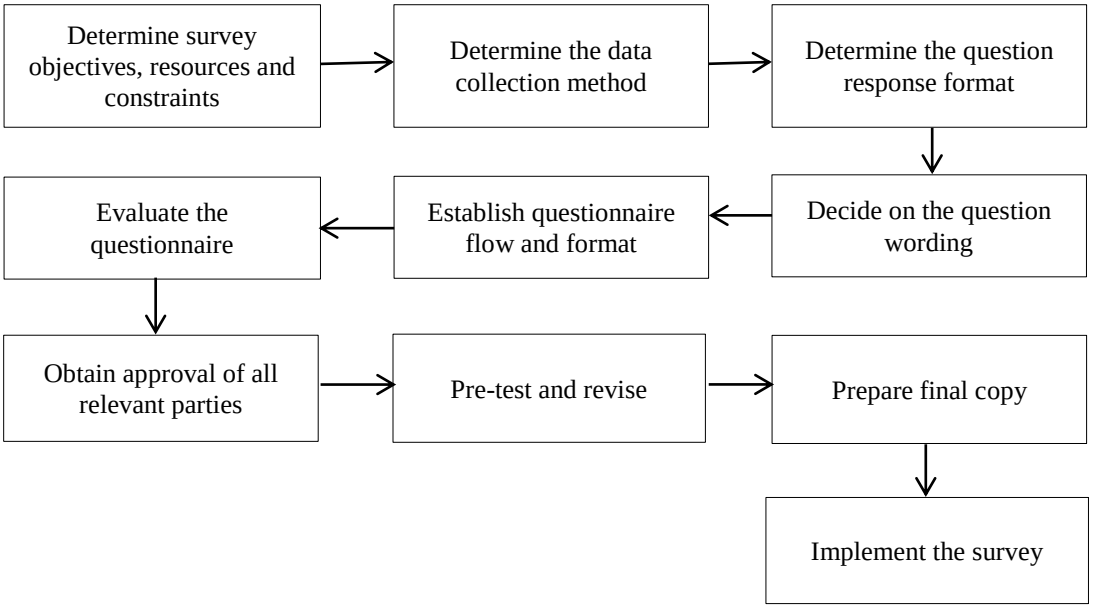

Figure 4.2. Questionnaire survey process
Source: own study.

Copies of the questionnaire are attached in Appendix A1, in English, in Appendix A2, in Polish and Appendix A3, in Vietnamese. The questionnaire is divided into the following three parts:

- SECTION I: The theoretical model constructs
- SECTION II: Evaluation of different forms of mobile marketing
- SECTION III: Demographic factors

In the following considerations of the dissertation, the scope of the study in individual sections will be discussed in detail.

SECTION I: The theoretical model constructs

The first part is about the factors influencing Generation Z's acceptance of mobile marketing. This section consists of 26 measurement questions aimed at determining the variables of the theoretical research model. The questionnaire items were adopted from previous studies have demonstrated to be valid. However, the categories have been adjusted to address the central problem of the research system, namely mobile marketing in Poland and Vietnam. The questionnaire includes six elements that explore the views of Generation Z regarding mobile marketing. Five of them are defined as independent factors based on the extended TAM model, including PU, PEOU, IV, BT and P. The dependent factor in the model is mobile marketing acceptance. A 5-point Likert scale labelled from "strongly disagree" to "strongly agree" was used to measure these items. Table 4.1 showed the theoretical model constructs-related items**.**

Table 4.1. The theoretical model items

Constructs	Labels	Items	Source
Perceived usefulness	PU1	I would find mobile marketing is useful.	Murillo-Zegarra et al., 2020; Hur et al., 2017; Huynh & Nguyen, 2016.
	PU2	I can benefit from mobile marketing schemes.	
	PU3	Mobile marketing helps to save time in looking for product and service.	
	PU4	Mobile marketing allows me to buy more efficiently.	
	PU5	Mobile marketing allows me to make purchases more quickly.	
Perceived ease of use	PEOU1	The interaction with mobile marketing is clear and understandable.	Chang, 2017; Hur et al., 2017
	PEOU2	Interaction with mobile marketing would not require a lot of mental effort.	
	PEOU3	Interacting with mobile marketing would be easy.	
	PEOU4	Content of mobile marketing is easy to share or recommend.	
Information	IV1	Mobile marketing gives me timely information about	Murillo-Zegarra

value		available products.	et al., 2020
	IV2	Mobile marketing gives me relevant information about available products.	
	IV3	Mobile marketing is a good source of information about available products.	
	IV4	Mobile marketing contains updated information on available products.	
Brand Trust	BT1	Mobile marketing is reliable.	Yousra, 2019;
	BT2	Information conveyed in mobile marketing is accurate.	Menon, 2019.
	BT3	Information conveyed by the brand in mobile marketing is convincing.	
	BT4	I have trust on the brand of mobile marketing.	
	BT5	Overall, I trust in mobile marketing.	
Privacy	P1	Mobile marketing does not disclose consumer private information to unauthorized parties.	Murillo-Zegarra et al., 2020
	P2	Mobile marketing will not share my private information without my consent in the future.	
	P3	Mobile marketing allows me to have control over how the private information I provide will be subsequently used.	
	P4	Mobile marketing ensures that my privacy will not be compromised during a transaction.	
Mobile marketing aceptance	AC1	I feel positive about mobile marketing.	Liu et al., 2012; Muk & Chung, 2015.
	AC2	I make purchases prompted by mobile marketing.	
	AC3	.I would read all message from mobile marketing.	
	AC4	I would be willing to interact more with mobile marketing in the future.	

Source: own study.

SECTION II: Evaluation of different forms of mobile marketing

The second part of the questionnaire collects opinions of Generation Z in Poland and Vietnam about multiple forms of mobile marketing, including SMS, MMS, mobile websites, mobile applications, mobile social networks, NFC, QR codes, mobile email and geolocation. The responses in this section are used to provide additional information for recommending the mobile marketing activities in chapter VI. The statistical results are attached in Appendix A4. It consists of 4 questions:

- The first question relates to the level of understanding and engagement with mobile marketing forms, including: "Never knew", "Knew but not use/interact", "Have used/interacted". This question is adapted from Gwiaździński (2019).
- The second question is about reasons for not using/interacting with other forms of mobile marketing. This question includes six senses, including: "*This form is not popular*"; "*I have the impression that this form is difficult to use*"; "*I think the use of services is not cost-efficient*"; "*I think this form is not secure*"; "*I am afraid for inappropriate or counterfeit charges if using this form*"; "*I think this form is annoying*"

and "*This form has a negative image*". This question is based on a multiple-choice question.

- The third question assesses the attributes of various forms of mobile marketing. This question is built and developed based on the multi-attribute model presented in the study Gwiaździński (2019). The assessed attributes include Attractiveness, interactiveness, informativeness and intrusiveness. The rating scale is based on a scale of Likert 1-5 (1- Not very high and 5- Very high).
- The fourth question concerns the attitudes of Generation Z towards each form of mobile marketing. In the questionnaire, respondents were presented with several statements regarding individual tools, namely: "*Campaigns using this tool change my attitude to the brand*" and "*I will recommend this tool*". These statements are referenced by the work of Gregor and Gwiaździński (2019). Respondents are asked to consult on a scale of 1 to 5 (1-strongly disagree and 5-strongly agree).

SECTION III: Demographic factors

The last part of the questionnaire collected baseline demographic information of the participants on a classification scale. It consists of 3 questions. These questions help categorize participants based on:

- Gender (nominal scale): Male and Female;
- Age group: 18-22, 23-26;
- Education: Student, Undergraduate degree and Postgraduate degree.

4.4. Population and sample

The subjects of this study can be identified as Generation Z in Poland and Vietnam, focusing on 18-26 years old. According to world population review data, the number of Generation Z is 6,816.4 million and the current 18.04% of the population of Poland in 2021 (Worldpopulationreview, 2021). Meanwhile, their number in Vietnam is 24,849.9 million and 25.29% of the population of Vietnam (Worldpopulationreview, 2021). It can be seen that the population size, in this case, is relatively large, and it is not easy to obtain a sampling frame, so it is reasonable to choose non-probability sampling (Saunders et al., 2009). Non-probability

sampling provides a range of techniques that allow researchers to sample their study population without the need for a sampling framework. Among non-probability sampling techniques, self-selection from a group of volunteers is the most suitable technique for this study.

The sample size will be calculated according to the formula of Hair et al. (2014). According to this formula, Hair et al. (2014) have shown the structural equation model: multiple regression analysis and confirmatory factor analysis; minimum sample size requires a 20:1 ratio (i.e. 20 responses for each independent variable). However, the authors recommended a 50:1 ratio for better results. The model developed for this study includes five independent variables. Thus with a 50:1 ratio, the sample size required a minimum of 250 responses for each surveyed country. The total number of completed responses obtained for the statistical analysis was 369 in Poland and 415 in Vietnam, both satisfactory. All answers will be used for statistical analysis of each sample. Confirmatory factor analysis will be used to validate the developed model through unidimensionality, the goodness of fit measures, and structural validity. Multiple regression analysis will be used to examine the research hypotheses and explain the variance for the developed model for each sample.

4.5. Data collection procedures

Data collection was carried out from October 1, 2021, to January 20, 2021. The survey was conducted based on both online and offline forms. For online form, simple polls already have built-in Facebook and Twitter and Google Forms (Nayak &Narayan, 2019). Google forms are ideal for submitting a short questionnaire, charting the results, or exporting them for analysis to a spreadsheet. It provides different question formats from textbox, paragraph, multiple choice, checkbox, scale, grid, etc. It allows custom logic to navigate through questions based on answers. Pre-existing data validation rules ensure that people get the right question based on previous answers. In addition, it also greatly supports the input of questionnaire results. However, this form also has certain obstacles related to sampling, response rates, characteristics of non-responders, maintaining confidentiality, and ethical issues (Rubin, 2019). The online form is difficult to explain in detail about research objectives. If the participants had doubts, the researcher could not give an immediate answer. The offline survey has advantages such as high response rate, easy explanation of respondents' questions, independent of technology, and

minimization of sample frame error. Besides, this form also has disadvantages such as high cost, time-consuming investigation, and the inconvenient conversion of answers into analytical software. Both forms have distinct advantages and disadvantages, so the choice of either or a combination of both should depend on the actual situation in each sample. As a result, the investigation is easy and highly effective.

The online survey form is applied to the sample in Poland. Meanwhile, both online and paper questionnaires were used for the Vietnamese sample. The online form is built on top of the Google forms platform – dedicated to building surveys. With support and help from teachers, a link to the questionnaire is provided to students at universities in Poland and Vietnam via email or study groups. The form of direct distribution of the questionnaire was done with the consent and support of the university in Vietnam.

To sum up, this section detailed the research methodology by explaining the research process and design. The research process has briefly introduced the approaches and explained the reasons for selection. This study follows the deductive reasoning method (i.e. top-down approach) to develop research models and hypotheses. Empirical part decides the research model's acceptance or rejection and hypotheses. The study design described the quantitative method and gave reasons for choosing the quantitative approach for this study. Furthermore, this section defined the study population by indicating the minimum sample size required and how the collected data would confirm or disprove the hypothesis. This study uses a non-probability sampling method called self-selection strategy to interact with research participants through questionnaires. Finally, the chapter provides details on the development of the research instrument (i.e. questionnaire). The following section is dedicated to data analysis. This chapter was divided into four parts, screening the data to ensure the validity of the collected data, evaluating the validity of the developed model by testing the goodness of fit measures, test the developed model and hypotheses.

CHAPTER V
DATA ANALYSIS

This chapter focuses on data analysis for the developed model and proposed hypotheses. Statistical analysis of the study was performed using the Analysis of Momentary Structures (AMOS) and the Statistical Package for the Social Sciences (SPSS). Statistical analysis can be divided into three steps. The first step is to screen the data to make sure the collected data is clean, useful, and valid for testing. During the data screening phase, issues such as missing data, outliers, normality, linearity, and multicollinearity are examined. The second step is to evaluate the measures of the developed model using Confirmatory Factor Analysis (CFA). The developed model's measurements determine the relationship between the observed variables (i.e. the measurement items) and the evolved model variables. CFA allows the developed model's measurements to be checked for structural fit and validity. The third step is to test the developed model and research hypotheses through Structural Equation Modelling (SEM). The developed model identifies relationships between variables as suggested by the research hypothesis. SEM will calculate the variance explained for the developed model and identify accepted or rejected hypotheses.

5.1. Data screening

Raw data can suffer from missing data, outliers, linearity, or normality problems. Therefore, the collected data will be checked to ensure their validity.

Missing data

The 10% missing data can bias the statistical analysis (Bennett, 2001). The percentage of data missing by 5% or less on a variable is insignificant, and any processing can yield similar results. This study analyzed two different data samples. In the Polish and Vietnamese samples, the results of the frequencies analysis of the variables did not find any missing data. Thus, it can be confirmed that the data in both samples are valid.

Outliers

Outliers are extreme or atypical values that can reduce and distort the information in a data set (Wada, 2020). In terms of associativity, outliers have two main ones: univariate outlier and multivariate outlier. Univariate outliers were identyfied by determining the frequency distribution of the Z-score of the observed data. Kline (2011) suggested that any z-score greater than 3 or less than -3 is considered an outlier. However, no univariate outliers were identified for this study because the questionnaire used a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. If respondents disagree or strongly agree, these response options may become the exception, as they are the extremes of the scale.

The multivariable coefficient of variation has an extreme score on two or more variables, or its sample is atypical. Multivariable covariance was tested by determining the Mahalanobis distance (D2), which measures the distance in standard deviations between each observation from the mean of all observations (Hair et al., 2010). Cases with D2 with a statistical significance of 0.001 are considered as outliers. Mahalanobis distance: calculated using SPSS 22 for both Polish and Vietnamese samples. The results showed that there are some outliers in both samples. However, it does not change much when this outlier is removed, and its removal may limit the generalizability (Hair et al., 2010). Therefore, this study decided to keep the outliers.

Normality

Normality is 'the shape of the data distribution or an individual metric variable and its correspondence to the normal distribution, which is the benchmark for statistical methods' (Hair et al., 2010, p. 70). Skewness (SI) measures the symmetry of the distribution of data; Kurtosis (KI) describes the shape of the data distribution, i.e. peaked or flat, relative to the normal distribution (Hair et al., 2010). Researchers recommend that the absolute skewness value be no greater than 3.0, and the total value of kurtosis should not exceed 10.0 (Kline, 2011). SI and KI values for each measured variable were calculated using SPSS according to the following formulas:

$$\textbf{Skewness} = \frac{n}{(n-1)(n-2)} \sum_{i=1}^{n} \left(\frac{x_i - \bar{x}}{s}\right)^3$$

x = observation number in the sample

$\bar{x}$ = average numbers in the sample

n = sample size

s = the sample standard deviation

$$\textbf{Kurtosis} = \frac{n-1}{(n-2)(n-3)}[(n+1)g_2 + 6]$$

n = sample size

$g_2 = \frac{m_4}{m_2^2}$

m_r = Sample moments

The results in the Table 5.1 showed that the data in both samples are normally distributed.

Table 5.1. Skewness and Kurtosis of Vietnamese and Polish samples

Variable	Items	Skewness		Kurtosis	
		Vietnam	*Poland*	*Vietnam*	*Poland*
PU	PU1	-0.945	-1.034	2.112	0.919
	PU2	-0.774	-1.030	0.723	0.345
	PU3	-1.245	-1.075	4.376	1.415
	PU4	-0.787	-0.529	1.416	0.306
	PU5	-1.029	-0.874	2.198	0.681
PEOU	PEOU1	-0.788	-0.513	1.037	1.026
	PEOU2	-0.603	-0.810	0.155	0.164
	PEOU3	-1.096	-0.894	2.284	2.250
	PEOU4	-1.188	-1.130	2.367	2.325
IV	IV1	-1.068	-0.710	1.489	-0.130
	IV2	-1.208	-0.640	1.664	-0.208
	IV3	-1.076	-0.814	1.010	0.059
	IV4	-0.872	-0.719	1.069	-0.064
BT	BT1	-0.440	-0.300	0.918	0.096
	BT2	-0.343	-0.162	0.604	0.040
	BT3	-0.593	-0.292	1.185	0.388
	BT4	-0.597	-0.222	1.389	0.320
	BT5	-0.588	-0.139	1.160	0.241
P	P1	-0.249	0.289	0.542	-0.846
	P2	-0.351	0.179	0.963	-0.804
	P3	-0.276	0.411	1.276	-0.933
	P4	-0.264	0.228	0.663	-0.710
AC	AC1	-0.766	-0.486	1.113	-0.499
	AC2	-0.596	-0.188	-0.436	-0.852
	AC3	0.001	1.043	-1.206	0.407
	AC4	-0.399	0.091	-0.487	-0.779

Source: Data analysis, 2022.

5.2. Demographic characteristics of respondents and construct items

Demographic characteristics of respondents

Descriptive analysis was used to describe data about respondents. Descriptive analysis of data is important to understand the sample of participants and how this relates to the population. Table 5.2. showed that the characteristics of the respondents are expressed through demographic parameters related to age, sex, education level.

Table 5.2. Demographics of respondents

	Frequency		Percentage	
	Vietnam	**Poland**	**Vietnam**	**Poland**
		Gender		
Male	52	151	11.7	41
Female	362	217	88.3	59
		Age		
18-22	400	287	96.85	78
23-26	13	81	3.15	22
		Education		
Student	400	212	96.62	57.45
Bachelor	8	136	1.93	36.86
Postgraduate	6	21	1.45	5.69

Source: Data analysis, 2022.

For the gender question, from the frequency distribution of the respondents, it can be seen that a total of 414 Vietnamese and 368 Polish respondents took part in the research. Specifically, the majority of respondents in the Vietnamese sample are female, accounting for 88.3%. Meanwhile, the Polish sample showed no gender disparity in the respondents, 41% were male, and 59% were female.

Because the study focused on the audience of Generation Z, the selected age range was from 18-26 years old. In Table 5.2, the age group analysis showed that most respondents in both samples were aged 18-22 years. Specifically, 96.85% were aged 18-22, and 3.15% were 23-26 years old for the Vietnamese sample. The rates are 78% and 22% for the Polish sample, respectively. Regarding education, 96.62% of Vietnamese respondents are currently students, and thus, only 3.38% have graduated and been post-graduated. Meanwhile, 57.45% of Poles are students, 36.86% have graduated, and 5.69% have been post-graduated.

Descriptive statistics of construct items

This section presents descriptive statistics of the questionnaire constructs. Tables 5.3 to 5.8 report the means, standard deviation, variance of six variables: PU, PEOU, IV, BT, P and AC. The level of mean value is divided as follows:

- 1.49 (rounded to 1): Strongly disagree
- 1.50 – 2.49 (rounded to 2): Disagree
- 2.50 – 3.49 (rounded to 3): Neutral
- 3.50 – 4.49 (rounded to 4): Agree
- 4.50 – 5.00 (rounded to 5): Strongly agree

Perceived usefulness (PU)

The respondents' perceptions of usefulness were measured by five items using a 5-point Likert scale ranging from 'strongly disagree' (scale 1) and 'strongly agree' (scale 5). Table 5.3 reports the descriptive statistics of measured items of the PU construct. In Vietnamese sample, the mean rating of the PU construct items was between 3.78 (±1.034) and 4.03 (±1.014). In Polish sample, this rating was between 3.99 (± 1.119) and 4.18 (±0.946). In summary, the overall mean score for all items were 3.912 in the Vietnamese sample and 4.047 in the Polish sample. The results showed that both samples agreed that mobile marketing are considered useful.

Table 5.3. Descriptive statistics of PU's items

Variable	Description	Mean Statistic		Std. Deviation Statistic	
		Vietnam	*Poland*	*Vietnam*	*Poland*
PU1	I would find mobile marketing useful	3.96	4.18	0.966	0.946
PU2	I can benefit from mobile marketing schemes	3.86	4.21	0.993	0.885
PU3	Mobile marketing helps to save time in looking for product and service	4.03	4.09	1.014	1.047
PU4	Mobile marketing allows me to buy more efficiently	3.78	3.76	1.034	1.127
PU5	Mobile marketing allows me to make purchases more quickly	3.93	3.99	1.055	1.119

Source: Data analysis, 2022.

The evaluations of the Generation Z in Vietnam and Poland about PU indicators are shown in Figure 5.1. Overall, Polish respondents rated the usefulness of mobile marketing more than Vietnamese respondents. Through the data, it can be seen that Vietnamese respondents

focus on saving shopping time when applying mobile marketing. Meanwhile, Polish respondents were satisfied with the benefits that mobile marketing campaigns bring to them. This benefit can include promotions like discounts, coupons, etc.

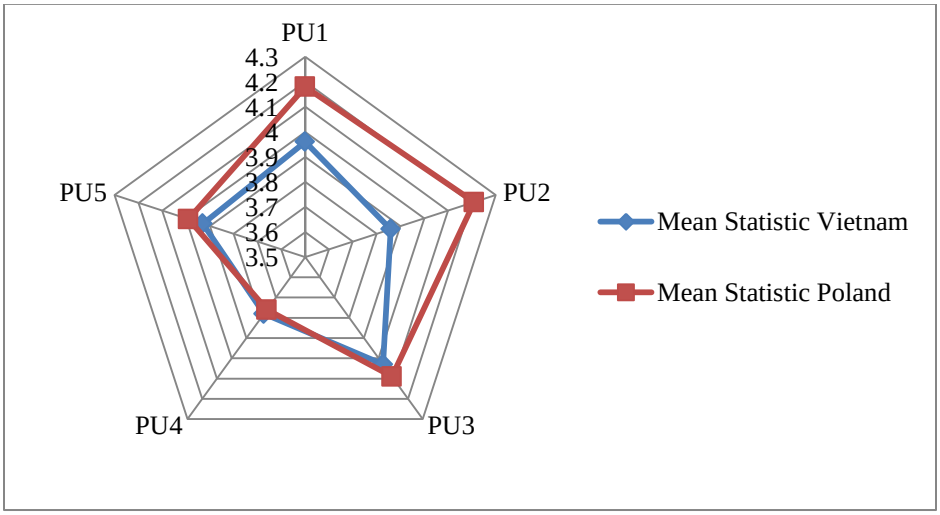

Figure 5.1. Mean statistic of PU indicators
Source: Data analysis, 2022.

Perceived ease of use (PEOU)

PEOU construct was measured by four-items. Table 5.4 presents descriptive results of measured items of this construct. In Vietnamese sample, the highest and lowest mean ratings of the items were 3.85(±0.885) and 3.40 (±0.921), respectively. In Polish sample, the highest and lowest mean ratings of the items were 4.22 (±0.929) and 3.71 (±0.981), respectively. The average mean scores of all items were 3.648 in the Vietnamese sample and 3.938 in the Polish sample. The results indicate that both perception samples of mobile marketing are perceived as easy to learn, understand, and use.

Table 5.4. Descriptive statistics of PEOU's items

Variable	Description	Mean Statistic		Std. Deviation Statistic	
		Vietnam	*Poland*	*Vietnam*	*Poland*
PEOU1	The interaction with mobile marketing is clear and understandable	3.59	3.71	0.885	0.981
PEOU2	Interaction with mobile marketing would not require a lot of mental effort	3.40	3.80	0.921	1.128
PEOU3	Interacting with mobile marketing would be easy	3.75	4.02	0.824	0.921
PEOU4	Content of mobile marketing is easy to share or recommend	3.85	4.22	0.879	0.929

Source: Data analysis, 2022.

Furthermore, the assessments of PEOU indicators do not have a clear difference between Vietnam and Poland (shown in Figure 5.2). However, Generation Z in Poland still appreciated them more than their Vietnamese counterparts. PEOU4 was the first indicator rated by respondents in Vietnam and Poland. The convenience of sharing content with family and friends makes mobile marketing easy for Generation Z in both countries. This finding is consistent with the characteristics of Generation Z discussed in the previous section. They always want to collect the opinions of relatives and friends before deciding to purchase.

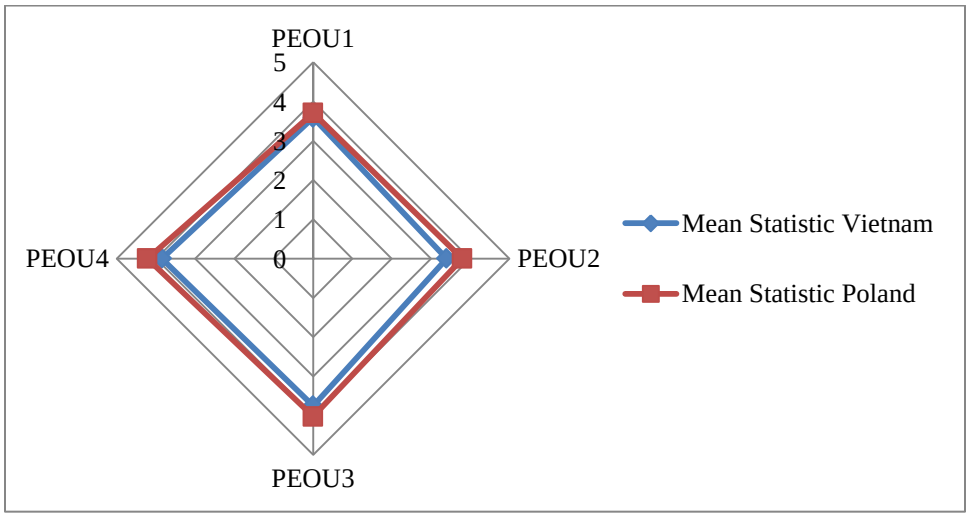

Figure 5.2. Mean statistic of PEOU indicators
Source: Data analysis, 2022.

Information value (IV)

Table 5.5 reports a descriptive statistical summary of respondents' answers about IV levels regarding their mobile marketing acceptance on a 5-point scale, ranging from 1 being "strongly disagree" to 5 is "totally agree". There are four items used to measure this structure. In Vietnamese sample, IV2 had the highest mean rating of 3.86 (±0.981) while IV4 had the lowest mean rating of 3.81 (±0.942). In Polish samples, the highest average rating of 3.86 (±1.034) was found for item IV4 while the lowest average rating of 3.78 (±1.020) for item IV2. In summary, the overall mean score for all items in the Vietnamese and Polish samples is 3.843 and 3.823, respectively, indicating that respondents expressed agreement that the information that mobile marketing provides is valuable.

Table 5.5. Descriptive statistics of IV's items

Variable	Description	Mean Statistic		Std. Deviation Statistic	
		Vietnam	*Poland*	*Vietnam*	*Poland*
IV1	Mobile marketing gives me timely information about available products	3.84	3.85	0.981	1.030
IV2	Mobile marketing gives me relevant information about available products	3.87	3.78	0.981	1.034
IV3	Mobile marketing is a good source of information about available products	3.84	3.80	1.001	1.121
IV4	Mobile marketing contains updated information on available products	3.81	3.86	0.942	1.020

Source: Data analysis, 2022.

The assessment of Generation Z in Vietnam and Poland on indicators IV is shown in Figure 5.3. Through the data, it can be seen that Vietnamese people are interested in the relevance of the information that marketing gives them. Relevancy of information can refer to a customer's needs or desires or to their shopping history. Meanwhile, respondents in Poland focused on up-to-date information. Updates can be about new products, product status (available/out of stock) or information about promotions or events etc. In general, the indicators of IV are evaluated more highly in the Vietnamese sample than in the Polish sample.

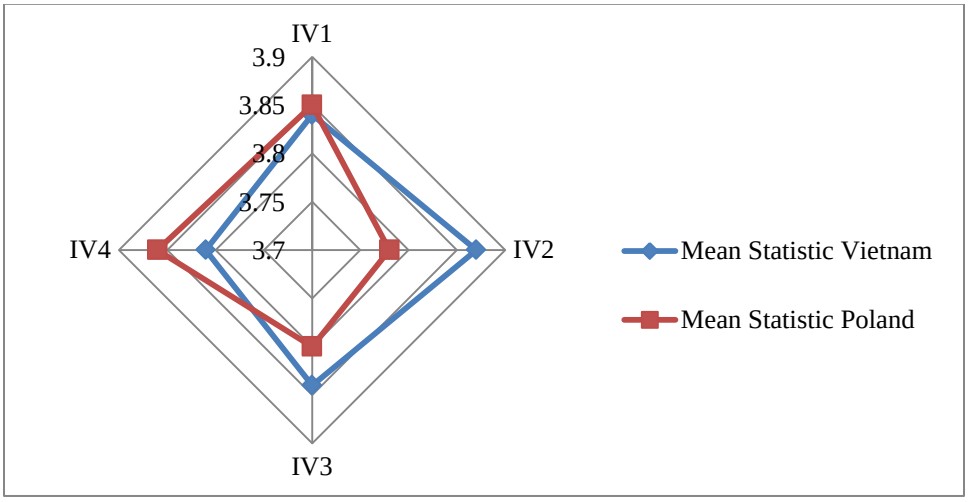

Figure 5.3. Mean statistic of IV indicators

Source: Data analysis, 2022.

Brand trust (BT)

The BT construct was measured by five items using a 5-point Likert scale ranging from 'strongly disagree' (scale 1) and 'strongly agree' (scale 5). Table 5.6 presents descriptive results of measured items of this construct. In Vietnamese sample, the highest and lowest mean ratings

of the items were 3.49 (±0.958) and 3.39 (±0.948), respectively. In Polish sample, the highest and lowest mean ratings of the items were 3.44 (±0.993) and 3.01 (±1.062), respectively. In summary, the overall mean score of all items in the Vietnamese and Polish samples is 3.433 and 3.279, respectively, indicating that respondents hold a neutral opinion on the level of brand trust in mobile marketing.

Table 5.6. Descriptive statistics of BT's items

Variable	Description	Mean Statistic		Std. Deviation Statistic	
		Vietnam	*Poland*	*Vietnam*	*Poland*
BT1	Brand in mobile marketing that I interact with is reliable.	3.49	3.47	0.958	1.000
BT2	Information conveyed by the brand in mobile marketing is accurate.	3.39	3.24	0.948	0.979
BT3	Information conveyed by the brand in mobile marketing is convincing.	3.45	3.44	0.959	0.993
BT4	I have trust on the brand in mobile marketing that I interact with.	3.42	3.24	0.950	1.016
BT5	Overall, I trust in mobile marketing.	3.41	3.01	0.986	1.062

Source: Data analysis, 2022.

In addition, the assessments of BT indicators had clear differences between Vietnam and Poland (shown in Figure 5.2). It can be seen that Generation Z in Vietnam still values BT criteria higher than their Polish counterparts. Respondents in Vietnam and Poland both rated BT1 as the first criterion when considering trust. This result showed that on mobile platform, both Generation Z in Vietnam and Poland only interact with brands that they consider trustworthy.

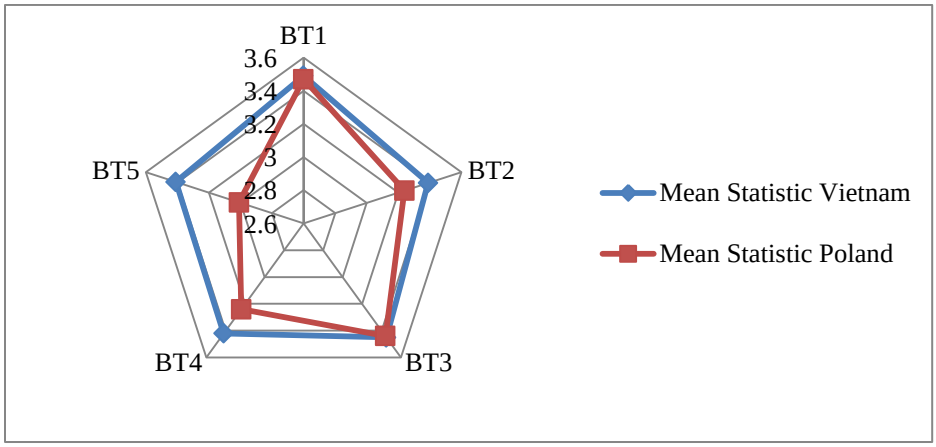

Figure 5.4. Mean statistic of BT indicators

Source: Data analysis, 2022.

Privacy (P)

Table 5.7 reports the summary of the descriptive statistics of the respondents answers about levels of P concerning their acceptance on a 5-point scale ranging from 1 referring to "strongly disagree" to 5 referring to "strongly agree". There were four items to measure this construct. In Vietnamese sample, the highest mean rating of 3.25 (±1.223) was found for P2, while the lowest mean rating was 3.03 (±1.215) for P3. In Polish sample, the highest mean rating of 2.80 (±1.123) was found for P4, while the lowest mean rating was 2.49 (±1.196) for P3. The overall mean score for all items in the Vietnam sample was 3.152, indicating that the sample has a neutral opinion on privacy on mobile marketing. However, the overall average score of all items in the Polish sample was 2.688, indicating that the Polish sample disagrees about the privacy guarantees of mobile marketing.

Table 5.7. Descriptive statistics of P's items

Variable	Description	Mean Statistic		Std. Deviation Statistic	
		Vietnam	*Poland*	*Vietnam*	*Poland*
P1	Mobile marketing does not disclose consumer private information to unauthorized parties.	3.13	2.67	1.191	1.177
P2	Mobile marketing will not share my private information without my consent in the future.	3.25	2.79	1.223	1.263
P3	Mobile marketing allows me to have control over how the private information I provide will be subsequently used.	3.03	2.49	1.215	1.196
P4	Mobile marketing ensures that my privacy will not be compromised during a transaction.	3.20	2.80	1.111	1.123

Source: Data analysis, 2022.

Through Figure 5.5, it can be seen that generation Z in Vietnam valued P-criteria higher than its Polish counterpart. Indicator P2 was rated the highest by Vietnamese participants. Meanwhile, in the Polish sample, they rated the highest indicator P4. As such, both samples had different priorities on privacy issues. Generation Z in Vietnam focuses on permission when businesses use their personal information, or they simply need to be notified by the business. The issue of security and safety in transactions is a notable issue for Poles.

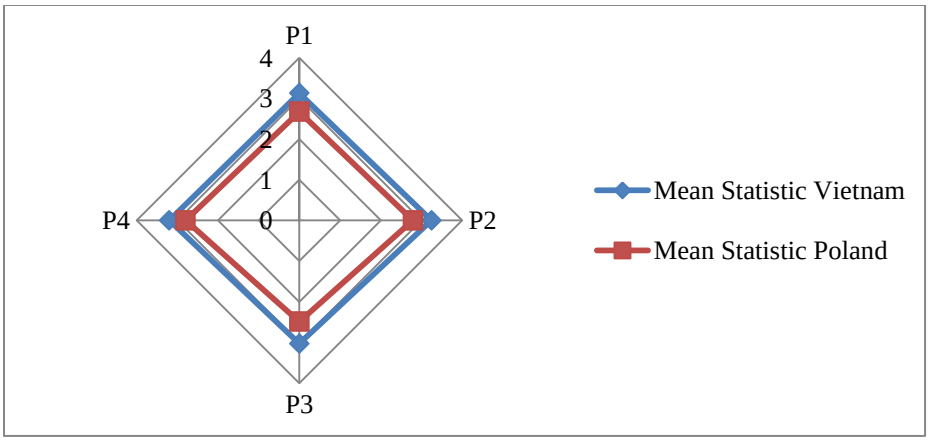

Figure 5.5. Mean statistic of P indicators

Source: Data analysis, 2022.

Mobile marketing acceptance (AC)

The respondents were also asked to indicate their acceptance of mobile marketing. Four items on a 5-point Likert scale ranging from strongly disagree (scale 1) to strongly agree (scale 5) were used to measure this construct. The results of the respondents' ratings for each item of this construct are reported in Table 5.8. In Vietnamese sample, the mean scores ranged between 2.62 (±1.190) and 3.49 (±1.092). In Vietnamese sample, the mean scores ranged between 1.99 (±1.101) and 3.59 (±1.125). The overall average score of all items in the Vietnamese sample is 3.145, indicating that the sample has a neutral opinion that they accept mobile marketing. Meanwhile, the overall mean score of all items in the Polish sample of 2.877 indicates that the sample disagrees about their acceptance of mobile marketing.

Table 5.8. Descriptive statistics of AC's items

Variable	Description	Mean Statistic		Std. Deviation Statistic	
		Vietnam	*Poland*	*Vietnam*	*Poland*
AC1	I feel positive about mobile marketing	3.49	3.59	1.092	1.125
AC2	I make purchases prompted by mobile marketing.	3.32	3.14	1.155	1.228
AC3	I would read all message from mobile marketing.	2.62	1.99	1.190	1.101
AC4	I would be willing to interact more with mobile marketing in the future.	3.15	2.78	1.123	1.162

Source: Data analysis, 2022.

Assessments of Generation Z in Vietnam and Poland on AC indicators are presented in Figure 5.6. In general, Polish respondents rated these indicators lower than Vietnamese.

However, both the Polish sample and the Vietnamese sample claim that mobile marketing gives them a positive impression. AC1 is the most appreciated indicator in both samples.

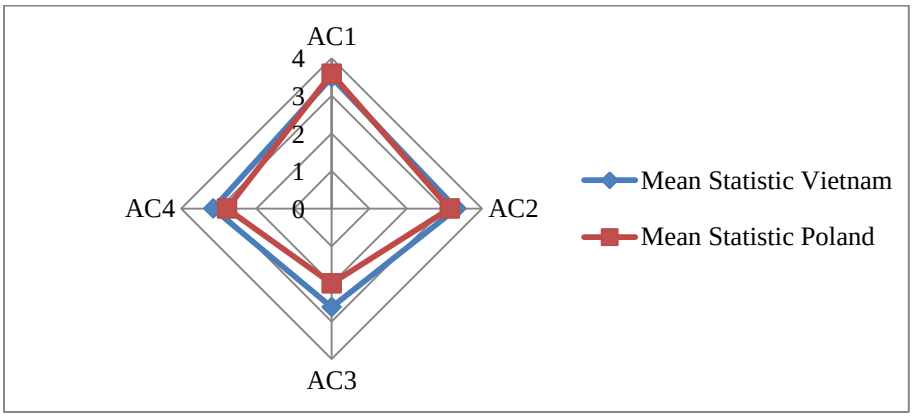

Figure 5.6. Mean statistic of AC indicators
Source: Data analysis, 2022.

Both samples agree that mobile marketing is useful and easy to use through the statistical results. In addition, both samples have a neutral opinion on brand trust in mobile marketing. On the other hand, respondents did not comment on privacy and mobile marketing acceptance in the Vietnam sample. The Polish participants disagreed that mobile marketing guarantees their privacy, nor do they accept mobile marketing. Therefore, it can be concluded that Vietnamese generation Z participants tend to accept mobile marketing more than Polish participants.

5.3. Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) is "*a way of testing how well the measured variables represent a smaller number of constructs*" (Hair et al., 2010). CFA evaluates the validity of the developed model by examining the 26 measures assigned to the model variables in both the Vietnamese and Polish samples. CFA measures how well the measure variables are set to measure the model variables. Furthermore, CFA involves the measured version of the developed model known as the measurement model. As suggested by the study, the structural relationships between the model variables are replaced by correlation relationships (i.e. covariance) in the measurement model.

Figure 5.7 shows the measurement model representation in IBM AMOS connecting the developed model variables, including PU, PEOU, IV, BT, P, and AC. CFA will confirm the developed model through three measures of unidimensionality, the goodness of fit measures and structural validity. Furthermore, IBM AMOS (Version 20) was used for confirmatory factor.

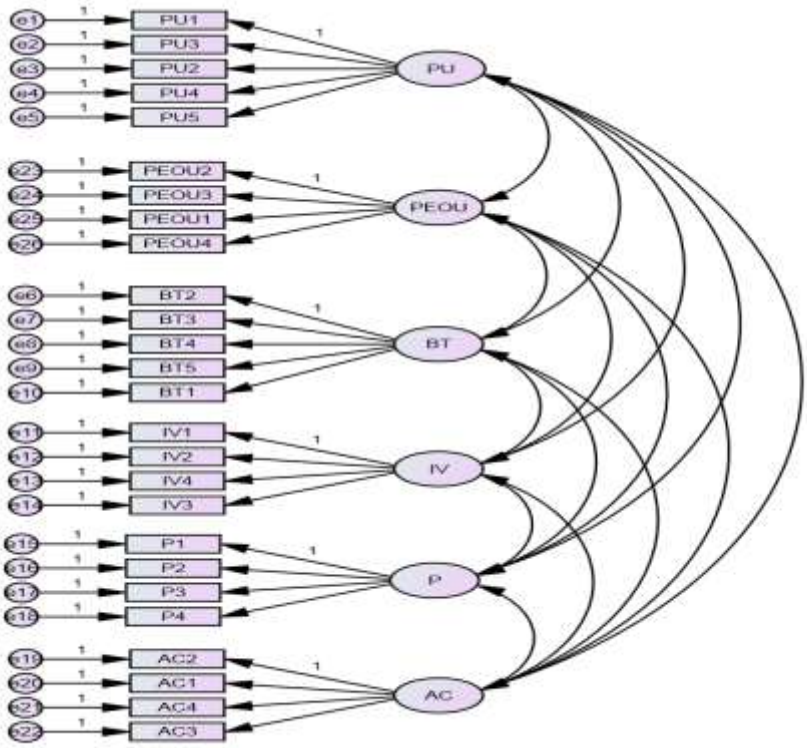

Figure 5.7. The measurement model in IBM AMOS
Soure: Data analysis, 2022.

Unidimensionality

Unidimensionality assumes that the measurement variables have one fundamental dimension (i.e. the model variable). Twenty-six measure variables and six model variables, each of which has an assigned number of measures. To ensure that all measured variables have a unidirectional relationship with their principal variables, the measured variable factor load must be higher than 0.50 (Hair et al., 2010). The results show factor loads based on confirmatory factor analysis confirming unidirectionality for all measured variables in each Vietnamese and Polish sample (see Table 5.9). For the Vietnamese sample, the factor loads are satisfactory. However, in the Polish sample, the measure variables AC3 and PEOU2 could not achieve the

minimum recommended factor load value. Therefore, these two measures become a candidate for deletion to improve the model validity in the Polish sample (Hair et al., 2010).

Table 5.9. Factors load for the measured variables of Vietnam and Poland samples

Variable	Items	Observed variable loading	
		Vietnam	*Poland*
PU	PU1	0.75	0.769
	PU2	0.601	0.609
	PU3	0.856	0.803
	PU4	0.717	0.785
	PU5	0.801	0.754
PEOU	PEOU1	0.772	0.662
	PEOU2	0.702	0.455
	PEOU3	0.84	0.698
	PEOU4	0.787	0.734
IV	IV1	0.805	0.774
	IV2	0.761	0.861
	IV3	0.753	0.819
	IV4	0.721	0.729
BT	BT1	0.741	0.688
	BT2	0.796	0.75
	BT3	0.777	0.681
	BT4	0.792	0.798
	BT5	0.652	0.823
P	P1	0.863	0.799
	P2	0.85	0.813
	P3	0.847	0.799
	P4	0.83	0.842
AC	AC1	0.713	0.835
	AC2	0.753	0.635
	AC3	0.643	0.483
	AC4	0.796	0.704

Source: Data analysis, 2022.

The reliability of the measure is related to the degree to which the instrument is free from random error. It is concerned with the consistency and stability of the measurement. The reliability of the tool was determined using Cronbach alpha. The reliability function in SPSS 22 was used to check the internal consistency of items for each construct measured in the questionnaire. The Table 5.10 showed the Cronbach alpha value for each scale based on the criteria proposed by Nunnally (1978). The value levels of alpha must meet the following criteria:

- greater than 0.8 is a very good scale;
- or 0.7 to 0.8 is a good scale;
- or 0.6 or more is qualified.

All alpha values show high internal reliability of the survey tool in both samples because their Cronbach alpha coefficient is greater than 0.7. Detailed data for the measured variables in both samples are provided in the appendix.

Table 5.10. Mean and Cronbach's Alpha for each construct of Vietnamese and Polish samples

Variable	No. of items	Mean		Cronbach's Alpha	
		Vietnam	*Poland*	*Vietnam*	*Poland*
PU	5	3.912	4.047	0.862	0.861
PEOU	4	3.648	3.938	0.856	0.730
IV	4	3.843	3.823	0.846	0.872
BT	5	3.433	3.279	0.864	0.866
P	4	3.152	2.688	0.910	0.886
AC	4	3.145	2.877	0.813	0.778

Source: Data analysis, 2022.

Constructs Validity

Constructs Validity is the degree to which a measure of performance correlates with the theoretical concept being studied. The validity of the developed model structure will be evaluated by the following two components: convergent and discriminant validity.

Convergent validity

Convergent validity refers to the extent to which a measure is related to other standards designed to assess the same construct. It can be evaluated using Composite Reliability (CR) and Average Variance Extracted (AVE). According to Hair et al. (2010), CR must be greater than 0.7; AVE must be above 0.5 to ensure convergent validity. In the Vietnamese sample, all indicators are up to the standard. In the Polish sample, the two variables, AC and PEOU, do not meet the requirements for CR and AVE. To improve the results, the author considers removing two measuring variables, AC3 and PEOU2, with unsatisfactory factor loading coefficients (shown in Table 5.9). After removing the measurement variable and conducting the second analysis, the obtained results show that the AC meets the requirements; the AVE value of PEOU (0.470) is still lower than 0.5. However, if we continue to remove the measurement variable of PEOU, the CR of PEOU will drop below 0.7. In this case, according to Ping (2019, p. 43), PEOU has an AVE value of approximately 0.5 can be temporarily accepted. Table 5.11 shows the results of convergent validity for the two samples.

Table 5.11. Constructs' validity

Variable	CR		AVE	
	Vietnam	*Poland*	*Vietnam*	*Poland*
PU	0.864	0.862	0.562	0.558
PEOU	0.859	0.726	0.604	0.470
IV	0.846	0.874	0.578	0.636
BT	0.867	0.865	0.568	0.563
P	0.911	0.886	0.718	0.661
AC	0.818	0.763	0.531	0.522

Source Data analysis, 2022.

Discriminant validity

Discriminant validity is achieved when an indicator correlates more closely with the construct it is intended to measure than with other constructs. In addition, the correlation between exogenous constructs should be less than 0.85 (Voorhees et al., 2016). If discriminant value is not established, constructs "*have an influence on the variation of more than just the observed variables to which they are theoretically related*" and, as a consequence, "*researchers cannot be certain results confirming hypothesized structural paths are real or whether they are a result of statistical analysis*" (Farrell, 2010, p. 324). The table 5.12 and 5.13 show the implied correlations between the constructs in the model in the Vietnamese and Polish samples. The discriminant value seems to be satisfactory for all constructs because the estimated correlations do not exceed the specified.

Table 5.12. Factor Correlation Matrix of Vietnam sample

Factor	1	2	3	4	5	6
PU	1.000					
BT	.344	1.000				
IV	.505	.631	1.000			
P	.322	.404	.441	1.000		
AC	.603	.497	.589	.265	1.000	
PEOU	.444	.685	.635	.352	.549	1.000

Source: Data analysis, 2022.

Table 5.13. Factor Correlation Matrix of Polish sample

Factor	1	2	3	4	5	6
PU	1.000					
P	.349	1.000				
BT	.586	.562	1.000			
IV	.702	.434	.675	1.000		
AC	.546	.498	.639	.525	1.000	
PEOU	.449	.308	.462	.490	.225	1.000

Source: Data analysis, 2022.

Goodness of Fit

The goodness of Fit measures indicates *"how well the specified model reproduces the observed covariance matrix among the indicator items"* (Hair et al., 2010). The research selected five measures to assess the developed model validity, goodness of fit index, root mean square error of approximation, standardised root mean residual, comparative fit index and Tucker-Lewis index. The five selected measures are the most recognized and commonly used in information system research (Hair et al., 2010). More details about the goodness of fit measures are as follow:

1. The most common index is the chi-square ($\chi 2$) statistic. $\chi 2$ indicates a good fit model when the associated p-value with $\chi 2$ is insignificant. However, the literature shows that $\chi 2$ is greatly affected by sample size (Hair et al., 2010). Alternatively, normed chi-square (NC) is used to minimise the effect of sample size. NC is calculated by dividing the chi-square by the degree of freedom where the value of less than 3.0 indicates a good fit, or less than 5.0 means an acceptable fit (Hair et al., 2010).
2. Goodness of Fit Index (GFI): This measure value range is between 0 and 1. Moreover, it is generally accepted that values of 0.90 or greater indicate a good fit. According to Hair et al. (2010), there is a decline in GFI usage because it is being sensitive to the sample size. In addition, the Adjusted Goodness of Fit Index (AGFI) considers the different aspects of model complexity, and the recommended cut-off value is AGFI > 0.80.

   GFI = 1- $\frac{\hat{F}}{\hat{F}_b}$

   $\hat{F}$ = minimum value of the discrepancy function

   $\hat{F}_b = \sum^g = 0$, g = 1,2,…..,G.
3. Comparative Fit Index (CFI) is a commonly used GOF measure because it is less sensitive to model complexity (Hair et al., 2010). This statistic assumes that all latent variables are uncorrelated (null model) and compares the sample covariance matrix with this null model. CFI ≥ 0.9 is good, CFI ≥ 0.95 is excellent, CFI ≥ 0.8 is acceptable (CFA ranges from 0 to 1) (Hair et al., 2010).

   CFI = 1 - $\frac{\max(\hat{C} - d.0)}{\max(\hat{C} - d_{b,0})}$

$\widehat{C} - d.0$= the non-centrality, degree of freedom and discrepancy parameters for the model being evaluated.

$\widehat{C} - d_{b,0}$= the non-centrality, degree of freedom and discrepancy parameters for the baseline model.

4. Tucker-Lewis Index (TLI): also referred to as the non-normed fit index (NNFI), is a comparative fit index that compensates for the effect of model complexity. Specifically, the TLI provides a penalty for adding freely estimated parameters that do not improve the model fit substantially. The value can fall below 0 and above 1. A recommended value for TLI is more significant than 0.90 (Hair et al., 2010).

$$\textbf{TLI} = \frac{\frac{\widehat{C_b}}{d_b}}{\frac{\widehat{C_b}}{d_b}} - \frac{\frac{\widehat{C}}{d}}{1}$$

$\hat{C}$ = the discrepancy of the model being evaluated.

d= the degree of freedom of the mode the model being evaluated

$\hat{C}_b$= the discrepancy of the baseline model

d_b= the degree of freedom of the baseline model.

5. Root Mean Square Error of Approximation (RMSEA): represents the average difference between correlations of the sample and predicated matrix by the model. It shows how well the model would fit the population's covariance matrix with unknown but optimally chosen parameter estimates. One of the most widely used measures of GOF. A value of RMSEA between 0.05 and 0.08 is acceptable (Hair et al., 2010).

$$\textbf{RMSEA} = \sqrt{\frac{\hat{F}_0}{d}}$$

$\hat{F}$= minimum value of the discrepancy function

d = degree of freedom

Based on the viability and statistical significance of the significant parameter estimates - the model's considerable fit (NC, CFI, GFI, TLI, RMSEA and AGFI), it is possible to conclude that the hypothetical model in the Vietnamese and Polish samples met the requirements. The results are shown in Table 5.14. For the Vietnamese sample, the normed chi-square was 2.151, which was less than 3, the GFI was 0.899, which was greater than 0.8, CFI was 0.948, which was more significant than 0.90, TLI was 0.940, which was greater than 0.90, RMSEA was 0.053

which was below 0.08 and AGFI was 0.873 which was more important than 0.8. For the Polish sample, the normed chi-square was 2.183, which was less than 3, the GFI was 0.897, which was greater than 0.8, CFI was 0.946, which was more significant than 0.90, TLI was 0.936, which was greater than 0.90, RMSEA was 0.057 which was below 0.08 and AGFI was 0.867 which was more significant than 0.8. All these goodness-of-fit measures indicated that the model of both samples has a good fit with the data.

Table 5.14. The research model fit summary

GOF	Chisquare/df	GFI	CFI	TLI	RMSEA	AGFI
Vietnam	2.151	0.899	0.948	0.940	0.053	0.873
Poland	2.183	0.897	0.946	0.936	0.057	0.867

Source: Data analysis, 2022.

5.4. Structural Equations Modelling (SEM)

Structural Equation Modelling (SEM) is a *"multivariate technique combining aspects of factor analysis and multiple regressions that enables the researcher to simultaneously examine a series of interrelated dependence relationships among the measured variables and the latent constructs"* (Hair et al., 2010). SEM will use multiple regression analysis (γ) to consider the developed model and research hypotheses. SEM was performed using IBM's Analysis of Momental Structure (AMOS), allowing to test the developed model fit, variance explanation, and research hypotheses. Figures 5.2 and 5.3 represented representations of the model developed in IBM AMOS of the Vietnamese and Ba Lan samples. In Figure 5.8 and 5.9, the large oval shapes represent the model six variables, the square shapes represent the measurement variables, and the small oval shapes represent the error term for each measurement variable.

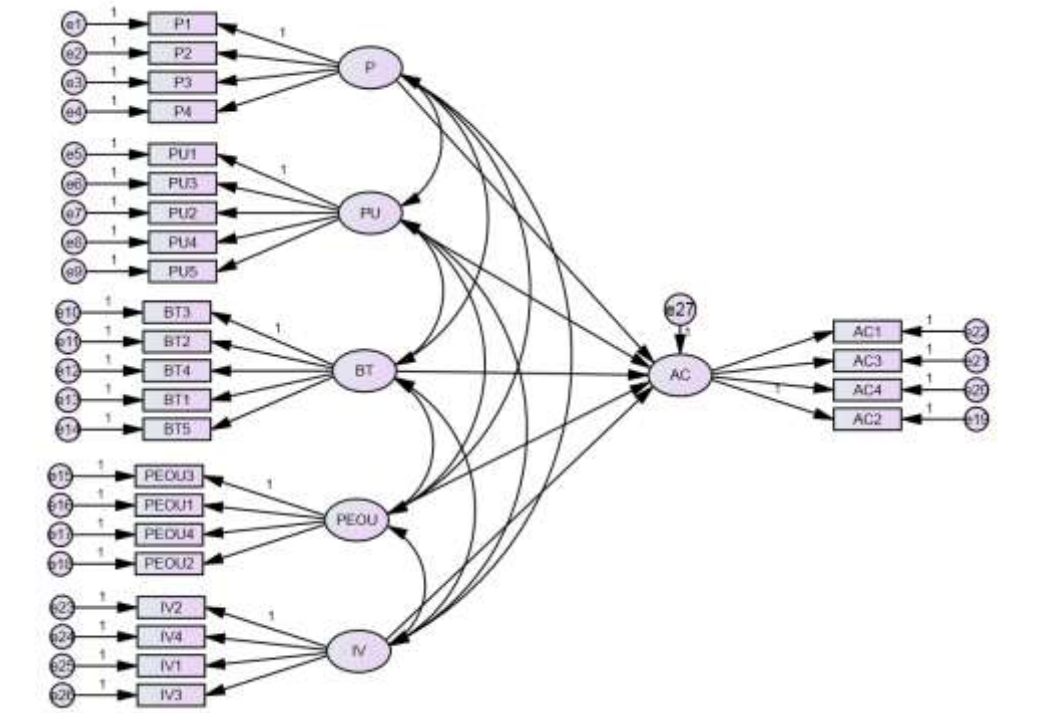

Figure 5.8. The developed model representation in IBM AMOS of Vietnamese sample
Source: Data analysis, 2022.

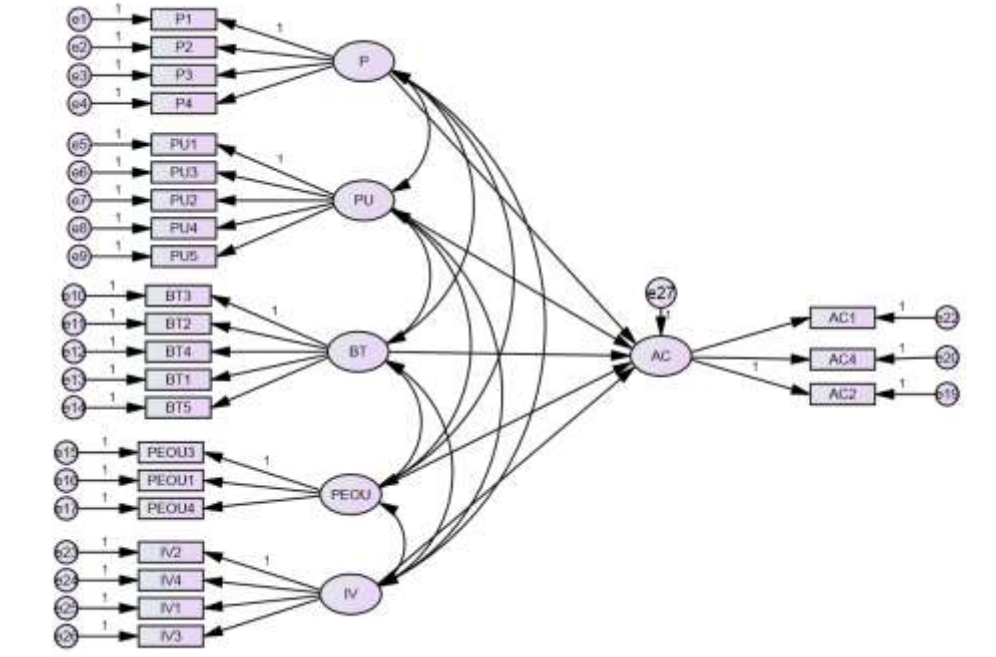

Figure 5.9. The developed model representation in IBM AMOS of Polish sample
Source: Data analysis, 2022.

The developed model results

The model results will be based on testing the research hypotheses. Hypothesis testing was performed to determine which predictor (independent variable) makes a significant contribution to the explanation of the dependent variable. Structural paths of the putative relationship between the proposed constructs were tested for two Vietnamese and Polish samples with the maximum likelihood method using AMOS version 22. Results The structural model is shown in Figures 5.10 and 5.11. The multiple-squared correlation values (R^2) indicate the amount of variance of the dependent variable that can be explained by the independent variables. The path coefficient (β) indicates a positive and negative relationship between the constructs and their statistical significance.

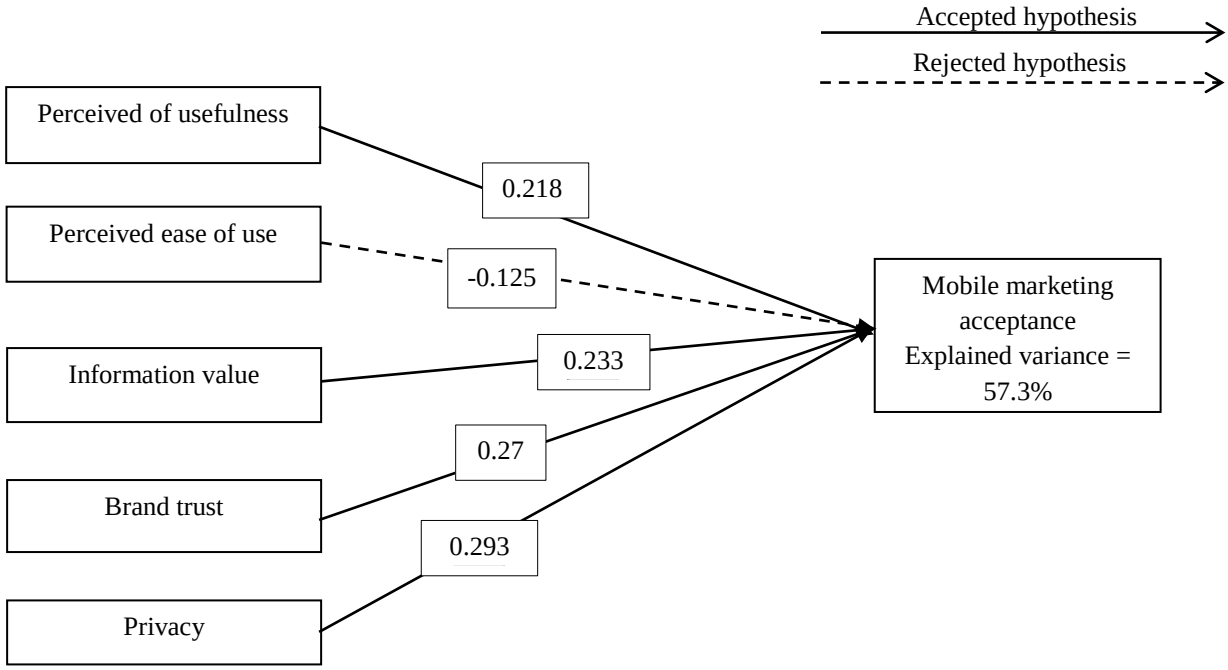

Figure 5.10. The developed model results of Vietnamese sample
Source: Data analysis, 2022.

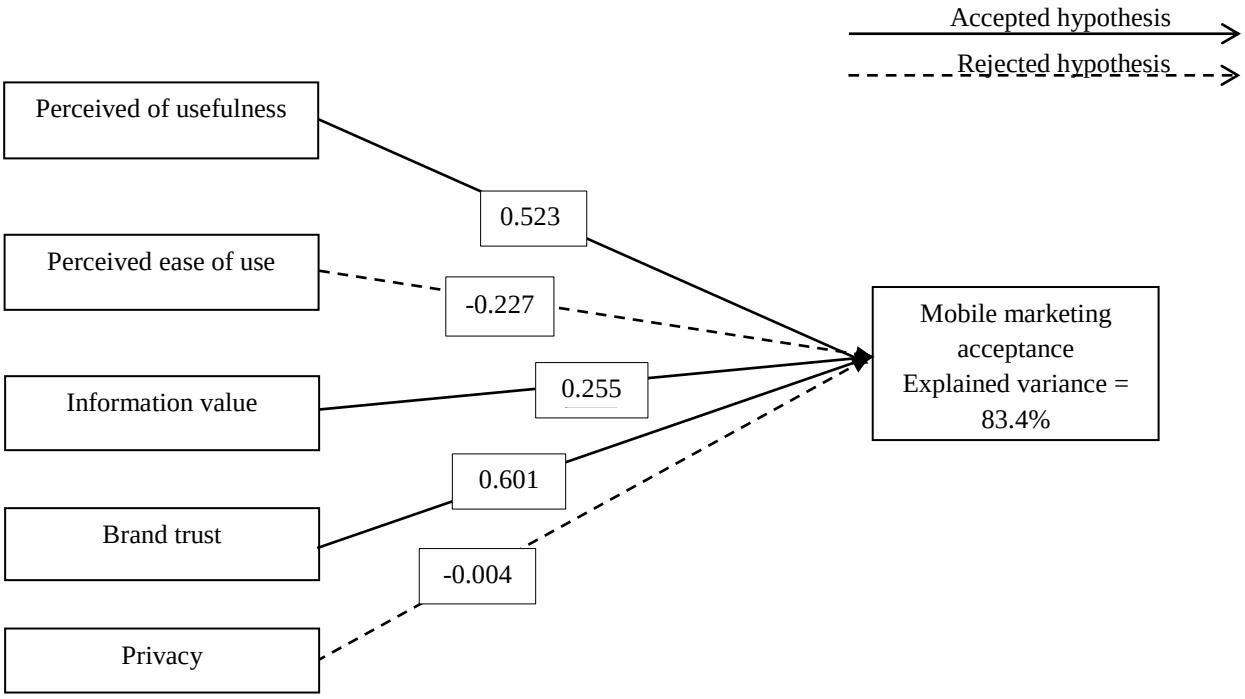

Figure 5.11. The developed model results of Polish sample
Source: Data analysis, 2022.

Overall, in the Vietnamese sample, the model indicated 57.3% of the variance in AC. Meanwhile, in the Polish sample, the model indicated 83.4% of the variance in AC. The table 5.15 showed the results of hypothesis testing in the Vietnamese and Polish samples.

Table 5.15. Hypotheses testing results

Hypothesis	Paths			Standardised coefficient (β)		Probability value (P-value)		Hypothesis result based on the probability value	
				Vietnam	*Poland*	*Vietnam*	*Poland*	*Vietnam*	*Poland*
H1a	PU	→	AC	0.218	0.523	**	***	Accepted	Accepted
H2a	PEOU	→	AC	-0.125	-0.227	0.058	0.055	Rejected	Rejected
H3a	IV	→	AC	0.233	0.255	**	**	Accepted	Accepted
H4a	BT	→	AC	0.270	0.601	**	***	Accepted	Accepted
H5a	P	→	AC	0.293	-0.004	**	0.941	Accepted	Rejected

*** = P-value ≤ 0.01, ** = P-value ≤ 0.05.
Source: Data analysis, 2022.

Hypothesis 0a: The ETAM model has a positive and significant impact on customer acceptance of mobile marketing.

In the Vietnamese sample, the model indicated 57.3% of the variance in AC. Meanwhile, in the Polish sample, the model indicated 83.4% of the variance in AC. The results showed that

the developed model could explain a high percentage of variance in acceptance. Therefore, hypothesis 0a is supported in both samples.

Hypothesis 1a: PU has a positive and significant impact on customer acceptance of mobile marketing.

In the Vietnamese sample, the results showed that PU of mobile marketing significantly influenced AC (p value = 0.037 < 0.05). The standardised direct effect of the PU on AC was β=0.218; which means that, when this construct increases by 1 standardised deviation, AC increases by 0.218 standardised deviation. In the Polish sample, the results showed that PU of mobile marketing significantly influenced AC (p value < 0.001). The standardised direct effect of the PU on AC was β=0.523; which means that, when this construct increases by 1 standardised deviation, AC increases by 0.523 standardised deviation. These findings suggest that when Vietnamese and Polish respondents expect mobile marketing to be easy to use, they increase adoption of them. Therefore, hypothesis 1a is supported in both samples.

Hypothesis 2a: PEOU has a positive and significant on customer acceptance of mobile marketing.

In Vietnamese and Polish samples, the results revealed that the PEOU of mobile marketing did not have a significant positive influence on AC (p value > 0.05). Therefore, hypothesis 2a was rejected in both samples.

Hypothesis 3a: IV has a positive and significant impact on customer acceptance of mobile marketing.

In Vietnamese sample, the results showed that the IV had a significant positive influence on AC (p value = 0.028 < 0.05). The standardised direct effect of this construct on AC was 0.233; which means that, when this construct increases by 1 standardised deviation, AC increases by 0.233 standardised deviation. In Polish sample, the results showed that the IV had a significant positive influence on AC (p value = 0.002 < 0.05). The standardised direct effect of this construct on AC was 0.255; which means that, when this construct increases by 1 standardised deviation, AC increases by 0.250 standardised deviation. It can be concluded that

the more valuable the information is to respondents, the more likely they are to accept mobile marketing. Therefore, hypothesis 3a is supported in both samples.

Hypothesis 4a: BT has a positive and significant impact on customer acceptance of mobile marketing.

In Vietnamese sample, the results showed that the BT had a significant positive influence on AC (p value = 0.004 < 0.05). The standardised direct effect of this construct on AC was 0.270; which means that, when this construct increases by 1 standardised deviation, AC increases by 0.270 standardised deviation. In Polish sample, the results showed that the BT had a significant positiveinfluence on AC (p value < 0.001). The standardised direct effect of this construct on BT was 0.601, which means that, when this construct increases by 1 standardised deviation, AC increases by 0.601 standardised deviation. Thus, it can be concluded that the greater the customer's trust, the higher the customer's tendency to accept mobile marketing. Thus, hypothesis 4a is supported in both samples.

Hypothesis 5a: P has a positive and significant impact on customer acceptance of mobile marketing.

In Vietnamese sample, the results showed that the P had a significant positive influence on AC (p value < 0.001). The standardised direct effect of this construct on P was 0.293; which means that, when this construct increases by 1 standardised deviation, AC increases by 0.293 standardised deviation. In Polish samples, the results revealed that the P of mobile marketing did not have a significant positive influence on AC (p value = 0.941 > 0.05). From the results, it can be concluded that Vietnamese respondents are very concerned about their privacy. When privacy is guaranteed, it is easier for them to accept mobile marketing. However, Polish respondents did not consider this to be an important factor in their acceptance of mobile marketing. Therefore, hypothesis 5a was supported in Vietnamese sample but was rejected in Polish sample.

The moderating effect of culture

This section compares the differences between nationality groups – Vietnamese and Polish. In the structural model, the research model will be tested for the differences between the nationalities according to the hypotheses. Multigroup analysis in AMOS classifies data based on

subgroup value and cluster analysis will be performed between nationalities simultaneously. Furthermore, chi-squared difference Δx^2 will be used to test whether there is a significant difference between nationalities at the structural model level. Chi-square is "*a statistical measure of difference used to compare and estimate covariance matrices*" (Hair et al., 2010). The difference in chi-square Δx^2 can be calculated by calculating chi-squared Δx^2 for the double-targeted model; the first has no weight constraint and the second has a weight constraint. If the difference in chi-squared Δx^2 is significant (p-value < 0.05), then the model is not nationality-equivalent and vice versa. The analytical results obtained for the Vietnamese and Polish samples are shown in Table 5.16.

Table 5.16. The chi-square Δx^2 for the measurement model of Vietnamese - Polish sample

Measurement Model	x^2	df (degree of freedom)
Unconstrained Model	1478.8	568
Constrained Model	1503.8	573
The difference in chi-square	25	5
P-value	0.000139334 < 0.05	

Source: Data analysis, 2022.

The p-value is 0.0001 < 0.05 (95% confidence level), so there is a difference in the impact of variables in the model between respondents of different nationalities. Table 5.17 explained the difference between the effects of the independent variables and the dependent variables for the two groups of nationality.

Table 5.17. The significantly different hypotheses over nationality

Hypothesis	Paths			Standardised coefficient (β)		Probability value (P-value)		Hypothesis result based on the probability value	
				Vietnam	*Poland*	*Vietnam*	*Poland*	*Vietnam*	*Poland*
H1b	PU	→	AC	0.218	0.523	**	***	Accepted	
H2b	PEOU	→	AC	-0.125	-0.227	0.058	0.055	Cannot test	
H3b	IV	→	AC	0.233	0.255	**	**	Accepted	
H4b	BT	→	AC	0.270	0.601	**	***	Rejected	
H5b	P	→	AC	0.293	-0.004	**	0.941	Accepted	

*** = P – value ≤ 0.01, ** = P-value ≤ 0.05.

Source: Data analysis, 2022.

Hypothesis 0b: Culture determines significantly the impact of ETAM on mobile marketing acceptance. It is higher in Poland than in Vietnam.

The results in multigroup analysis showed that chi-squared difference Δx^2 is signifiant (p-value < 0.05). It can be confirmed that there is a difference in the impact of variables in the model between Vietnamese and Polish respondents. Moreover , the model indicated of the variance in AC in Polish sample (83.4%) is higher than in Vietnamese sample (57.3%). Thus, hypothesis 0b is supported.

Hypothesis 1b: Culture determines significantly the impact of PU on mobile marketing acceptance. It is higher in Poland than in Vietnam.

According to the obtained results, the impact value of PU (β= 0.218) in the Vietnamese sample is lower than this value in the Polish sample (β=0.523). Therefore, hypothesis H1b is supported. It can be observed that the Polish respondents rated the PU's role more highly in their acceptance of mobile marketing than the Vietnamese respondents. This result confirmed the recommendations of previous studies. It is usefulness that is a more important predictor of technology use for individualist countries than for collectivist countries.

Hypothesis 2b: Culture determines significantly the impact of PEOU on mobile marketing acceptance. It is higher in Poland than in Vietnam.

In this study, the effect of PEOU in both samples on AC was not statistically significant. Therefore, hypothesis 2b cannot be tested.

Hypothesis 3b: Culture determines significantly the impact of IV on mobile marketing acceptance. It is higher in Poland than in Vietnam.

The analysis results indicated that the impact value of PU (β= 0.233) in the Vietnamese sample is higher than this value in the Polish sample (β=0.255). Therefore, hypothesis H3b is supported. It can be commented that this study has similar finding compared with previous studies (e.g. Haghirian et al.,2008; Koo et al., 2012; Muralidharan et al., 2015). In these studies, individualist countries often place more importance on information value than collectivist countries.

Hypothesis 4b. Culture determines significantly the impact of ETAM on mobile marketing acceptance. It is lower in Poland than in Vietnam.

The analysis results indicated that the impact value of PU (β= 0.270) in the Vietnamese sample is lower than this value in the Polish sample (β=0.601). Therefore, hypothesis H4b is rejected.

Hypothesis 5b. Culture determines significantly the impact of ETAM on mobile marketing acceptance. It is lower in Poland than in Vietnam.

The analysis results show that P has a positive effect on mobile marketing adoption for the Vietnamese sample but not for the Polish sample. Thus, it can be concluded that the impact of P on the Vietnamese sample is higher than that of the Polish sample. Hypothesis 5b was supported.

This chapter presented data analysis for the developed model, research hypotheses and Vietnamese and Polish respondents' assessments. The part of model analysis and hypothesis testing can be divided into four main steps based on statistical analysis, data refinement, confirmatory factor analysis, multiple regression analysis and multi-group analysis. The collected data were checked for missing data, normality, linearity, and outliers during data screening. The developed model was tested for unidimensionality, suitability, and structural validity in confirmatory factor analysis. First, unidirectionality ensures that the measured variables are loading into an underlying variable. All the measures achieved unidirectional condition by having the upper factor loading (0.50), except for the Polish sample's two measures (PEOU2, AC3). Second, the goodness of fit of the developed model was measured using five measures, including GFI, CFI, TLI, RMSEA and AGFI. The developed model has passed the good level of the measure of fit. Furthermore, in the Polish sample's CFA analysis, the model's good fit was further improved by removing two measures (PEOU2, AC3) that did not achieve the squared multi correlation and factor loading conditions. Third, multiple regression analysis was used to test the developed model and research hypothesis in two samples. The results confirm the model's ability to better explain the dependent variable's variance. Furthermore, the research hypothesis demonstrates the importance of variables to predict the acceptance of Vietnamese and Polish respondents for mobile marketing.

Finally, a multi-group analysis examined how nationality differences influenced the developed model. The results showed that both nationalites have different perceptions of model variables in both samples. The research model variables and the significance of each were tested based on their hypothetical results. The results showed that the research model has a change in each sample. Specifically, in the Vietnamese sample, there were four variables (PU, IV, BT and P) in the model that have a statistically significant impact on acceptance of Generation Z, PEOU had no impact. While in the Polish sample, PEOU and P were two variables that did not have a statistically significant impact on their acceptance. Furthermore, the study evaluated the performance of the research model based on the explained variance of mobile marketing adoption. The findings indicated that the extended model works well in both samples to explain the variance of the above variable. In addition, this section also examined the differences between the Vietnamese and Polish samples, in order to assess the impact of cultural factors. The results indicated that there is a difference between Vietnam and Poland for variables affecting mobile marketing adoption. The next chapter discusses the results and data findings in detail. The next chapter will discuss the results of the model variables. Variables will also be addressed based on their dimensions, intrinsic or extrinsic. Furthermore, mobile marketing activities of enterprises are also proposed for the Vietnamese and Polish markets based on the results of the analysis of the research model. Finally, contributions will be highlighted, followed by limitations of the study, implications for future work, and finally conclusions.

CHAPTER VI
THE CONCEPT OF MOBILE MARKETING ACTIVITIES FOR GENERATION Z IN POLAND AND VIETNAM

This chapter discussed the results of data analysis on variables, hypotheses, the performance of the research model, perspectives and differences between Vietnam and Poland. The significance of each variable was explained individually and as a group depending on whether they are in the outer or the inner group. The performance of the research model was measured by the explanatory variance in the dependent variable, which is acceptance. Moreover, this chapter also discussed the impact of cross-culture factors by pointing out the difference in perception of Vietnamese and Polish people. Finally, based on the results, this chapter presented mobile marketing activities for Generation Z in Vietnam and Poland.

6.1. Verification of the theoretical model of mobile marketing acceptance in Vietnam and Poland

The study's objective is to develop an extended TAM to explain the mobile marketing acceptance of Generation Z in Vietnam and Poland. TAM is a well-established acceptance model for information technology and validated in several previous studies. It would be helpful to find out the extent of TAM's application to mobile marketing in Vietnam and Poland. Moreover, the study also shows the difference in the impact of each variable on the perception of Vietnamese and Polish people. The developed model includes six variables classified into two groups. The first group is the TAM model constructs: perceived usefulness (PU), perceived ease of use (PEOU), and acceptance of use (AC). The second group focuses on extrinsic motivational aspects: information quality (IV), brand trust (BT) and privacy (P). The identified variables showed their influence on the acceptance of Generation Z in Vietnam and Poland. Specifically, in the Vietnamese sample, the factors affecting the acceptance of mobile marketing included PU, IV, BT and P. Meanwhile, in the Polish sample, PU, BT and IV had a significant effect on their acceptance. P and BT were the most influential factors for Vietnamese and Polish Generation Z, respectively. The results on factors that have a significant impact on mobile marketing adoption

in the two samples are shown in Figures 6.1 and 6.2. Next, the study conducted an in-depth analysis of each element of the research model.

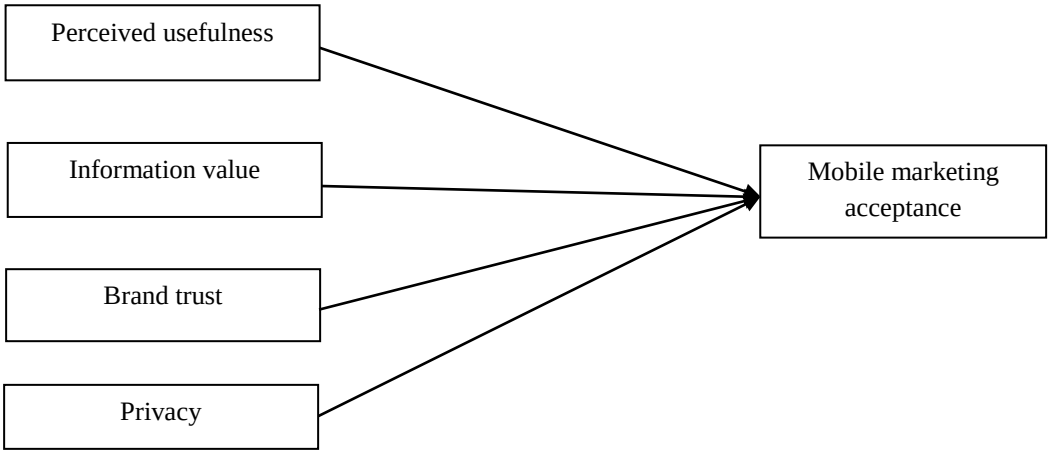

Figure 6.1. Significant factors in the Vietnamese sample
Source: Data analysis, 2022.

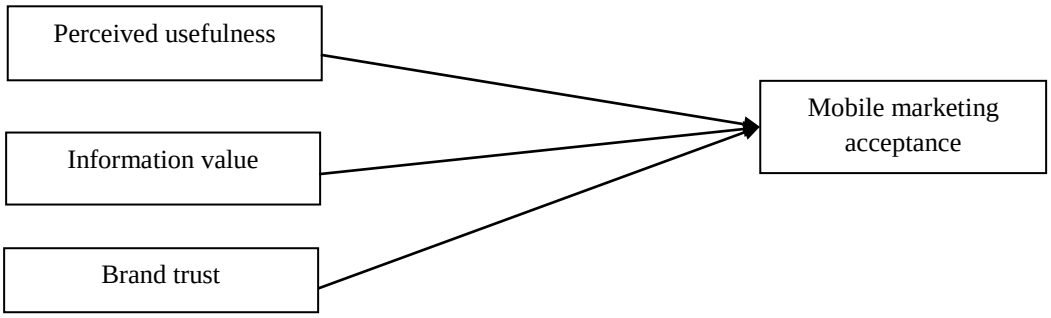

Figure 6.2. Significant factors in the Polish sample
Source: Data analysis, 2022.

First, PU positively affected AC in both the Vietnamese and Polish samples. This result is similar to previous studies (Billore & Sadh, 2015; Afzal et al., 2015; Saeed & Bekhet, 2018; Murillo-Zegarra et al., 2020). Revels et al., 2010 stated that PU is one of the basic premises of innovative uses, such as mobile technology. In mobile marketing, PU refers to how consumers perceive the use of mobile marketing services as beneficial to them in their daily lives (Saeed & Bekhet, 2018). Thus, in this case, Generation Z in Vietnam and Poland are very interested in their benefits when participating in mobile marketing. These benefits can be discounts and special offers, cost-effectiveness or useful information about products and services, shopping efficiency of consumers. As a result, as they get more benefits from mobile marketing, they tend to accept ads more (Billore & Sadh, 2015).

However, the level of interest in PU in each sample is not the same, or it can be said that the impact of PU on AC in each sample is different. Specifically, PU is the fourth determinant of acceptance in the Vietnamese sample, while it is the second in the Polish sample. Researching on this issue, Li et al. (2010) found that usefulness was an essential predictor of technology use for individualist countries but not for collectivist countries. In addition, Muk (2007) has observed that consumers in an individualist culture are based entirely on individual considerations. Meanwhile, usage intentions in collectivist cultures are influenced by social norms and underlying social groups. They often ask for opinions from others before making a decision. As Vietnam is a collectivist country, the acceptance of mobile marketing may be influenced by factors related to groups (e.g. relatives, friends, colleagues). Poland is an individualist country; they will care about efficiency, tasks and work. So when they get into mobile marketing, they will evaluate how mobile marketing can help improve their performance, which is the purchasing and decision-making process. Therefore, Polish Generation Z respondents appreciated the role of PU in mobile marketing adoption more than Vietnamese ones.

Second, PEOU had no significant impact on the acceptance of Generation Z respondents in the two samples. Views on PEOU for technology adoption are still mixed. Some studies suggested that PEOU plays an essential role in mobile marketing adoption (Yu & Buahom 2013; Agarwal & Karim, 2015; Yadav et al., 2016; Lanlan et al., 2019). However, some studies showed that PEOU has no impact on consumer acceptance (Hanh et al., 2020; Murillo-Zegarra et al., 2020). The results in this study are consistent with the second statement. Murillo-Zegarra et al. (2020) explained that many consumers have become familiar with technologies and use them. Therefore, performing operations is a simple process, which reduces the importance of the ease-of-use variable in the perceived value of the service, resulting in this factor having little effect on customers' acceptance of the technology. As analyzed before, Generation Z is the first generation to be directly and widely exposed to digital technologies such as social networking sites and information on the Internet (Turner, 2015). They grew up in a highly complex media and technology environment, making them a much more professional and Internet-savvy generation than their predecessors (Dimock, 2019). The advent and growth of the Internet, smartphones, laptops, freely available networks and digital media have significantly impacted the ethos of Generation Z (Singh & Dangmei, 2016). Hence, Generation Z is also known as iGen, digital native, network generation, iGeneration or technology generation (Betz, 2019; Wiedmer, 2015).

This characteristic leads generation Z respondents in Vietnam and Poland not to appreciate the ease of use of mobile marketing. Consequently, this factor did not affect their acceptance.

Third, IV is the next factor that positively influences the adoption of mobile marketing by Generation Z in both study samples. It should be noted that the core purpose of marketing in general and mobile marketing, in particular, is to provide information to consumers. The majority of consumers approach marketing also for information (David et al., 2002). Aydin and Karamehmet (2017) identified the direction in which marketing-related information, commonly referred to as information, is accepted as an essential factor creating value for consumers and influencing consumers' attitudes toward marketing. Agreeing with the above statement, Kim et al. (2016) assert that informativeness is one of the most fundamental attributes of all marketing forms. The reason is that describing a product in detail and providing the necessary information is an essential clue to the perceived value of marketing activities to consumers. Consumers see marketing as providing information and creating value. It is this function that positively influences their attitude towards marketing campaigns. So, in this case, Generation Z in both Poland and Vietnam are interested in the informational value that mobile marketing will bring to them. This value can be related to content quality, correctness, timeliness, and usefulness. The more valuable the source of information they receive, the higher their mobile marketing acceptance.

Besides, when comparing the two samples, the analysis results indicated that the mobile marketing acceptance of Generation Z participants in Poland is influenced by information value more than participants in Vietnam. Many studies confirmed that cultural differences could affect the perceived value of information. They claimed that collectivist societies are less concerned with the value of information than individual societies. Koo et al. (2012) emphasized that people in individualist cultures prefer clear and concise messages. Besides, Muralidharan et al. (2015) studied the differences between Indians and Americans. They also argued that Indians often value the entertainment value of mobile marketing more while informativeness is vital for the American sample. In addition, the purpose of using mobile devices is also a reason. Muralidharan et al. (2015) stated that consumers in individual societies use it for personal shopping and information search, while consumers in collectivist cultures have other purposes, such as making friends, meeting new people and participating in newsgroups. Therefore, when

interacting with mobile marketing, Polish Generation Z looks for information to help in the buying process. Vietnamese Generation Z can focus on other factors.

Fourth, BT has shown critical towards the Vietnamese and Polish participants' acceptance. Mobile devices are highly personal, which leads to consumers feeling unsafe when making transactions via mobile devices. Because of this, Dix et al. (2016) identified trust issues as a significant obstacle to mobile marketing adoption and loyalty development. Generation Z respondents in Vietnam and Poland emphasize trust in the brands they interact with. This finding is consistent with many previous studies (Persaud and Azhar, 2012; Amoroso, 2013; Menon, 2019). These authors also highlighted the role of organizational/brand trust in mobile marketing adoption. They claimed that a higher level of brand trust leads to higher satisfaction when shopping online using a mobile device. This impact has stimulated interactive acceptance of mobile marketing.

When comparing the effects of BT on AC in each sample, the analysis results showed that Generation Z respondents in Poland highly valued BT compared with Generation Z respondents in Vietnam. Poland has a high uncertainty avoidance index (93) (Hofstede, 2010). According to Hofstede (2010), societies with high uncertainty avoidance like Poland often worry about the future and actively avoid risks to create a feeling of control. So they are very concerned with trust. Trust is often assessed based on two main dimensions: cognitive and affective dimensions (Batra et al., 1996). The first category includes assessments of power, prestige, and competence (expertise), while the second involves assessments of trustworthiness and attractiveness (Okazaki 2005). Thus, in this case, the Polish respondents could assume that the best marketing activities are represented by the business or brand they have had previous purchasing experience with. With limited space on mobile screens, a business' good reputation could affect the perceived value of mobile marketing. Trust contributes to reducing risk when consumers have to make decisions about unknown wireless Internet communication (Goldsmit et al., 2000). Whereas Vietnam has a low uncertainty avoidance index (30), these countries maintain a more relaxed attitude, do not have many binding rules and do not view innovation as a threat. Perhaps because of this, Vietnamese respondents are very open to exposure to mobile marketing innovations.

Fifth, P only affects respondents in the Vietnamese sample but does not affect respondents in the Polish sample. Vietnamese respondents are said to be wary of privacy threats,

interested in protecting this right. It is similar to the privacy risk aversion of Indian consumers towards mobile shopping apps (Chopdar et al., 2018). Compared to this, study results from the Polish sample showed the absence of a significant privacy influence on mobile marketing adoption and usage, which confirmed that people in Poland are less concerned with privacy than their Vietnamese counterparts. The contrasting perceptions of privacy may be due to cultural differences between the two countries. In section 3.4, a significant difference between Vietnam and Poland exists regarding the cultural aspect of Hofstede (2001). Therefore, the higher impact of privacy on Vietnamese compared to their Polish counterparts may result from significant differences in that cultural aspect, namely individualism/collectivism, to the findings of this study. Many studies have reported that countries with a high individualism index are less likely to have privacy concerns (Bellman et al., 2004; Diev et al., 2006; Lowry et al., 2011; Thomson et al., 2015). Individualist societies tend to accept mobile marketing more due to their inherent advantages. In addition, Fleming et al. (2021) asserted that people from a collectivist culture might be more sensitive to their data value. They are more likely to be interested in privacy behaviour that is more consistent with their personal data than those from individualism.

6.2. The proposal of mobile marketing activities for Generation Z in Poland and Vietnam

As pointed out in the methodological part of the thesis, the main objective of the thesis is to evaluate the factors affecting the acceptance as well as to propose the concept of mobile marketing activities. Therefore, in this section, the author based on the research results has introduced the concept of mobile marketing for Generation Z in Poland and Vietnam. Developing an effective mobile marketing campaign is more complicated than creating a traditional program geared towards laptop and desktop users. Mobile marketing activities need to be planned, implemented and tested for multiple devices (smartphones, tablets, smartwatches etc.) and different operating systems. At the same time, businesses must adjust to mobile device constraints on screen sizes and keyboards. In addition, the immediacy, location, and personalization attributes of mobile devices increase the need to develop message catalogues to reflect the above qualities such as weather conditions (instant and context), distance to the store (location), consumer preferences, and past purchase behaviour (personalization). Most

importantly, businesses need to review whether their existing mobile marketing efforts are relevant and accepted by customers in the target market. Based on the mobile marketing acceptance model, the study proposed some recommendations for mobile marketing activities for Gen Z customers in Vietnam and Poland markets. The SEM analysis suggested factors affecting the acceptance of Generation Z in Vietnam and Poland. Specifically, for the Vietnamese market, businesses need to focus on building activities related to four factors, namely PU, IV, BT and P. While, for the Polish market, three factors PU, IV, BT, need to be concerned by businesses. Figure 6.3 and 6.4 outlined the mobile marketing activities that businesses can implement based on the factors influencing Generation Z acceptance in Vietnam and Poland.

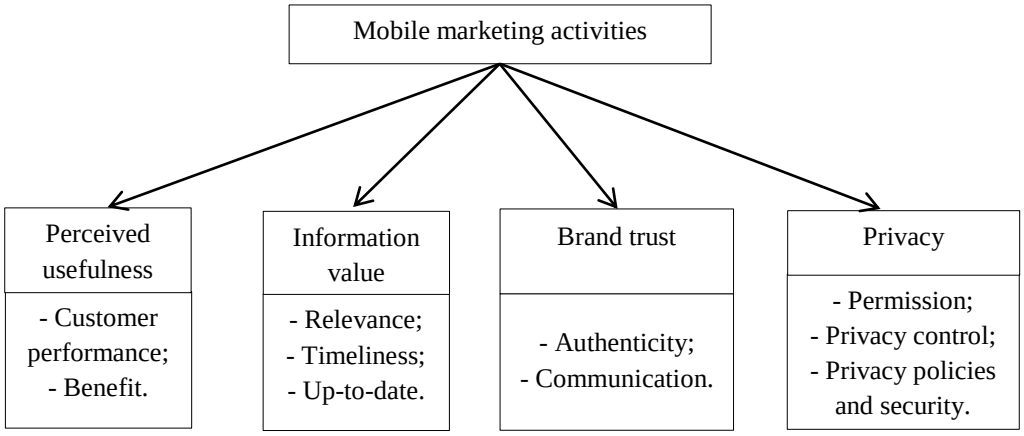

Figure 6.3. Concept of mobile marketing in Vietnam
Source: own study.

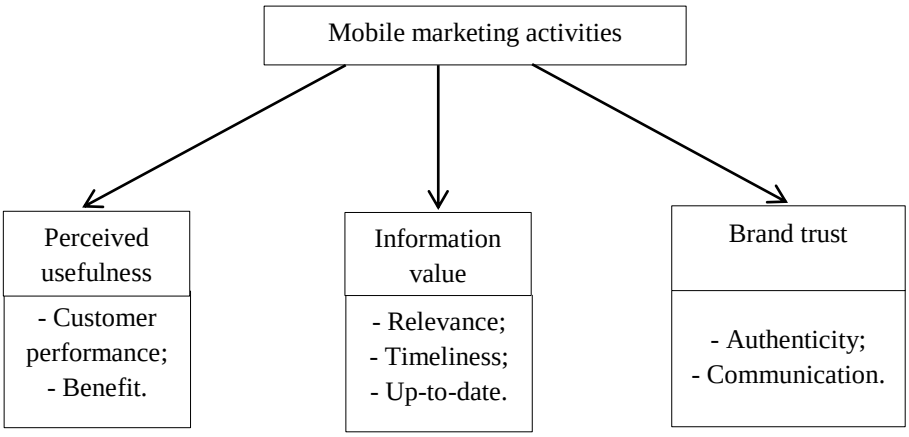

Figure 6.4. Concept of mobile marketing in Poland
Source: own study.

Perceived usefulness

The results showed that PU is an important factor to improve the acceptance of Generation Z for mobile marketing in Vietnam and Poland. Thus, businesses need to take specific actions to encourage Generation Z to perceive the usefulness of mobile marketing. In this study, PU was measured using indicators:

- *"I would find mobile marketing useful"*
- *"I can benefit from mobile marketing schemes"*
- *"Mobile marketing helps to save time in looking for product and service"*
- *"Mobile marketing allows me to buy more efficiently"*
- *"Mobile marketing allows me to make purchases more quickly"*

The above indicators focus on two main contents: the performance of customers in mobile marketing and the benefits that businesses bring to them through mobile marketing. Therefore, the Authors suggested that mobile marketing activities in Vietnam and Poland can be based on these contents to enhance the useful value received for customers.

First, the Author recommended activities to improve customer performance when interacting with mobile marketing. Therefore, companies can boost customer performance building a mobile-friendly website, which can make customer to make purchases more quickly and efficiently. Several mobile device disadvantages affect customer performance, which is crucial for keeping in mind when businesses conduct mobile marketing activities. Moreover, mobile devices sometimes make accessing websites and processing purchases very difficult for users to order products or services online. For example, some technical defects were discovered while placing the order, or some products did not appear fully on mobile devices compared to other devices (Shankar et al., 2016). As a result, it can sometimes be difficult for mobile marketing to strike a deal. These obstacles waste the customer's time. However, research conducted by the online Internet marketing company Portent showed that the majority of top websites were, in fact, not mobile-friendly (Lurie, 2015). In order to be able to judge a website is mobile-friendly, Google has officially set their standards for what "*mobile-friendly*" really means. It determines the value of a website to consumers and plays an integral part in ranking the website in search results. According to Google (Osborne, 2020), the Author compiled a number of characteristics that make a website mobile-friendly. Through these features, businesses can

build a website that suits the needs of Generation Z in Vietnam and Poland. These features include:

1. Popular software: Companies need to avoid unpopular software on mobile devices (like Flash). Operating systems play a big part in supporting the user's ability to interact with business website. Because any website that does not synchronize well with the basic usage dynamics of operating systems can cause inconvenience to users. Making business websites cross-platform in a mobile environment is essential. As a result, businesses can provide great customer experiences.
2. Links and clickability: Companies may place the links far enough apart to exploit the correct links easily. Navigation is another essential factor to keep in mind to be mobile-friendly. Customers cannot hover their fingers over a link to drop down like when using a computer mouse. A responsive website will take this into account and use alternatives;
3. Responsive design: The company can apply responsive design to websites. A responsive design website resizes its elements to adapt to the viewing system. Regardless of the screen size, a customer views the website, the images, text, navigation, and graphics will adapt quickly. Size content for the screen so the user doesn't have to scroll horizontally or zoom. Thus, customers can view the company's website on mobile platforms.

However, if the business's existing website cannot be effectively converted into a responsive website, a separate mobile website or mobile applications may need to be considered. According to the research's investigation, Generation Z in Vietnam and Poland have high interaction in two forms, namely: mobile websites and mobile applications. Having mobile sites is the current trend in mobile marketing (Digital Marketing Institute, 2018) because these websites will improve the experience for customers and reduce their search time. This type of website is built and hosted on a subdomain. When a business has a different mobile website, it has its HTML and doesn't need to look like the main website. Besides, mobile applications can also be a suitable choice, especially for Generation Z in Poland, as they interact with mobile apps the most (data analysis, 2021). Typically, consumers prefer an app over a mobile website experience (Osborne, 2020). Mobile-specific enterprise applications offer users outstanding benefits in releasing promotional and marketing services (Khalufi et al., 2019). Some activities

that businesses can take to increase the performance of customers through mobile applications are:

- Sending messages to notify users through mobile applications when customers cannot receive calls;
- Providing notifications regarding new and sold products;
- Assisting customers to save products or services that interest them for later access;
- Quickly solving problems that customers encounter during the purchase process;
- Building connections with customers. Tiago and Veríssimo (2014) emphasize that companies create mobile applications that help them connect with customers. All records of customer activity can be easily tracked and accessed by the company when the customer registers on the application. Thereby, businesses can provide better experiences for customers and drive them to accept/engage with mobile marketing.

Besides, companies also need to carefully examine the data to determine whether making a brand-specific mobile application or mobile website is the right decision (Osborne, 2020). Such data can be the amount of returned traffic received and the frequency of purchases on mobile devices.

Second, businesses provide benefits to consumers through mobile marketing campaigns to improve PU. Generation Z in Vietnam and Poland are both interested in the benefits that mobile marketing brings to them. This index has the fourth-largest impact on the Vietnamese sample and the first on the Polish sample for PU (shown in Table 5.3). The Author proposed the benefits that businesses can bring to customers through the four Ps in mobile marketing.

Product: Regarding products, the Author thought that businesses can perform a number of activities through mobile marketing such as:

- The business can provide the product/service that best fits the customer's context thanks to location-based services, a dominant feature of mobile devices (Bauer et al., 2005). Companies can apply the best use of this service by offering customers products or services relevant to their current location. As a result, it can lead to more traffic to local stores and an increased likelihood of an immediate purchase.
- Companies can collect information about customer feedback to create the product/service they want through mobile marketing channels. Based on the

collected information, businesses can build new product strategies suitable for customers.

- Businesses should focus not only on the impact of mobile media on core products but also on enhanced products (e.g. payment systems). Kumar et al. (2018) pointed out that mobile-based digital payment systems are essential. Because this form will improve customer interaction and transaction efficiency in the customer's purchasing process, more importantly, this system can reduce the risks associated with crime, thereby ensuring customers' safety (Tong et al., 2020).

Price: To deliver price-related benefits, businesses need to use dynamic pricing for mobile marketing such as:

- Businesses can adopt flexible pricing strategies to promote mobile products/services and attract new customers.
- Businesses can apply insights about customer price sensitivity to price discrimination on mobile devices. Kübler et al. (2018) estimated how cultural, economic and structural factors influence sensitivity to price changes. The authors found that price sensitivity is indeed heterogeneous across different countries. Therefore, marketers to consider the cultural and economic factors that affect customers' price levels when designing pricing strategies across other markets.
- Businesses can also build pricing strategies according to the geographic location of their customers, specifically at competitors' locations, with various discounted prices to attract customers. Mobile devices can capture the customer location and purchase information, making it easier for marketers to implement this strategy. This approach gives new customers more options and doesn't erode profits from existing customers.

Place: Mobile marketing is a form of multi-channel marketing that plays the role of distribution to customers. As a result, customers have more choices in finding information about products/services during their purchases. With the popularity of mobile devices, customers quickly access product information and discover promotions. Therefore, businesses can carry out activities to benefit customers such as:

- Businesses have better access to customer purchase intent with mobile search and trajectory data when they move through the store. From that, companies can provide many opportunities to target in-store shoppers for products.

- Businesses can adopt a number of new mobile technologies such as augmented reality and smart devices. These devices can be placed in physical stores to assist customers in the purchasing process. However, businesses should learn and cultivate a comprehensive understanding of customer behavior in these new channels to be able to apply effectively.

Promotion: With the advent of mobile technologies that combine location, time and environment information, businesses can design and execute new promotional campaigns on mobile devices. In the past, the term "one size fits all" was used by many marketers; however, this term is increasingly being replaced by personalized promotions with purchase history, preferences and time for each customer. Fong et al. (2019) emphasized that targeted promotion on mobile devices is the promotion campaign that businesses should implement. The Author proposed some activities that businesses can do such as:

- Companies may accurately detect a customer's distance to a store and even their in-store shopping trajectory for better contextual ad targeting. For example, a person uses his/her mobile device to search for "coffee shop". A paid ad will then show the location of the nearest coffee shop (relevance), the distance to the cafe and how long it takes to get there + any special offers will be delivered in the next 15 minutes. This person clicks on an ad to claim a coupon and provides a phone number or email address to identify themselves and claim a discount or promotion.
- Businesses can also personalize advertising and creative content based on each customer's mobile search behaviour, shopping preferences, and mobile behaviour.
- Businesses can combine promotion campaigns with broader environmental factors such as weather. Li et al. (2017) showed that customers are more responsive and make purchases faster in sunny weather than in cloudy weather; however, the response is lower and slower in wet weather. Based on this finding, businesses can choose when to deliver marketing messages to customers. As such, targeted mobile promotion benefits both businesses and customers. Companies improve their ability to respond to and interact with ads, and customers receive promotion information tailored to their needs, interests and context. They are no longer bothered by inappropriate message content at the wrong time.

In summary, PU represents the importance of customers viewing the acceptance and use of mobile marketing to enhance their effectiveness in the purchasing process. Therefore, businesses need to carry out activities to support and promote the effectiveness of the customer's purchasing process through mobile devices. In this study, the Author emphasized that businesses need to focus on performance and benefits. Once customers perceive mobile marketing to support the buying process from searching information to choosing products or they can get the benefits that only mobile marketing brings, it will be easier for them to access and accept this form.

Information value

The value of information is the next factor that businesses need to consider when improving the acceptability of mobile marketing for Generation Z in Vietnam and Poland. It can be said that information plays an essential role in the decision-making process of Generation Z (Băltescu, 2019). Because they have been exposed to the Internet, social networks and mobile systems, they are very comfortable collecting and cross-referencing multiple information sources and integrating virtual and offline experiences. Almost all information from products, services or prices that Generation Z contains comes from the Internet platform. Özkan and Solmaz (2017) emphasized that Generation Z loves to watch and learn about marketing activities conducted through their mobile devices. Generation Z wants to make informed decisions about the brands and products they choose, so they are cautious in reading marketing information (Băltescu, 2019). Therefore, enhancing information value in mobile marketing is an activity that businesses need to pay attention to. In this study, the informational value of mobile marketing was evaluated based on indicators:

- *"Mobile marketing gives me timely information about available products"*
- *"Mobile marketing gives me relevant information about available products"*
- *"Mobile marketing is a good source of information about available products"*
- *"Mobile marketing contains updated information on available products"*

In Table 5.4, Vietnamese generation Z respondents highly value the relevance of the information they are looking for, while Polish Gen Z respondents are most interested in the up-to-date information. Based on the above indicators, businesses can conduct activities to improve the value of information in mobile marketing.

First, businesses increasingly provide relevant information to customers through mobile marketing. That is, companies need to build informational content related to the needs and preferences of customers. Informative content is critical in implementing a successful mobile marketing campaign because the content is an essential factor for attracting and retaining customers (Jin & Villegas, 2008). Vatanparast and Asil (2007) also agreed that content in mobile marketing needs to be developed carefully. Because customers reading from a mobile device can take more time and effort than from a desktop computer due to space limitations and the interfaces of mobile devices. To enhance content relevance in mobile marketing, basing on Gupta (2021) concept, the Author emphasized two crucial issues:

- **Customer profiles**: Berman and Zarb (2016) emphasized that customer profiles have an essential role in building the informational content of mobile marketing. Businesses may collect mobile customer data based on purchase history, social media usage, demographic data and usage behaviour, and more. This data is provided either by the corporate loyalty program or highly profiled by integrating Google filters such as contacts, interests and search queries (Dickenger & Haghirian, 2004). From there, businesses can build complete customer profiles to develop marketing content and improve its relevance.
- **Personalization**: Personalization entails understanding an individual's needs, assisting in their practical implementation, and knowingly responding to those needs within a context (Riecken, 2000). Personalization increases message relevance, which has been found to positively affect attitudes towards marketing (Dickenger & Haghirian, 2004). Consumers appreciate receiving the right messages because they feel that they are participating in an exchange that will be mutually beneficial (Krishnamurthy, 2001). Personalization makes for a more positive user experience, attracting consumer acceptance of mobile marketing and increasing consumer engagement (Beneke et al., 2010). In addition, personalization ensures that recipients of promotional messages are less likely to be overwhelmed with too many irrelevant messages. It also reduces the likelihood of messages being perceived as spam and thus minimizes consumers' level of irritation (negative attitudes) (Yaniv, 2008).

Second, businesses provide timely information to customers through mobile devices. According to the research results, both Vietnamese and Polish samples highly appreciate this

activity (ranked 2nd in both samples). It should be noted that thanks to mobile devices, customers can also search for information and make transactions at any time they need. Furthermore, Lamberton and Stephen (2016) highlighted the importance of customer-to-business outreach and communication in the mobile marketing landscape. Customers can request any information at any time, resulting in the response speed of the business, which can influence the customer's purchasing decision (Öztaş, 2015). Therefore, the challenge of businesses is to provide information to customers when they need it. Some activities that businesses should take to provide timely information to customers are:

- Applying mobile technologies that can define the customer's context. These technologies include network-based positioning short-range positioning (WiFi, Bluetooth, RFID or infrared) and satellite navigation (Global Positioning System). These technologies can connect with customers as soon as they arrive at the store. As a result, information about products/services will be provided quickly and promptly.
- Setting up 24/7 call centers, live chat and other services that allow their customers to contact them at any time of the day and night. These systems can be applied to mobile websites, mobile applications and mobile social networks.

Third, businesses provide updated information to customers. Generation Z is always young, dynamic, creative and trendy. These characteristics force enterprises to catch up and update continuously quickly. Old information about products/services will not attract interest from this generation. Therefore, the Author suggested that businesses need to:

- Offer monthly release notes on mobile websites or mobile apps. Businesses ensure regular contact with customers to remind about updates on products/services.
- Send monthly newsletter to customers. Businesses can use mobile email. This is the simplest and easiest way to ensure that your customers are aware of product improvements. According to the survey results, Generation Z in Vietnam and Poland both have quite high rates of using this form. There are different ways you can announce updates such as a customer-specific monthly email; a simple newsletter with links to product related posts or an email announcing a new product webinar and enticing customers to sign up.
- Create easy ways to communicate via mobile social networks. Generation Z Vietnam and Poland interact in this form a lot in mobile marketing (ranked first in Vietnam

and fourth in Poland). Social media is an important channel to reach out and provide updates to customers. The sharing function makes social media a good platform to communicate important information like modified operating hours or the return of items.

Nowadays, consumers are bombarded by numerous advertisements and informational messages in their daily lives. However, consumers only want to receive and view the messages that are valuable to them on their mobile phones. Once customers are bothered by inappropriate messages, it is very easy for them to have a negative perception of the business and also of mobile marketing. Therefore, to improve the acceptance of Generation Z, the Author believed that businesses in Vietnam and Poland need to enhance the value of the information through mobile marketing. In this study, these values were related to relevance, up-to-date and timeliness. Businesses in Vietnam and Poland can change and tailor marketing messages on SMS/MMS, mobile e-mail to suit the needs of each customer through building their profile. As a result, these activities can enhance consumer interaction with the brand in real time.

Brand trust

BT is the next element discussed. This is the factor that has the strongest impact on the acceptance of Generation Z participants in Poland and the second most important factor for Generation Z participants in Vietnam. In the study, the BT factor was assessed based on:

- *"Brand in mobile marketing that I interact with is reliable"*
- *"Information conveyed by the brand in mobile marketing is accurate"*
- *"Information conveyed by the brand in mobile marketing is convincing"*
- *"I have trust on the brand in mobile marketing that I interact with"*
- *"Overall, I trust in mobile marketing"*

Thus, in this study, BT is assessed mainly based on the persuasiveness, accuracy of the information provided by the brand and the overall reliability of the brand. The Author emphasized that businesses in Vietnam and Poland need to focus on building mobile marketing activities related to the above three issues to enhance BT.

First, businesses should consider brand authenticity. The concept of authenticity is about being the "real thing". An authentic brand is one that dictates transparency and consistency in its branding initiatives and messaging. It has business values that it stays true to, and it's basically

honest. Brand authenticity is the delivery of messages that are in sync with the brand identity and values (Georgiou, 2021). Or to put it simply, the accuracy of the information that the business provides. Providing customers with inconsistent messages can lead to mistrust and suspicion because it is difficult to determine which side of a business is real. Through the research results, both Polish and Vietnamese Generation Z emphasized the influence of the accuracy and persuasiveness of information provided by businesses (shown in Table 5.6). In mobile marketing, it is very easy for businesses to create posts on mobile web, mobile apps, email or mobile social networking sites to reach customers. Therefore, it is a prerequisite that businesses need to keep in mind that the information provided on these platforms must be accurate and consistent with the brand. Base on Georgiou (2021), the Author proposed several activities to increase brand authenticity such as:

- Building content and marketing information with brand consistency: Businesses need to keep their content and marketing messages always reflecting the brand's characteristics and the quality of products/services.
- Creating compelling, engaging and valuable content/information that can convince customers to believe in brand, such as organizing events, live videos on mobile platforms such as mobile web, mobile app or mobile social networks so people can follow/experience products/services and ask questions.
- Maintaining consistency in brand tone and personality across all channels (e.g. mobile web, mobile apps, mobile social networks, SMS/MMS, etc.)
- Sharing relevant and reliable sources: businesses should link to relevant and respected data-driven sources in content or use branded links on social media.

Second, the Author found that construction of a communication system also contributes to the improvement of BT. It is considered as one of the main stepping stones to building brand trust (Azize et al., 2012). Communication refers to the way in which businesses interact with customers to create relationships. Brands and customers can create a positive attitude when managing relationships with brands. Alternatively, communication can be a way to mediate the factors of authenticity and satisfaction that customers experience. Communication includes two forms: one-way communication and two-way communication (Şahin et al., 2012). One-way communication is also known as indirect communication, such as advertising, T.V., radio, or other forms of communication where only one party can convey their message. Two-way or

face-to-face communication is a form of targeting existing customers, a way they can interact with a brand and can apply that to potential future customers. Two-way communication can be linked to customer trust. Mobile marketing is a two-way communication, where customers can participate in the interaction with the business. To implement a good brand communication campaign, businesses need to:

- Choose the correct appropriate communication channel. Mobile marketing is multi-channel marketing, so choosing the right channel also becomes more difficult. In this study, according to the data in the table, it can be seen that both Generation Z participants in Vietnam and Poland are very fond of three channels, namely: mobile web, mobile apps and mobile social networks. Thus, businesses in Vietnam and Poland should prioritize choosing the above three channels to carry out communication campaigns with customers. However, the remaining channels should not be ignored, but should take appropriate measures to promote their advantages.
- Build a dialogue between the business and the customer. Regardless of where and how brand communication is conducted, it should not be a monologue but should be in the form of a dialogue so that the customer can provide response level. Customers can provide their reviews and suggestions to improve the brand and express their grievances, if any. It is important for businesses to understand the customer's expectations of the brand and evaluate their views. In mobile marketing, the process becomes easy. Because, mobile marketing is a highly interactive form of marketing (Gao et al., 2010). Mobile devices are almost always on and responsive, allowing companies to communicate with their customers in a personalized and interactive style (Sánchez-Prieto et al., 2016). Activities that businesses need to pay attention to, including: sharing news with customers; seek feedback; answer and ask questions to customers; listen and evaluate their ideas (Georgiou, 2021).
- Show brand personality. One of the essential steps to improve brand communication is to showcase brand's personality throughout the entire process, add elements of brand culture to create an emotional connection with customers.
- Maintain publicity and transparency. The element of transparency is a mandatory element from the management side of the business. Communication must not only be clear, open and transparent, but also true. In addition, businesses need to

communicate current and latest developments in the brand's products and services in the market to customers so that they can proactively capture information useful for decision making.

Brand trust is the most important quality a business needs to develop as part of its mobile marketing activities. Consumers need to trust that brand will deliver on its promises in every interaction. Failure to build or protect brand trust damages the company's image in the minds of customers. The above statements were clearly confirmed through the results that this study collected. BT was the most influential factor for the acceptance of Generation Z in Poland, while it was the second factor for Generation Z in Vietnam. In this study, the Author proposed two main activities that businesses can implement to improve BT. Those activities are to maintain brand consistency and build communication systems between customers and businesses. The suggested activities were based on assessments collected from Generation Z in both countries.

Privacy

The last factor mentioned is privacy; however, this factor is only for Generation Z in Vietnam. In this study, privacy is related to the security and control of customers' personal information when interacting with mobile marketing. Specifically, in this study, Generation Z in Vietnam evaluates P through the following indicators:

- *"Mobile marketing does not disclose private consumer information to unauthorized parties"*
- *"Mobile marketing will not share private consumer information without their consent in the future"*
- *"Mobile marketing allows a customer to control how the private information they provide will be subsequently used"*
- *"Mobile marketing ensures that customer privacy will not be compromised during a transaction"*

Based on the above indicators, businesses can conduct activities to improve privacy in mobile marketing. The above indicators focus on customers' permission, privacy control, and privacy policies and security. From there, the Author suggested some activities for businesses to deploy in mobile marketing.

First, the Author mentioned the activities related to the customer's permission to use personal information. Bamba and Barnes (2007) argued that the business requires permission to access personal information (i.e. email address or mobile phone number etc.). Mobile devices, especially mobile phones, are a more private environment than mailboxes or email, and an unsolicited message negatively impacts consumers (Barnes & Scornavacca Jr, 2004). They will feel uncomfortable when their personal information is collected without their permission. Furthermore, mobile marketing is more invasive than any other media, so a lot of attention needs to be paid to the issue of consent. As a result, the mobile marketing experience becomes pleasant for the users (Gana & Koce, 2016). Agreeing with the above point of view, Mish (2015) affirmed that for mobile marketing, especially SMS and MMS, businesses need to get permission from current and potential customers before sending messages. Customers must actively opt-in to the company's mobile marketing. Mish (2015) also suggested that marketers must obtain prior written consent from people they want to contact through text messages, signage, website forms, social media or email. Written permission can be as simple as writing "SUBSCRIBE" in a text message or a web form on a company website. In addition, maintaining the customer's permission also needs to be done carefully. After the customer has agreed to allow access and use of their personal information, the company is responsible for maintaining the subscriber's consent. To maintain registrant interest and consent, the Author suggested that a company must:

- Continuously communicate the value that subscribers get from this service. For example, some information is provided to customers in advance when choosing to provide personal information. They can optionally revoke consent and opt-out of receiving messages on any message sent from a campaign.
- Make sure to understand consumer preferences and target messages to that interest. Businesses need a constant effort to keep consumers happy and interested in product or service.
- Respect consumer privacy. Businesses do not sell customer information to third parties. Customers trust the company to keep their data private by choosing to receive messages. A practice is to continually explain how businesses value their privacy and are keeping their data confidential.

Second, business must focus on customers' control over their personal information. This means that businesses that collect customer data must develop and comply with regulations that

give customers more control over their data. A change is happening, and customers have more control over who gets access to their data and its use. Therefore, the author suggested that:

- Businesses need to let customers know about the purpose of using their data. Malhotra et al. (2004) emphasized notification as the most fundamental principle. When customers are aware of their privacy, they reduce their concerns about risk (Wu et al., 2012).
- Businesses can consider using is the permission-based opt-in/opt-out service subscription feature. It helps customers choose which services they want to subscribe to and how the information they provide may be used. When consumers can make a choice, they will better understand the implementation of a security policy within an organization and how effective it is.
- Businesses should also give to customers the option to access their personal information to view and check the accuracy and completeness of the data (Wu et al., 2012). As a result, they will have a more favourable perception of the effectiveness of the business's privacy policy.

Finally, business need to concern about privacy policies and security. Businesses need to invest in measures to protect customer privacy. Because a company cannot maintain the safety of the data collected from customers through marketing channels, this company did not meet the required level of corporate responsibility (Eisen, 2010). Mekovec and Hutinski (2012) stated that the main area related to security is operation. Operational factors include the methods businesses can take to ensure that users feel safe during interactions. Therefore, when customers interact with websites or applications via mobile devices, companies need to provide:

- The blocking of unauthorized access by a website or application;
- Username and password authentication;
- Funds and budgets are spent on security;
- Monitoring of user compliance with security procedures;
- Integration of state-of-the-art systems;
- Distribution of security items in the website/app;
- The site's coding strategy;
- Consolidation with cybersecurity vendors.

Moreover, businesses must pay attention to privacy policies. A privacy policy is a legal document or a statement that outlines how a company collects and processes the data of its customers and visitors (Costante et al., 2012). It clearly describes whether that information will be kept confidential, shared or sold to third parties. Nowadays, companies or websites that process customer information must publish their Privacy Policy on their business websites. Suppose a business owns a website, mobile website or mobile application that collects or processes user data. In that case, they will undoubtedly be required to post policy privacy on its website (or grant in-app access to the entire privacy policy agreement). The majority of countries have enacted laws to protect their users' privacy and data security. These laws require businesses to obtain explicit consent from users whose data they will store or process. Some general privacy laws include CalOPPA in the USA; GDPR in the EU; PIPEDA in Canada (Pirzada, 2021). Many companies place their privacy policies on online platforms to build consumer trust and reduce the fear that their personal data will be disclosed. While implementing and participating in privacy policies is mainly voluntary, adopting these policies provides an evaluative tool for consumers to evaluate an organization's information practices and responsiveness (Chang et al., 2015). Some issues related to the privacy policy that businesses need to implement:

- Emphasising on cybersecurity;
- Building a commitment of top management;
- Making users aware of security procedures;
- Updating product standards;
- Focusing on security in providing personal data and issues related to web browsing for the mobile web form.

Privacy protection has always been a challenge in mobile marketing, especially for Asian countries. In these countries, specifically Vietnam, technical methods as well as customer privacy protection policies are still in the final stage. Therefore, privacy is always a concern of customers when conducting online interactions, Generation Z in Vietnam is no exception. In this article, the Author proposed a number of activities to support this problem for businesses. Businesses can protect consumers' privacy by enabling them to be more proactive in controlling activities related to personal information. In addition, businesses need to develop and manage privacy policies to ensure the safety of customers when interacting with mobile marketing. Only when privacy is guaranteed, Generation Z will easily accept and adopt mobile marketing.

To sum up, due to recent advances in mobile technology, coupled with the rapid proliferation and inherent characteristics of mobile devices, the mobile channel has emerged as a potential new tool for marketing activities (Varnali & Toker, 2010). Storch and Juarez-Paz (2018) stated that the technical benefits of mobile media represent a new marketing environment that companies should enter if they want to survive and thrive. Similarly, Shankar et al. (2010) asserted that mobile marketing has the potential to change the retail model from one based on consumer access to retailers to another. Despite all the opportunities available by mobile media, the potential of mobile marketing has not been fully exploited. This is due, generally in part, to a lack of experience in mobile marketing among marketers (Ong, 2010). While previous studies have attempted to fill this gap by proposing an analytical framework for assessing the marketing impacts of mobile media (Friedrich et al., 2009; Smutkupt et al., 2010; Tong et al., 2020). Vietnam and Poland are also two countries where businesses start to invest and develop mobile marketing in their business activities. Therefore, this study wished to develop an idea of mobile marketing activities for businesses in Vietnam and Poland. After an extensive analysis of the TAM model representing the opinions of Generation Z participants, a framework of mobile marketing activities was proposed. The mobile marketing activities above were built primarily around metrics for each factor rated by Generation Z participants. From there, the Author discussed and proposed a number of detailed activities to enhance the elements in each concept applicable to Poland and Vietnam. Therefore, it can be said that these activities can contribute to enhancing the effectiveness of mobile marketing. However, the above activities were only suggestions and focus on analyzed factors. Enterprises can refer to and adjust accordingly based on the specific situation to increase acceptance for mobile marketing in Vietnam and Poland. From there, they can open up opportunities to improve mobile marketing campaigns.

6.3. Study contribution

First, this research had some contributions to the body of knowledge in the field of information systems in general and mobile marketing in particular. Marketing was introduced from marketing 1.0 to marketing 5.0 and its change in response to changing technology. The connection between marketing and technology was at the heart of the discussion. This connection was shown through the development of marketing communication channels,

especially mobile marketing, associated with technological advancements. In addition, the definition of mobile marketing and its scope were analyzed and evaluated. Mobile marketing was a suitable form in the field of marketing today. The most prominent among mobile devices were smartphones.

Second, the study developed a new technology acceptance model to explain the adoption of mobile marketing by Generation Z. The developed model took into account the extended variables to predict and explain the acceptance of Generation Z. The results showed the importance of the identified variables in the mobile marketing environment. Furthermore, the developed model could explain a high percentage of variance in acceptance. The achieved explanatory variance was relatively high, at 57.3% in the Vietnamese sample and 83.3% in the Polish sample. Moreover, the study also compared two samples, Vietnam and Poland, while previous studies had not investigated these two countries together.

Third, the developed model was empirically validated using structural equation modelling through IBM AMOS, allowing complete evaluation of the model. The structural equation model confirmed and tested the developed model through confirmatory factor analysis and multiple regression analysis, respectively. The results of CFA confirmed the validity of the developed model through three statistical analyses, including unidirectionality, goodness and validity. Furthermore, multiple regression analysis tested the developed model against the variances and research hypotheses about probability values and standardized coefficients.

Fourth, the study applied multi-group analysis to examine differences in nationality. Multigroup analysis is an advanced technique that uses differences in $\Delta 2$ chi-squared to compare groups. Through IBM AMOS, Vietnam and Poland multigroup analysis was performed to measure and develop the samples. Multigroup analysis for the measurement model will determine whether Gen Z in Vietnam and Poland perceive the measurement variables (i.e., questionnaire questions) differently. Multigroup analysis showed a difference between the two nationalities in this study.

Fifth, the study contributed to the development of a questionnaire to measure the extrinsic and intrinsic variables of the TAM model at the individual level. The questionnaire questions were developed and validated for each variable in the model, and these questions were adapted from the literature and revised to fit the context of this study. In addition, the questionnaire has

undergone rigorous tests to ensure its validity and reliability. Furthermore, the validated questionnaire could be adapted and replicated in future technology acceptance research.

The final contribution was to apply the developed model to explain the acceptance of mobile marketing by Generation Z. The model has successfully explained the acceptance in Vietnam and Poland of mobile marketing acceptance.

6.4. Study implications

The results in this study contribute to supporting businesses in Vietnam and Poland in building mobile marketing activities for Generation Z.

First, businesses can rely on the results of the research model analysis to form a concept of mobile marketing activities for each country. In particular, for Vietnam, companies should focus on four factors to decrease impact: P, BT, IV and PU. For Poland, enterprises should build activities based on three aspects in descending order of impact: BT, PU and IV. Specifically, activities related to perceived usefulness improve the efficiency of the customer's purchasing process through mobile devices, as this will encourage current and potential Generation Z to adopt mobile marketing. First, companies can boost perceived of usefulness by building a mobile-friendly website. Or businesses can consider creating a separate mobile website or mobile applications. Finally, enterprises benefit consumers through mobile marketing campaigns (Product, Price, Place and Promotion). To ensure maintaining the quality of the information in mobile marketing, companies should provide information relevant to customer needs and preferences, continuously updated and timely. Enterprises should focus on the information element because Generation Z wants to make informed decisions about the brands and products they choose, so they are cautious in reading marketing information (Băltescu, 2019). In the study, the BT factor was assessed based on the persuasiveness, the accuracy of the information provided by the brand and the overall reliability of the brand. Thus, to improve BT in mobile marketing, businesses need to pay attention to the indicators on authenticity and communication. Besides, businesses in Vietnam or foreign firms that want to develop need to pay more attention to the privacy factor. Privacy-enhancing activities that companies may undertake, for example: obtaining permission from consumers to collect their personal information, providing them with

access and control over such information, developing, participating in, and complying with privacy policies.

Second, businesses can rely on the assessments of Generation Z in this study to choose the correct forms of mobile marketing. Research results showed that mobile websites, mobile applications, and social networks are popular in both countries. Mobile social networks were the most interactive form in Vietnam. Mobile applications were the most popular with the Polish generation Z. Thus, when implementing mobile marketing activities, businesses can consider applying these forms in two countries. Opinions of Generation Z participants also provided companies with information about the forms that have not worked well in the two countries. The forms of SMS/MMS, QR code, NFC, mobile email and Geolocation were still not appreciated by Generation Z participants in both countries. Therefore, businesses need to consider being able to offer reasonable investment plans in each of these forms. Businesses can rely on Generation Z's causes when they do not want to interact with the above forms. These causes can be a reasonable basis for companies to consider. The leading causes revolved around issues related to popularity, safety and cost-effectiveness. Finally, the study also provided an assessment of the attitudes of Generation Z in the two countries towards each form of mobile marketing. Mobile social networks were a form that can change the attitude of Vietnamese Generation Z towards brands, so they are also ready to introduce this form to their friends and relatives. For Polish Generation Z, mobile applications were the form that changed their attitudes, and they are willing to introduce them. However, when comparing the results between the two countries, the results showed that Vietnamese Generation Z has a better attitude towards all forms of mobile marketing than Polish Generation Z. This result highlights that businesses in Poland need to improve Generation Z's attitude towards mobile marketing.

6.5. Study limitations and directions for future research

Research has produced exciting findings to explain Generation Z's acceptance of mobile marketing; however, this study had certain limitations. The first is the limitation of the survey subjects, focusing only on students aged 18-26, which has not yet reflected the opinions of other issues and ages. In addition, the target audience was mainly students, and other professions have not been exploited. Second, some forms of mobile marketing have yet to be studied, such as m-

coupons, augmented reality or iBeacon. Finally, the cultural dimensions in the Hofstede model were included to test their impact on acceptance across countries.

In addition, for directions for future research, research can expand the research object, focusing on the 18-26 age group and students, but can be extended to the subjects at the high school level. Research can conduct research comparing the differences between different ages of Generation Z to provide a comprehensive view of this generation with mobile marketing. In addition to the TAM model, the study can extend to many other models such as UTAUT1& 2, TRA or TPB, etc. Or the study can conduct a comparison of the results between the models to assess the explainability of each model in the field of mobile marketing. Moreover. this study is based on an empirical quantitative method. Future studies may apply other techniques (e.g. qualitative interpretive approaches, etc.) to enhance understanding of relevant factors influencing mobile marketing acceptance. Qualitative research can further identify other existing factors and relationships. Finally, the dimensions of the Hofstede model can be included in the model to an in-depth assessment of the impact of cultural factors on mobile marketing acceptance. These dimensions can be power distance; individualism vs collectivism; uncertainty avoidance; masculinity versus femininity; long-term orientation versus short-term orientation and indulgence vs restraint.

CONCLUSIONS

This dissertation aimed to explain the acceptance of mobile marketing by Generation Z in Vietnam and Poland by developing an expanded technology acceptance model. The developed model consists of six variables, of which they can be divided into three extrinsic variables and three TAM constructs. In addition, the study focuses on examining the influence of cultural differences between Vietnam and Poland on the effects of variables on acceptance for mobile marketing.

The results showed the importance of measurement variables for mobile marketing acceptance of Generation Z in Vietnam and Poland. Four variables: PU, IV, BT, P, are essential factors determining acceptance for the Vietnamese sample. P is the most substantial factor; BT is the second, followed by IV and PU. The PEOU factor has no impact on acceptance. For the Polish sample, three variables PU, IV and BT, are three crucial factors affecting acceptance. BT is the most decisive factor, PU is the second and IV is the weakest. The two factors PEOU and P, did not have a significant impact on acceptance.

On the other hand, the comparison of the results between Vietnamese and Polish samples indicated that Generation Z participants in Vietnam tend to accept mobile marketing higher than Generation Z participants in Poland. The impact of the measurement variables on the mobile marketing adoption of the two samples is also different. Specifically, PU and IV have a more significant influence on the Polish sample than on the Vietnamese sample. Meanwhile, BT and P have a higher impact on the Vietnamese sample than on the Polish sample. The study also used cultural theories to explain the above results, which stated that cultural differences impact the extended TAM model for the two samples.

The development of the model successfully explained the high percentage of variance for acceptance of Generation Z in Vietnam and Poland. Therefore, the developed model results confirm the importance of the extended TAM model (i.e. PU, PEOU, IV, BT and P) to predict and explain Generation Z acceptance of mobile marketing in Vietnam and Poland. Moreover, the multi-group analysis showed difference in the pattern developed in Vietnamese and Polish samples.

Finally, based on the analysis results, the Author proposed mobile marketing activities for Vietnam and Poland. The concept of mobile marketing activities that the Author built for

Generation Z in Vietnam focuses on four factors: PU, IV, BT and P. Meanwhile, the concept that is suitable for Generation Z in Poland only focuses on three aspects: PU, IV and BT. Moreover, detailed activities for each element are also introduced by the Author. Specifically, businesses need to focus on two main activities: customer performance and perceived benefits to enhance PU. For IV, companies need to improve the value that mobile marketing provides to customers. These values are relevance, timeliness, and up-to-date. Meanwhile, BT focuses on how much trust customers have in the business using mobile marketing. Companies need to ensure authenticity and build a communication system to maintain trust. All of the above activities can apply to both Vietnam and Poland markets. In addition, in the Vietnamese market, businesses need to pay attention to P. Generation Z in Vietnam is very concerned about ensuring their privacy when interacting with mobile marketing. Therefore, enterprises need to conduct activities related to permissions, privacy control, and privacy policies to enhance P. Thus, in each specific country, businesses need to choose the right mobile marketing concepts to increase customer acceptance of this form. This finding highlighted the role of market research in understanding the characteristics and perspectives of customers in different regions or countries.

Study questions

Which factors in the research model influence Generation Z's acceptance of mobile marketing in Poland and Vietnam? To address this question, the study first examined the literature related to mobile marketing and the development of the TAM in the information systems domain.

First, the study examined the historical development of TAM models in Information Systems. This includes the development of the TRA, TPB, as they formed the basis for developing the TAM model. Later, further details of TAM development were released regarding adoption, validation, and expansion. The adoption phase mainly dealt with TAM's applicability (i.e., analysis) to explain many types of information technology. The validation phase focused on two aspects: confirming the psychometric characteristics (i.e., measured variables) of perceived usefulness and ease of use and the causal relationship between the TAM constructs. The expansion phase addressed the researchers' attempt to improve the explanatory power of the TAM by adding external variables to the model. Next, the study discussed the literature that has applied technology acceptance model to explain Generation Z's acceptance of mobile marketing.

The literature review revealed two main trends in TAM modification to explain mobile marketing acceptance: First, studies applied TAM without any extension to justify the adoption of customers. Second, the studies extended TAM with external variables to explain customer acceptance, which improved after adding external variables.

Second, the study formed a TAM model to explain the adoption of Generation Z for mobile marketing in Vietnam and Poland. The study proposed an enhanced technology acceptance model consisting of six variables. The six possible variables were divided into the extrinsic variable and the TAM structure. First, there were three irrelevant variables: IV, BT, and P. Second, TAM's structural variables included PU, PEOU and AC. The primary consideration was to identify external variables to consider their potential to influence mobile marketing acceptance by Generation Z. Furthermore, the study focused on the characteristics aspects of the system, users and previous studies in determining the external variables. After deciding the external variables was completed, research hypotheses were proposed to govern the relationships between the model variables. Proposed hypotheses were proven for each variable based on a literature review. The results confirmed the significance of the variables and the performance of the developed model.

Finally, the study investigated the extent to which dynamical variables can impact acceptance. Research determined that not all variables in the model impact acceptance. Furthermore, the results showed that Generation Z's extended variables are better predictors of mobile marketing acceptance in the two samples.

Does culture determine the acceptance of mobile marketing? The study investigated the effects of cultural factors on the acceptance of Generation Z in Vietnam and Poland. Previous studies showed that cultural factors could modulate model relationships, and Vietnamese and Polish cultures are markedly different in the dimensions of the Hofstede model. This study investigated whether Generation Z in Vietnam and Poland have different perceptions to accept mobile marketing. Cultural impact was performed by comparing the results of the effects of the measurement variables on mobile marketing adoption by performing a multi-group analysis using the AMOS software by IBM. Multi-group analysis grouped the data based on nationality and then performed multiple regression analysis. The results showed that there is a difference in the impact of factors on the acceptance of Generation Z between Vietnam and Poland.

How to propose mobile marketing activities for Generation Z in Poland and Vietnam?

To answer this question, the study based on the factors proposed in the research model. The research model included the following factors: PU, PEOU, IV, BT and P. Through statistical analysis methods, the impact of these factors on the acceptance of generation Z in Vietnam and Poland was evaluated and analyzed. The results showed which factors have a direct impact on the acceptance of Generation Z in each country. Specifically, in Vietnam, PU, IV, BT and P were factors that have a significant impact. In Poland, the main important factors were PU, IV and BT. These findings were the basis for the Author to build the concept of mobile marketing activities for Vietnam and Poland. After having a concept of mobile marketing activities for each country, the study continued to propose detailed activities for each element of each concept. Specifically, detailed activities were built based on the evaluation indicators of each factor. These indicators played a fundamental role in defining the factors that Generation Z in Vietnam and Poland conducted assessments.

Study hypotheses

The author proposed 12 hypotheses in this study. Through the analysis results, the two main hypotheses of the study, 0a and 0b, were accepted. Hypothesis 0a confirmed that the ETAM model has a significant impact on the acceptance of Generation Z in Vietnam and Poland. While hypothesis 0b emphasized that there is a difference in the impact of the ETAM model between the two samples. Besides, the remaining 10 hypotheses were all classified into two groups. The first group (1a, 2a, 3a, 4a, and 5a) is the hypothesis to evaluate the factors of ETAM affecting the acceptance of Generation Z in Vietnam and Poland for mobile marketing. The second group (1b, 2b, 3b, 4b and 5b) is the hypothesis comparing the impact of factors in ETAM between the two samples to assess the impact of culture. In the first group, the results of the analysis showed that hypotheses 1a, 3a, 4a, 5a were supported in the Vietnamese sample. Meanwhile, in the Polish sample, the supported hypotheses included 1a, 3a and 4a. However, hypothesis 2a were rejected in both samples. In the second group, the supported hypotheses included 1b, 3b and 5b. The two hypotheses 2b and 4b were rejected. The results of these hypotheses were used as the basis for proposing the concept of mobile marketing activities.

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Abstract

Mobile marketing has become the new paradigm for digital marketing. Mobile technology allows breaking the limits of time and place by allowing businesses to reach customers anytime and anywhere. Mobile marketing can have a specific influence on business activities, consumer behaviour, as well as national and global markets. Therefore, it is of considerable value to identify the factors that influence the acceptance of mobile marketing. Based on a literature review and the theoretical basis of the TAM model, this dissertation developed an extended technology acceptance model to explain the adoption of Generation Z for mobile marketing in Vietnam and Poland. Furthermore, the dissertation addressed the cross-cultural factor's impact on mobile marketing acceptance due to cultural differences between the two countries.

The developed model includes six variables, which can be classified into two groups. First, the TAM variables include perceived usefulness, perceived ease of use and acceptance. Second, the extended variables include information quality, brand trust and privacy. Furthermore, to validate and test the developed model, a questionnaire was built for data collection. Data were collected from universities in Vietnam and Poland. The dissertation was conducted with 784 students in Vietnam and Poland, and the research results supported the developed model. In addition, the variables identified in model were good predictors of predicting and explaining Generation Z's acceptance of mobile marketing in both countries.

The dissertation applied structural equation model for statistical analysis by using AMOS. The research results approved the applicability of the developed model to explain the acceptance of mobile marketing by Generation Z in Vietnam and Poland. The developed model had a high explanation of variance between the dependent variables in both countries. The research results showed that the extended variables were strong predictors of the acceptance of Generation Z. A comparative test was performed to determine the impact of cultural differences. The results showed that the impact of factors in the model on Generation Z in Vietnam and Poland were significantly different. There were differences between the two samples in perceived usefulness, informational value, brand trust, and privacy. Finally, based on the research results, the dissertation suggested mobile marketing activities for businesses looking to enter the Vietnamese and Polish markets.

Streszczenie

Marketing mobilny stał się nowym paradygmatem marketingu cyfrowego. Technologia mobilna pozwala przełamywać ograniczenia czasu i miejsca, umożliwiając firmom dotarcie do klientów w dowolnym miejscu i czasie. Marketing mobilny może mieć określony wpływ na działalność biznesową, zachowania konsumenckie, a także na rynki krajowe i światowe. Dlatego bardzo cenne jest zidentyfikowanie czynników, które wpływają na akceptację marketingu mobilnego. W oparciu o przegląd literatury i teoretyczne podstawy modelu TAM, w niniejszej rozprawie opracowano rozszerzony model akceptacji technologii, aby wyjaśnić stopień akceptacji marketingu mobilnego przez Generację Z w Wietnamie i Polsce. Ponadto rozprawa dotyczyła wpływu czynnika kulturowego na akceptację marketingu mobilnego ze względu na różnice kulturowe między tymi dwoma krajami.

Opracowany model zawiera sześć zmiennych, które można podzielić na dwie grupy. Po pierwsze, zmienne poboczne TAM obejmują postrzeganą użyteczność, postrzeganą łatwość użycia i akceptację. Po drugie, zmienne rozszerzone obejmują jakość informacji, zaufanie do marki i prywatność. Ponadto, aby zweryfikować i przetestować opracowany model, zbudowano kwestionariusz do zbierania danych. Dane zostały zebrane z uniwersytetów w Wietnamie i Polsce. Dysertację przeprowadzono na 784 studentach w Wietnamie iw Polsce, a wyniki badań wsparły opracowany model. Ponadto zmienne zidentyfikowane w modelu były dobrymi predyktorami przewidywania i wyjaśniania akceptacji marketingu mobilnego przez generację Z w obu krajach.

W rozprawie zastosowano model równania strukturalnego do analizy statystycznej z wykorzystaniem AMOS. Wyniki badań potwierdziły przydatność opracowanego modelu do wyjaśnienia akceptacji marketingu mobilnego przez Pokolenie Z w Wietnamie i Polsce. Opracowany model miał wysokie wyjaśnienie wariancji między zmiennymi zależnymi w obu krajach. Wyniki badań wykazały, że zmienne rozszerzone były silnymi predyktorami akceptacji pokolenia Z. Przeprowadzono test porównawczy w celu określenia wpływu różnic kulturowych. Wyniki pokazały, że wpływ czynników w modelu na Pokolenie Z w Wietnamie i Polsce był znacząco różny. Istniały różnice między obiema próbami pod względem postrzeganej użyteczności, wartości informacyjnej, zaufania do marki i prywatności. Wreszcie, w oparciu o wyniki badań, w dysertacji zaproponowano działania z zakresu marketingu mobilnego dla firm chcących wejść na rynek Wietnamski i Polski.

List of Tables

List of Figures

List of Abbreviations

AC	Acceptance
AGFI	Adjusted Goodness of Fit Index
AI	Artificial Intelligence
AMA	American Marketing Association
AMOS	The Analysis of Momentary Structures and
AR	Augmented Reality
AVE	Average Variance Extracted
BI	Behavioural Intention
BT	Brand Trust
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Composite Reliability
CRM	Customer Relationship Management
ECM	The Expectation Confirmation Model
ETAM	Extended Technology Acceptance Model
GFI	Goodness of Fit Index
GPS	Global Positioning System
IoT	Internet of Things
IR	Infrared
IS	Information Systems
IT	Information Technology
ITC	Information & Communication Technologies
IV	Information Value
KI	Kurtosis
MMA	Mobile Marketing Association
MMS	Multimedia Message Service
MSM	Mobile Social Media
NFC	Near Field Communication
NLP	Natural Language Processing
P	Privacy

PBC	Perceived Cognitive Behavior
PDA	Personal Digital Assistants
PE	Perceived Enjoyment
PEOU	Perceived Ease of Use
PIIT	Personal Innovation in Information Technology
PU	Perceived Usefulness
QR	Quick Response
RFID	Radio Frequency Identification
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modelling
SEO	Search Engine Optimization
SI	Skewness
SI	Social Influence
SMS	Short Message Service
SN	Social Norms
SPSS	The Statistical Package for the Social Sciences
TAM	The Technology Acceptance Model
TLI	Tucker-Lewis Index
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
URL	Uniform Resource Locator
UTAUT	The Unified Theory of Technology Adoption and Utilization
VR	Virtual Reality
WTO	World Trade Organization
WWW	Worldwide Wireless Web

Appendix – A1 – Research questionnaire form – in English language

I am conducting an investigation for my doctoral thesis on "*Mobile marketing activities based on Generation Z technology acceptance: cross-cultural approach*".

Please take a moment to answer the questions below. The information you provide will be kept confidential and used only for research purposes. We are looking forward to receiving your kind cooperation.

Sincerely thank you!

To answer the question more easily, I would like to include definition of mobile marketing. Mobile marketing is defined as marketing activities that deliver advertising to mobile devices such as: mobile phone, smartphone, tablet or smartwatch, etc.

I. Please indicate if you are in the age group of 18 to 26 years old?

If yes, please continue to answer the questions.

If not, thank you very much for your time.

II.-Give your opinion on the factors that affect mobile marketing acceptance:

Please complete the following questionnaire on a scale of 1-5 (1-strongly disagree and 5-strongly agree).

Put X where appropriate

Item	1	2	3	4	5
I find mobile marketing useful.					
I can benefit from mobile marketing.					
Mobile marketing helps to save time in looking for product and service.					
Mobile marketing allows me to buy more efficiently.					
Mobile marketing allows me to make purchases more quickly.					
The interaction with mobile marketing is clear and understandable.					
Interaction with mobile marketing would not require a lot of mental effort.					
Interacting with mobile marketing would be easy.					
Content of mobile marketing is easy to share or recommend.					
Mobile marketing does not disclose consumer private information to unauthorized parties.					
Mobile marketing will not share my private information without my consent in the future.					
Mobile marketing allows me to have control over how the private information I provide will be subsequently used.					
Mobile marketing ensures that my privacy will not be compromised during a transaction.					
Mobile marketing gives me timely information about available products.					

Mobile marketing gives me relevant information about available products.					
Mobile marketing is a good source of information about available products.					
Mobile marketing contains updated information on available products.					
Brand in mobile marketing that I interact with is reliable.					
Information conveyed by the brand in mobile marketing is accurate.					
Information conveyed by the brand in mobile marketing is convincing.					
I have trust on the brand in mobile marketing that I interact with.					
Overall, I trust in mobile marketing.					
I feel positive about mobile marketing					
I make purchases prompted by mobile marketing.					
I would read all message from mobile marketing.					
I would be willing to interact more with mobile marketing in the future.					

III. General question

1. Have you ever known or used/interacted with the following forms of mobile marketing?

(You can choose multiple answers)

Mobile marketing forms	**Not know**		**Know but not use/interact with**		**Use/ Interact with**	
	Yes	No	Yes	No	Yes	No
SMS						
MMS						
Mobile websites						
Mobile applications						
Mobile social networks						
Near-Field Communications (NFC) (transfer files or images when two devices touch each other or can pay online)						
QR codes						
Mobile e-mail						
Geolocation (receive information, offers by phone of a nearby store)						

2. If you currently do not use or interact with any form of mobile marketing, please indicate the reasons:
(You can choose multiple answers)

Reasons	SMS	MMS	Mobile websites	Mobile applications	Mobile social networks	Near-Field Communications	QR codes	Mobile e-mail	Geolocation
This form is not popular									
I have the impression that this form is difficult to use.									
I think the use of services is not cost-efficient.									
I think this form is not secure.									
I am afraid of unreasonable or fraudulent charges if using this form.									
This form has a negative image.									

3. What is your opinion on forms of mobile marketing which you interacted with?

Please complete the following questionnaire on a scale of 1-5 (1-very not high and 5- very high). Put X where appropriate

Mobile marketing forms	**Attractiveness**				
SMS	**1**	**2**	**3**	**4**	**5**
MMS					
Mobile websites					
Mobile applications					
Mobile social networks					
Near-Field Communications (NFC) (transfer files or images when two devices touch each other or can pay online)					
QR codes					
Mobile e-mail					
Geolocation (receive information, offers by phone of a nearby store)					

Mobile marketing forms	**Interactivity**				
SMS	**1**	**2**	**3**	**4**	**5**
MMS					
Mobile websites					
Mobile applications					
Mobile social networks					
Near-Field Communications (NFC) (transfer files or images when two devices touch each other or can pay online)					
QR codes					
Mobile e-mail					
Geolocation (receive information, offers by phone of a nearby store)					

Mobile marketing forms	**Informative**				
SMS	**1**	**2**	**3**	**4**	**5**
MMS					

Mobile websites					
Mobile applications					
Mobile social networks					
Near-Field Communications (NFC) (transfer files or images when two devices touch each other or can pay online)					
QR codes					
Mobile e-mail					
Geolocation (receive information, offers by phone of a nearby store)					

Mobile marketing forms	**Intrusive**				
SMS	**1**	**2**	**3**	**4**	**5**
MMS					
Mobile websites					
Mobile applications					
Mobile social networks					
Near-Field Communications (NFC) (transfer files or images when two devices touch each other or can pay online)					
QR codes					
Mobile e-mail					
Geolocation (receive information, offers by phone of a nearby store)					

4. What is your attitude towards forms of mobile marketing?

Please complete the following questionnaire on a scale of 1-5 (1-strongly disagree and 5-strongly agree).

Put X where appropriate

Mobile marketing forms	**Campaigns using this tool change my attitude to the brand**					**I will recommend this tool**				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
SMS										
MMS										

Mobile websites										
Mobile applications										
Mobile social networks										
Near-Field Communications (NFC) (transfer files or images when two devices touch each other or can pay online)										
QR codes										
Mobile e-mail										
Geolocation (receive information, offers by phone of a nearby store)										

IV. Personal information

1. Gender

Male ☐ Female ☐

2. Age

18-22 ☐ 23-26 ☐

3. Level of education

Undergraduate ☐

Bachelor ☐

Postgraduate ☐

THANK YOU VERY MUCH!

Appendix – A2 – Research questionnaire form – in Polish language

Szanowni Państwo,

zwracam się z prośbą o udzielenie odpowiedzi na poniższe pytania. Celem ankiety jest międzykulturowa analiza akceptacji technologii marketingu mobilnego wśród przedstawicieli generacji Z. Ankieta jest anonimowa, a jej wyniki będą wykorzystane wyłącznie do celów naukowych (pracy doktorskiej). Czas wypełnienia ankiety to 10 min. Dziękuję za wzięcie udziału w badaniu!

Marketing mobilny - definiuje się jako działania marketingowe, które dostarczają reklamy na urządzenia mobilne, takie jak: telefon komórkowy, smartfon, tablet lub smartwatch itp. Do przykładów działań marketingu mobilnego należą: wiadomości SMS i MMS, strony mobilne, aplikacje mobilne, kody QR, społeczności zlokalizowane wokół marek, wiadomości e-mail w tym newslettery i inne.

I. Proszę wskazać, czy należysz do grupy wiekowej od 18 do 26 lat?

Tak ☐ Nie, dziękuję Ci bardzo za Twój czas ☐

II. Oceń, w jakim stopniu zgadzasz się z poniższymi stwierdzeniami:

(gdzie 1 oznacza - zdecydowanie się nie zgadzam a 5-zdecydowanie się zgadzam).

Przedmiot	1	2	3	4	5
Marketing mobilny jest przydatny					
Marketing mobilny pozwala uzyskać profity					
Marketing mobilny pozwala zaoszczędzić czas na szukanie produktu i usługi					
Marketing mobilny pozwala na efektywniejsze zakupy					
Marketing mobilny pozwala szybciej dokonywać zakupów.					
Interakcja z marketingiem mobilnym jest jasna i zrozumiała					
Interakcja z marketingiem mobilnym nie wymaga dużego wysiłku umysłowego					
Interakcja z marketingiem mobilnym jest łatwa					
Treści marketingu mobilnego można łatwo udostępniać lub polecać					
Marketing mobilny nie ujawnia prywatnych informacji konsumentów osobom nieupoważnionym					
Marketing mobilny nie będzie udostępniał prywatnych informacji bez mojej zgody w przyszłości					
Mam kontrolę nad tym, w jaki sposób przekazane przeze mnie prywatne informacje będą później wykorzystywane w działaniach marketingu mobilnego					
Marketing mobilny zapewnia, że moja prywatność nie zostanie naruszona podczas transakcji					
Marketing mobilny pozwala na uzyskanie natychmiastowej					

informację o dostępnych produktach					
Marketing mobilny dostarcza istotnych informacji o dostępnych produktach					
Marketing mobilny to dobre źródło informacji o dostępnych produktach					
Marketing mobilny zawiera aktualne informacje o dostępnych produktach					
Marka w marketingu mobilnym, z którą się komunikuję, jest wiarygodna					
Informacje przekazywane przez markę w marketingu mobilnym są dokładne					
Informacje przekazywane przez markę w marketingu mobilnym są przekonujące.					
Ufam marce, z którą się komunikuję przy wykorzystaniu marketingu mobilnego					
Ufam działaniom marketingu mobilnego					
Jestem pozytywnie nastawiony do marketingu mobilnego					
Dokonuję zakupów pod wpływem marketingu mobilnego					
Czytam wszystkie wiadomości otrzymywane kanałami marketingu mobilnego.					
Chciałbym w przyszłości bardziej wchodzić w interakcje z marketingiem mobilnym					

III. Pytanie ogólne

1. Czy kiedykolwiek spotkałeś/aś się i/lub używałeś/aś następujące formy marketingu mobilnego? *(Wskaż właściwe w każdej z kolumn)*

Mobilne formy marketingowe	**Nie spotkałem/am się**		**Spotkałem/am się, ale nie używałem/am**		**Używałem/am**	
	Tak	Nie	Tak	Nie	Tak	Nie
SMS						
MMS						
Strony mobilne						
Aplikacje mobilne						
Mobilne sieci społecznościowe						
NFC – np. przesyłanie plików lub obrazów, gdy dwa urządzenia stykają się ze sobą w tym płatności online						
Kody QR						
Mobilna poczta e-mail						
Geolokalizacja np. otrzymywanie spersonalizowanych oferty SMS z pobliskich sklepów						

2. Jeśli obecnie nie korzystasz ani nie wchodzisz w interakcję z jakąkolwiek formą marketingu mobilnego, podaj powody:
(Możesz wybrać wiele odpowiedzi)

Powody	SMS	MMS	Strony mobilne	Aplikacje mobilne	Mobilne sieci społecznościowe	NFC	Kody QR	Mobilna poczta e-mail	Geolokalizacja
Ta forma nie jest popularna									
Mam wrażenie, że ta forma jest trudna w obsłudze									
Uważam, że korzystanie nie jest opłacalne									
Myślę, że ta forma nie jest bezpieczna									
Obawiam się naliczenia nieuzasadnionych dodatkowych opłat									
Ta forma ma negatywny wizerunek									

3. Oceń atrakcyjność form marketingu mobilnego, z którymi dotychczas miałeś/aś kontakt.

Mobilne formy marketingowe	**Atrakcyjność**				
	Bardzo wysoko	**Wysoko**	**Nie mam zdania**	**Nisko**	**Bardzo nisko**
SMS					
MMS					
Strony mobilne					
Aplikacje mobilne					
Mobilne sieci społecznościowe					
NFC					
Kody QR					
Mobilna poczta e-mail					
Geolokalizacja					

Mobilne formy marketingowe	**Interaktywność**				
	Bardzo wysoka	**Wysoka**	**Nie mam zdania**	**Niska**	**Bardzo niska**
SMS					
MMS					
Strony mobilne					
Aplikacje mobilne					
Mobilne sieci społecznościowe					
NFC					
Kody QR					
Mobilna poczta e-mail					
Geolokalizacja					

Mobilne formy marketingowe	**Informacyjny**				
	Bardzo wysoki	**Wysoki**	**Nie mam zdania**	**Niski**	**Bardzo niski**
SMS					
MMS					
Strony mobilne					
Aplikacje mobilne					
Mobilne sieci społecznościowe					
NFC					
Kody QR					
Mobilna poczta e-mail					
Geolokalizacja					

Mobilne formy marketingowe	Natarczywość				
	Bardzo wysoki	**Wysoki**	**Nie mam zdania**	**Niski**	**Bardzo niski**
SMS					
MMS					
Strony mobilne					
Aplikacje mobilne					
Mobilne sieci społecznościowe					
NFC					
Kody QR					
Mobilna poczta e-mail					
Geolokalizacja					

4. Oceń od 1 do 5 swoje nastawienie względem poniższych mobilnych form marketingu.
(gdzie 1 oznacza zdecydowanie się nie zgadzam, a 5 - zdecydowanie się zgadzam).

Mobilne formy marketingowe	Kampanie z wykorzystaniem tego narzędzia zmieniają moje nastawienie do marki					Polecę tę formę marketingu				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
SMS										
MMS										
Strony mobilne										
Aplikacje mobilne										
Mobilne sieci społecznościowe										
NFC										
Kody QR										
Mobilna poczta e-mail										
Geolokalizacja										

IV. Informacje osobiste

1. Płeć

Mężczyzna ☐ Kobieta ☐

2. Wiek

18-22 ☐ 23-26 ☐

3. Poziom edukacji

Student ☐

Licencjat ☐

Podyplomowy ☐

DZIĘKUJĘ BARDZO!

Appendix – A3 – Research questionnaire form – in Vietnamese language

Tôi đang tiến hành một cuộc điều tra cho luận án tiến sĩ của mình về "*Hoạt động tiếp thị di động dựa trên sự chấp nhận công nghệ Thế hệ Z: cách tiếp cận đa văn hóa*".

Hãy dành một chút thời gian để trả lời các câu hỏi dưới đây. Thông tin bạn cung cấp sẽ được giữ bí mật và chỉ được sử dụng cho mục đích nghiên cứu. Chúng tôi rất mong nhận được sự hợp tác của các bạn.

Xin chân thành cảm ơn!

Để trả lời câu hỏi dễ dàng hơn, tôi muốn đưa vào định nghĩa về tiếp thị di động. Tiếp thị di động được định nghĩa là các hoạt động tiếp thị cung cấp tiếp thị đến các thiết bị di động như: điện thoại di động, điện thoại thông minh, máy tính bảng hoặc đồng hồ thông minh, v.v.

I. Vui lòng cho biết bạn có thuộc nhóm tuổi từ 18 đến 26 tuổi không?

Nếu có, xin vui lòng tiếp tục.

Nếu không, rất cảm ơn vì bạn đã tham gia.

II.Vui lòng cung cấp ý kiến của bạn về các yếu tố ảnh hưởng đến việc chấp nhận tiếp thị trên thiết bị di động:

Vui lòng hoàn thành bảng câu hỏi sau theo thang điểm 1-5 (1-rất không đồng ý và 5-rất đồng ý).

Tích X ở nơi bạn lựa chọn

Mục	1	2	3	4	5
Tôi thấy tiếp thị di động hữu ích.					
Tôi có thể hưởng lợi từ tiếp thị trên thiết bị di động.					
Tiếp thị di động giúp tiết kiệm thời gian tìm kiếm sản phẩm và dịch vụ.					
Tiếp thị trên thiết bị di động cho phép tôi mua hàng hiệu quả hơn.					
Tiếp thị trên thiết bị di động cho phép tôi mua hàng nhanh hơn.					
Sự tương tác với tiếp thị di động là rõ ràng và dễ hiểu.					
Tương tác với tiếp thị di động không đòi hỏi nhiều nỗ lực trí óc.					
Tương tác với tiếp thị di động dễ dàng.					
Nội dung của tiếp thị di động dễ dàng chia sẻ hoặc giới thiệu.					
Tiếp thị di động không tiết lộ thông tin cá nhân của người tiêu dùng cho các bên không được phép.					
Tiếp thị di động sẽ không chia sẻ thông tin cá nhân của tôi mà không có sự đồng ý của tôi trong tương lai.					
Tiếp thị trên thiết bị di động cho phép tôi kiểm soát cách thức sử dụng thông tin cá nhân mà tôi cung cấp sau đó.					
Tiếp thị di động đảm bảo rằng quyền riêng tư của tôi sẽ không bị xâm phạm trong khi giao dịch.					
Tiếp thị di động cung cấp cho tôi thông tin kịp thời về các sản phẩm có sẵn.					
Tiếp thị di động cung cấp cho tôi thông tin liên quan về các					

sản phẩm có sẵn.					
Tiếp thị di động là một nguồn thông tin tốt về các sản phẩm có sẵn.					
Tiếp thị di động chứa thông tin cập nhật về các sản phẩm có sẵn.					
Thương hiệu trong tiếp thị di động mà tôi tương tác là đáng tin cậy.					
Thông tin được truyền tải bởi thương hiệu trong tiếp thị trên thiết bị di động là chính xác.					
Thông tin được truyền tải bởi thương hiệu trong tiếp thị trên thiết bị di động rất thuyết phục.					
Tôi tin tưởng vào thương hiệu trong lĩnh vực tiếp thị trên thiết bị di động mà tôi tương tác.					
Nhìn chung, tôi tin tưởng vào tiếp thị trên thiết bị di động.					
Tôi cảm thấy tích cực về tiếp thị trên thiết bị di động					
Tôi mua hàng được thúc đẩy bởi tiếp thị trên thiết bị di động.					
Tôi sẽ đọc tất cả tin nhắn từ tiếp thị di động.					
Tôi sẵn sàng tương tác nhiều hơn với tiếp thị di động trong tương lai.					

III. Câu hỏi chung

1. Bạn đã từng biết đến hoặc sử dụng / tiếp xúc với các hình thức tiếp thị di động sau đây chưa?

(Bạn có thể lựa chọn nhiều câu trả lời)

Hình thức tiếp thị di động	**Chưa từng biết**		**Có biết nhưng không tương tác**		**Có tương tác**	
	Có	Không	Có	Không	Có	Không
Tin nhắn văn bản						
Tin nhắn đa phương tiện						
Trang web di động						
Ứng dụng di động						
Mạng xã hội di động						
Giao tiếp trường gần (NFC) (truyền tệp hoặc hình ảnh khi hai thiết bị chạm vào nhau hoặc có thể thanh toán trực tuyến)						
Mã QR						
E-mail di động						
Định vị địa lý (nhận thông tin, ưu đãi qua điện thoại của cửa hàng gần đó)						

2. Nếu bạn hiện không sử dụng hoặc không tương tác với bất kỳ hình thức tiếp thị di động nào, vui lòng cho biết lý do:
(Bạn có thể chọn nhiều đáp án)

Nguyên nhân	Tin nhắn văn bản	Tin nhắn đa phương tiện	Trang web di động	Ứng dụng di động	Mạng xã hội di động	Giao tiếp trường gần	Mã QR	E-mail di động	Định vị địa lý
Hình thức này không phổ biến									
Tôi có ấn tượng rằng hình thức này rất khó sử dụng.									
Tôi cho rằng việc sử dụng hình thức này không tiết kiệm chi phí.									
Tôi nghĩ rằng hình thức này không an toàn.									
Tôi sợ những khoản phí bất hợp lý hoặc gian lận nếu sử dụng hình thức này.									
Hình thức này có một hình ảnh tiêu cực.									

3. Ý kiến của bạn về các hình thức tiếp thị di động mà bạn đã tương tác?

Vui lòng hoàn thành bảng câu hỏi sau theo thang điểm 1-5 (1-không cao và 5- rất cao).

Tích X ở nơi bạn lựa chọn

Hình thức tiếp thị di động	**Mức độ thu hút**				
	1	**2**	**3**	**4**	**5**
Tin nhắn văn bản					
Tin nhắn đa phương tiện					
Trang web di động					
Ứng dụng di động					
Mạng xã hội di động					
Giao tiếp trường gần (NFC)					
Mã QR					
E-mail di động					
Định vị địa lý					

Hình thức tiếp thị di động	**Mức độ tương tác**				
	1	**2**	**3**	**4**	**5**
Tin nhắn văn bản					
Tin nhắn đa phương tiện					
Trang web di động					
Ứng dụng di động					
Mạng xã hội di động					
Giao tiếp trường gần (NFC)					
Mã QR					
E-mail di động					
Định vị địa lý					

Hình thức tiếp thị di động	**Mức độ thông tin**				
	1	**2**	**3**	**4**	**5**
Tin nhắn văn bản					
Tin nhắn đa phương tiện					
Trang web di động					
Ứng dụng di động					
Mạng xã hội di động					
Giao tiếp trường gần (NFC)					
Mã QR					
E-mail di động					
Định vị địa lý					

Hình thức tiếp thị di động	Mức độ làm phiền				
	1	**2**	**3**	**4**	**5**
Tin nhắn văn bản					
Tin nhắn đa phương tiện					
Trang web di động					
Ứng dụng di động					
Mạng xã hội di động					
Giao tiếp trường gần (NFC)					
Mã QR					
E-mail di động					
Định vị địa lý					

4. Thái độ của bạn đối với các hình thức tiếp thị di động là gì?

Vui lòng hoàn thành bảng câu hỏi sau theo thang điểm 1-5 (1-rất không đồng ý và 5-rất đồng ý).

Tích X ở nơi bạn lựa chọn

Hình thức tiếp thị di động	Các chiến dịch sử dụng công cụ này thay đổi thái độ của tôi đối với thương hiệu					Tôi sẽ giới thiệu công cụ này				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Tin nhắn văn bản										
Tin nhắn đa phương tiện										
Trang web di động										
Ứng dụng di động										
Mạng xã hội di động										
Giao tiếp trường gần (NFC)										
Mã QR										
E-mail di động										
Định vị địa lý										

IV. Thông tin cá nhân

1. Giới tính

Nam ☐ Nữ ☐

2. Tuổi

18-22 ☐ 23-26 ☐

3. Trình độ học vấn

Sinh viên ☐

Cử nhân ☐

Cao học ☐

Chân thành cảm ơn!

Appendix – A4 – Distribution of answers to additional questions from the questionnaire

Table I. Knowledge and usage for mobile marketing forms in Poland and Vietnam (%)

Mobile marketing forms	Never knew		Knew but not used		Have used/interacted	
	Vietnam	*Poland*	*Vietnam*	*Poland*	*Vietnam*	*Poland*
SMS	4.6	6.1	44.8	47.4	50.6	46.5
MMS	8.8	39.1	49.1	39.9	42.1	21
Mobile websites	1.5	2.2	30.4	20.1	68.1	77.7
Mobile applications	1.2	1.9	19.2	17.7	79.6	80.4
Mobile social networks	1.0	5.2	14.6	27.3	84.4	67.5
NFC	17.3	34.2	42.6	29.2	40.1	36.6
QR codes	6.8	9.1	34.3	36.4	58.9	54.5
Mobile e-mail	5.9	3.6	27.7	24.5	66.4	71.9
Geolocation	13.8	34.4	38	35.3	18.2	30.3

Source: Data analysis, 2021.

Table II. Opinion on the operational value of mobile marketing forms in Poland and Vietnam (Mean)

Mobile marketing forms	Attractive		Informative		Interactive		Intrusive	
	Vietnam	*Poland*	*Vietnam*	*Poland*	*Vietnam*	*Poland*	*Vietnam*	*Poland*
SMS	2.78	2.62	2.95	2.64	2.84	2.97	3.22	3.86
MMS	2.90	2.29	3.00	2.39	2.91	2.64	3.22	3.26
Mobile websites	3.57	4.06	3.54	4.00	3.40	4.06	3.19	3.45
Mobile applications	3.73	4.22	3.64	4.16	3.59	4.12	3.23	3.53
Mobile social networks	4.02	3.93	3.93	3.99	3.84	3.97	3.30	3.51
NFC	2.97	3.16	2.96	3.13	2.89	3.00	2.92	2.64
QR codes	3.26	3.31	3.24	3.20	3.12	3.14	2.82	2.47
Mobile e-mail	3.32	3.22	3.36	3.21	3.23	3.59	3.04	4.10
Geolocation	3.04	2.90	3.06	2.89	2.99	3.02	2.91	3.11

Source: Data analysis, 2021.

Table III. Action of respondents to mobile marketing forms (Mean)

Mobile marketing forms	Campaigns using this form change my attitude to the brand		I will recommend this form	
	Vietnam	*Poland*	*Vietnam*	*Poland*
SMS	3.02	2.55	2.97	2.17
MMS	3.08	2.35	3.05	1.72
Mobile websites	3.35	3.34	3.49	3.81
Mobile applications	3.47	3.44	3.64	3.99
Mobile social networks	3.64	3.31	3.75	3.69
NFC	3.07	2.54	3.13	2.56
QR codes	3.17	2.66	3.37	2.87
Mobile e-mail	3.24	2.87	3.37	2.77
Geolocation	3.06	2.61	3.15	2.44

Source: Data analysis, 2021.