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TECHNOLOGY ACCEPTANCE IN INTERNET BANKING: A GENERATIONAL
PERSPECTIVE

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ISCTE Business School

November, 2021



BUSINESS
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Acknowledgments

I should know where to start, but I don't. I could write a proper testament here but it would never do justice to the people who have accompanied me along this path. Fortunately, every time I doubted my abilities to finish this project I had someone to encourage me to stay focused and believe in my assets.

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I appreciate you all so much!

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RESUMO

A tecnologia está pronta para ser utilizada e está praticamente a moldar-se como o futuro dos serviços, das comunicações e assim em diante. Algumas pessoas, bem como empresas, tendem a utilizá-la e, na sua maioria, confiam nela para realizar as suas atividades diárias. Algumas não o fazem. Dito isto, é importante reconhecer porque é que algumas gerações e setores estão tão perfeitamente envolvidos com termos como o Internet Banking, e outras gerações e setores estão tão relutantes à sua utilização. Este estudo fornece um olhar sobre quais são os principais fatores que contribuem para a aceitação da tecnologia da geração Y e Z. E qual a diferença que esta aceitação pode fazer em setores de serviços, tais como o setor bancário. Através do modelo UTAUT (Unified Theory of Acceptance and Use of Technology) os fatores e benefícios da tecnologia serão postos à prova. As Geração Y e Z participam num inquérito online que conta com 311 inquiridos para determinar a sua intenção e utilização da tecnologia. As vantagens e limitações do estudo são também discutidas.

Palavras-Chave: Internet Banking, Gerações, Aceitação da Tecnologia

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ABSTRACT

The technology is up for grabs and it is pretty much shaping up as the future of services, communications and so on. Some people, as well as companies, tend to use it and mostly rely on it to perform their daily basis activities. Some don't. With that being said it is important to acknowledge why are some generations and sectors so perfectly engaged with terms like internet banking, and other generations and sectors are so reluctant to its usage. This study provides a look at what are the main factors contributing to the generation's Y and Z technology acceptance. And what's the difference this acceptance can make in service sectors such as the banking sector. Through the UTAUT (Unified Theory of Acceptance and Use of Technology) Model the factors and benefits of technology will be put up to test. Generation Y and Z partake in an online survey that counted with 311 respondents to determine their technology intention and usage. The advantages and limitations of the proposed framework are also discussed.

Key-words: Internet Banking, Generations, Technology Acceptance

Index

- 1. Introduction1
- 2. Literature Review3
 - 2.1. Internet Banking.....3
 - 2.1.1 Concept3
 - 2.1.2 Classic Bank vs Digital Banking3
 - 2.1.3 The Transition5
 - 2.2. Generations.....9
 - 2.3. Technology Acceptance10
 - 2.3.1. Among Generations.....10
 - 2.3.2. Among the Banking Sector.....13
- 3. Conceptual Model.....15
- 4. Methodology17
 - 4.1 Research Context17
 - 4.2. Research Design17
 - 4.3. Data Collection.....17
 - 4.4. Data Treatment.....18
- 5. Results19
 - 5.1. Descriptive Statistics19
 - 5.2 The Measurement Model24
 - 5.3 The Structural Model.....25
- 6. Conclusions.....27
- References.....29
- Appendix I – Survey32
 - Section I32
 - Section II32
 - Section III33
 - Section IV.....34

Section V.....	35
Section VI – Acknowledgments	36
Section VII.....	36
Section VIII.....	36
Section IX.....	37
Section X - Acknowledgments	38

Index of Figures

Figure 2.1 - Banking System's SWOT.....6

Figure 2.2 - Example of a Conceptual Model11

Figure 3.1 - Conceptual Model155

Figure 5.1 - The estimated proposed model25

Index of Tables

Table 4.1 - Demographic data of responses	187
Table 5.1 - Means, medians and standard deviations for the measurement model	19
Table 5.2 – Means, medians and standard deviations of the actions of the Internet Banking users....	22
Table 5.3 - Mann-Whitney Test in Variables	23
Table 5.4 - Mann-Whitney Test in Actions	24
Table 5.5 – Structural Model Results	26

MAIN ABBREVIATIONS USED

PR – Performance Risk

FR – Financial Risk

TR – Time Risk

PSR – Psychological Risk

SR – Social Risk

PRR – Privacy Risk

OR – Overall Risk

PER – Perceived Risk

PE – Performance Expectancy

EE – Effort Expectancy

SI – Social Influence

FC – Facilitating Conditions

BI – Behavioural Intention

1. Introduction

With Internet banking, customers can perform, electronically, a wide range of transactions, such as writing checks, paying bills, transferring funds, printing statements, and inquiring about account balances through the bank's website- banking solution (Martins et al, 2014).

Chillakuri & Mogili (2018) mentioned that adapting to the ever-changing technologies is challenging to both millennials and senior professionals. However, millennials have been exposed to various technologies since school and their use of technologies in every facet of their life has sharpened their ability to cope with newer technologies.

The overwhelming majority of marketers use chronological age as one of the main criteria for market segmentation. For instance, high-tech services are mainly targeted at young people, who are seen as being enthusiastic about and familiar with technological innovations (e.g., Venkatesh et al., 2012). Older individuals, on the other hand, are typically portrayed as lacking enthusiasm, having high dispositional resistance to innovation, showing stress and anxiety toward novelty, and being rigid and unable to learn how to use technologies (Oreg et al., 2009).

Modern client would like to be able to get banking services on their mobile devices and to be able to realize the services from home, from working place, when is on a journey, etc. But the concept of the classical bank is still to do everything to attract client to visit bank office and to present and sell to client products there (Sajić et al, 2018). These days, the customer wants to operate and do his or her banking transactions at any location without going to the bank, at any time without being limited to the bank's working hours, and to do all his or her payments (purchasing, bills, stocks) in a fast and cost-effective way. Consequently, financial services quality ought to be characterized by independence, elasticity, freedom, and flexibility, to accommodate these desires (Khalfan & Alshawaf, 2004).The technology used by different generations are not standardized or same for all. There is the shift in technology from first generation computer (heavy vacuum tubes) to palm top, from wireless to smart phones & from manual system of work to automation. The use of technology increases productivity, makes task ease, bridges generational gap and is helpful for work-life-balance in banking sector (Satpathy et al, 2019).

Building upon the premise that purchasing Internet banking services is perceived to be riskier than purchasing traditional banking services (Cunningham, Gerlach, Harper, & Young, 2005), this study introduces the perceived risk factor. Drawing from perceived risk theory, this study couples specific perceived risk facets (Featherman & Pavlou, 2003) – namely performance, financial, time, psychological, social, privacy, and overall risk – with unified theory of acceptance and use of technology (UTAUT) to propose an integrated model to explain customers' intention to adopt and use Internet banking.

The aims of this study are (i) to test if the internet banking vary according to the generation and (ii) to study the determinants of internet banking adoption.

Therefore, the research questions are:

1. What are the main variables that explain the intention to adopt internet banking?
2. Does the internet adoption vary according to the generation?

The structure of the paper is as follows. In the next section the concept of Internet banking, the differences between the classic and the digital bank, the transition regarding between the last two kinds of banks, the relation each generation has with technology and its acceptance. The research model is then conceptualized. The second part of the paper presents the research design, methodology, and results. Finally, the results are discussed, including the implications for theory and practice, and further possible research directions are outlined.

2. Literature Review

2.1. Internet Banking

2.1.1 Concept

Internet banking is defined as the use of banking services through the computer network (the Internet), offering a wider range of potential benefits to financial institutions due to more accessibility and user-friendly use of the technology (Aladwani, 2001; Yiu, Grant, & Edgar, 2007). Literature suggests many concepts to identify Internet banking, namely electronic banking, online banking, and e-banking.

With Internet banking, customers can perform, electronically, a wide range of transactions, such as writing checks, paying bills, transferring funds, printing statements, and inquiring about account balances through the bank's website- banking solution (Campanella, Della Peruta & Del Giudice, 2015). Furthermore, Internet banking has a significant impact on e-payments, offering a platform to support many e-commerce applications, such as online shopping, online auction, and Internet stock trading (Aladwani, 2001; Lee, 2009; Tan & Teo, 2000).

Internet banking is offered through short message service (SMS) of mobile phone, direct telephone call, mobile phone Internet application, and certain specifically designed 'Apps' in mobile data application systems (Ashraf, 2012; Chikomo et al., 2006; Laukkanen and Lauronen, 2005). It is a value-added service that has many advantages for customers, including ubiquity, convenience, and cost-efficiency (Lin, 2011). However, customers remain skeptical about its adoption, despite the initial expectations of academics and practitioners (Claudy et al., 2015).

E-Banking service is said to rely on the exchange of information between customers and providers using technological methods devoid of face-to face interaction (Darwish & Lakhtaria, 2011). Lustsik (2004) defines E-Banking services as a variety of e-channels for doing banking transactions through Internet, telephone, TV, mobile, and computer. Banking customers' desires and expectations with regard to service are expanding, as technology advances and improves (Hammoud, Bizri & El Baba, 2018).

2.1.2 Classic Bank vs Digital Banking

Rapid advances in the Information Technology industry, causes large changes in the forms of cash, money transfer systems, service delivery and also customer satisfaction in the banking sector. These changes have affected the financial performance of banks (Mohmoodi & Asetmal, 2014).

Nowadays, Artificial Intelligence (AI) and Big Data Analytics (BDA) have risen and played as an important role in the new banking era. The recent trend of AI and BDA enable banking to be more customer-centric based on data driven. Personalization service becoming an important strategy for leveraging the existing customer engagement, and attracting potential customer become new

customers. Arise of mobile computing devices, such as tablets, smartphones, and innovations like GPS have significant impact to customer behaviours. The change of customer behaviours created digital disruption, a phenomenon that changes all industrial landscape and its operations. Today's competitive market indicated by global economic integration into volatile business environment. This condition being challenged to all business sector including banking because the product and service life cycle be shorter. Rapid growth of information technologies and electronic communication puts emphasis on banks to continuously expand, by shifting its competitive dynamics and strategic context (Indriasari et al, 2019).

Application of different types of digital technologies enables increasing speed, security and efficiency of all banking operations and services. It gives many benefits and advantages to the banks and to users of banking services.

The classical bank with its the biggest part is a retail bank. Such banks are waiting for the clients to come into the bank premises with their requests and needs for the services. Such way of work creates many problems and disadvantages to clients and to banks. Clients need to go to the bank premises and to wait for the service wasting their time. Banks need to provide enough premises and space for the clients and enough personal for the services.

The basis of the classical bank is the Central Unit. The unit includes the strategic and operational management of the bank, information technologies (IT) center, marketing, call center, back office, accounting, legal service, head of retail and corporate and other support services. Recently, the bank network was expanded with automated teller machine (ATM) and point of sale (POS) devices. That in some way represents a limited usage of modern digital technologies.

The basic problem of this approach is the fact that the modern person/client, through the use of modern digital and mobile technologies, mobile smart phones and mobile computers, more and more information and services receive remotely using such devices. So, the need of client to come in the bank for a service becomes unnecessary and very rare. But, the basic concept of classical bank is to attract clients to visit their branches and offices (Sajić et al, 2018).

Change in business models of branch operations in all banks has accelerated with the diversification of technological opportunities in order to enhance efficiency of physical branch channels, which is one of the biggest cost items of banks. On the other hand, digital transformation projects raise the question of whether they will eliminate the need for physical branches and / or how to serve customers through a physical branch structure in the upcoming period (Ortaköy & Özsürünç, 2019).

In a study conducted in Portuguese banks, changing business models were examined and it was observed that the branches of the banks started to move from a transaction-based structure to a completely sales-centered one, especially with the expansion of internet and mobile branches (Portela

& Thanassoulis, 2007). The emergence of new channels reduces the importance of branches' role in the distribution of some financial services. This process leads to a mindset shift in branches from operation to marketing and, from transaction-based to customer-based approach. Branches are becoming centers focusing mostly on personal financial advisory services. In this sense, bank branches are shifting from being operating points to be consulting points (ECB, 1999).

Even though operational transactions are shifted to digital channels, the largest channel for deposits and credit transactions is still branches due to the nature of the transaction and regulations. In this respect, branches are positioned not as centres for simple operational transactions such as transfer, payment, collection, account balance, but as locations for financial consulting and some complex financial products and services (Gigov & Poposka, 2017). Banks reorganize the branch business models with a completely marketing-oriented approach.

Physical channels should turn into channels that focus on gaining more new customers, where customer experience is improved, customer-oriented financial advisory and referral activities are carried out. Minimization of operational transactions at the branches and the development of marketing qualifications of all branch staff are the biggest part of branch business model conversions. Operational transactions carried out by branches can be eliminated in three categories as centralization, automation and digital channel migration (Ortakoç & Özsürünç, 2019).

The benefits banks have received, thanks to IT development, have been certainly great, especially considering that productivity has been enhanced and costs reduced due to increased profitability and labor saving. As a consequence, IT development in banks has been inevitably concentrated on banking products, and retail and wholesale IT products have had a favorable impact on productivity and profitability. Since both IT capital investments and IT human resources are positively related to productivity, the use of IT solutions has increased outputs and reduced costs. Furthermore, the banks' competitiveness has been enhanced thanks to differentiation and customer service improvement, reduction of transaction costs, the ability to better avoid risk, and maintenance of a stable customer base and market share (Litvishko et al, 2020).

2.1.3 The Transition

Nowadays, the financial system in general and the banking sector in particular, are developing in accordance with the modern requirements of the digital economics. Due to the digital transformation, business models and concepts for the banking sector's development are being improved.

Digital transformation involves the widespread introduction of modern ways of providing banking services. The number of bank branches is decreasing, and many services are being transferred online, especially when lending or investing funds (Pirainen, 2016).

Filippov (2018) defines FinTech as "an industry consisting of companies that use technology and innovation to compete with traditional financial institutions in the form of banks and intermediaries in the banking market".

Financial technologies are a transformed service that is provided through IT technologies, solutions and data not used before, that allows it to be delivered at a higher level of utility. The inevitability of the ever-increasing use of digital financial innovations in banking leads to a dual effect. On one hand, the activation of new technologies leads to the modernization of banking services, increasing the availability of banking services and the speed of their provision, which increases the demand for them and leads to an increase in the profitability of institutions by balancing the margin provided in turn by reducing transaction costs. On the other hand, the active transfer of transactions to the digital field, as well as the threat of reducing their cybersecurity, increase the risks associated with banking activity; however, the refusal to develop financial technologies in the work of the organization will lead to even more negative consequences (Galazova & Magomaeva, 2019). Clients evaluate their experience of interaction with banks depending on how easy and comfortable it was for them to receive some service, so the banking sector should constantly study the experience of work with clients, identify shortcomings in their work, since new customers will require the use of even more modern technologies.

Many studies have shown that SWOT analysis can affect the company's performance. As with any other organization, SWOT analysis can also be applied to an online banking system so that you can analyze what its overall environment is and how effective it is in managing its core competencies. The following table shows the SWOT analysis matrix adapted to the internal and external environment of the online banking system (Drigă & Isac, 2014).

Strength	Weakness
<ul style="list-style-type: none"> • Access at any time; • Saves a lot of time; • Faster transaction with lower costs; • Convenience for customers; • Competitive advantage for economies of scale; • Provides better convenience and greater efficiency 	<ul style="list-style-type: none"> • Security issues in digital mode; • Sensitivity to the global economy; • The use of Internet banking depends on the availability of the Internet; • Can only target specific customers
Opportunities	Threats
<ul style="list-style-type: none"> • Raising awareness of the benefits of digital banking among people; • Integration of domestic banks with foreign markets; • Better development in areas such as risk management and CRM; • Developing a modern it base to avoid system failures and provide an efficient and secure platform for online transactions. 	<ul style="list-style-type: none"> • Any security-related issues or news may pose a threat; • Tough competition; • Global economic instability; • Lack of effective rules; • Lack of customer loyalty

Source: Litvishko et al. (2020)
Figure 2.1 - Banking System's SWOT

Strength

With the rapid development of the Internet and e-Commerce, the competitive advantage of Internet banking is becoming more noticeable, in particular, the effect of scale. More and more Internet users are ready to switch to online banking. Banks also violate geographical restrictions and can provide banking services on a global level to meet customer needs. Through banking operations, such as expanding the number of employees to reduce unit costs, banks can achieve economies of scale. The advent of Internet banking can support more competitive advantages of economies of scale. First of all, in comparison with traditional Bank branches, the expansion of Internet banking will help to reduce Bank expenses. Second, if computer technologies are developed, Internet banking consolidates complex business and reduces transaction costs for both parties. Additional operations at the front Desk can also be placed in the background. Efficient data processing programs and fast online services not only increase the efficiency of banking operations, but also reduce costs and provide economies of scale.

Weakness

The decision of Internet banks to conduct most of their business online, in addition to presenting their strengths, generates potential weaknesses. In order to run their business and be effective, online banks must consolidate their operations in countries where there is an optimal level of it spending as a percentage of GDP, Internet availability, and people who own a personal computer. % of the total population. Moreover, the target customer segment is very specific. Most of the clients who use online banking services are mostly people with a high level of education and a good understanding of it technologies. Ziyadin et al (2018) for this reason, all those customers who do not fall into this category turn to traditional physical banks for their needs. In addition, most online banks rely heavily on eposit products to generate their revenue, paying less attention to other financial offerings; this, as a result, prevents differentiation of their products, which is one of the main factors for achieving a competitive advantage. From the customer's point of view, the security of personal data and its integrity is one of the main problems. Online banks need to invest heavily in security software because account information theft and virus attacks on Bank databases occur with high frequency.

Opportunities

Cooperation between banks and other stakeholders provides the basis for implementing new business strategies that ultimately lead to value creation for both customers and banks. By offering a wider range of financial products for both risk-averse and risk-averse customers, starting with bonds, options, mutual funds and mortgages, online banks will be able to differentiate their services and thus gain a competitive advantage not only over other online banks, both domestic and foreign, but also traditional banks and other financial institutions (Ziyadin, 2012).

Threats

The main obstacle for online banks is a large number of competitors. Online banks are threatened by traditional banks that offer differentiated products, financial institutions that provide specific financial solutions, and, above all, foreign banks. The rapid development of the Internet actually requires that the laws governing online transactions are up-to-date, since in the case of financial losses to the detriment of customers or in other specific situations, there are no adequate compensatory measures. countermeasures. The world is currently going through difficult economic times. Trade wars, protectionist policies, and global downturns have affected the international banking system (Ziyadin et al, 2019).

The introduction of digital technologies in the banking platform has a significant impact on the workforce and the personnel management system, thereby reducing labor resources through the automation process. In this regard, there is a need to invent a new system for managing digital transformations in the Bank. The following areas must be developed:

- To establish a connection with the audience

- Staff recruitment and training

- To store bulk information create a database

- Come up with and implement special mobile and computer applications

- Improvement and development of business processes.

However, the rapid growth in the popularity of Internet banking confirms that there is a stable and effective demand for this new type of banking services. The cost of customer service via the Internet is minimal, which arouses the interest of customers.

Accordingly, banks must adjust their business culture while developing the appropriate human resources. In addition, commercial banks should also focus on managing communications, social media information, updating information technology platforms, developing network security management schemes, and classifying customers for better management in this digital age (Litvishko et al, 2020).

Stages of the digital transformation of the banking sector:

I stage. The emergence of Digital channels: ATM networks, Internet banking, chatbots. It starts a digital change in business. A user who wants to interact with the Bank through any available channels at a convenient time is in the center of the ecosystem.

II stage. The emergence of Digital products: Big Data, contactless payments, virtual cards, artificial intelligence, machinery. With the help of advanced modern software there are created products E2E (end to end), designed to meet the financial needs of customers for 24-hours.

III stage. Creating a full cycle of digital services: banks not only add digital services to their traditional products, create new digital businesses, completely changed business models, expand the boundaries of their business. The use of digital tools allows them to become global.

IV stage. The Creation of a Digital Brain. "Digital brain" continuously automatically studies data in all the business segments, departments, product lines and services, which gives the organization a higher knowledge of its capabilities

V stage. Creation of "digital DNA" - a new coordinate system for strategic decision-making throughout the life cycle of the Bank.

According to Indriasari et al (2019) the transition should follow the following stages:

. Responding to the new competition: At an initial stage, banks react to changes in the supply and demand of financial services by developing new digital channels and products with which to position themselves in the new competitive environment.

. Technological adaptation: The second stage in the banking digitalization process consists of making an in-depth change to the technology platform, to convert it into a more modular and flexible infrastructure to enable the assimilation of new technologies, as well to speed up the development of new products.

. Strategic positioning: The financial institutions which are furthest down the road in the digital transformation process try to make their major investments in technology pay off by adopting digital strategies which involve dramatic changes to their organizational structure.

2.2. Generations

Today organizations recruit and retain Multi-Generational Workforce (Age Diversified Workforce) which consists of employees from five different generations having diversified competency. It is always a great challenge for organizations to retain and motivate a Multi-Generational Workforce to achieve their goals and objectives in a competitive era (Satpathy et al, 2019).

On the basis of Generational Cohort each generation has unique ideology, work pattern and they are different on the basis of technological adaptability. There are not exact birth dates for each Generational Cohort, but they can be grouped on the basis of definite age boundaries. They are Traditionalists (Born 1928-45), Baby Boomers (Born 1946-64), Gen-X (Born 1965-79), Gen-Y (Born 1980-95) & Gen Z (Born after 1995), (Brusch & Kelly, 2014). They have unique personality and perception on the basis of which they carry different work values and adapt technology differently. Traditionalists regarded as silent Generation and most of them are retired persons who resist technology. Baby Boomers are technically literate, hold power and authority. Xers are very friendly with technology as they prefer work-from-home with their own schedule to work. Gen-Y is regarded as Millennials who are tech savvy, smart, creative, achievement oriented (Sally Kane, 2017) and finally Gen-Z the 5G who is more advanced in technology and cannot walk a single step without the help of IT.

With the emergence of new technologies like Artificial Intelligence, Machine Learning, and Augmented Reality, there is a dearth of skilled workforce across the industries. Adapting to the ever-changing technologies is challenging to both millennials and senior professionals. However, millennials have been exposed to various technologies since school and their use of technologies in every facet of their life has sharpened their ability to cope with newer technologies (Chillakuri, & Mogili, 2018).

As banking sector is automated and every activity is done with the help of computers (IT) it is very tough for banks to deal with multi-generational workforce effectively. The banking sector consists of multigenerational workforce who are different in thought, ideology, attitude, perception and they adapt technology differently (Satpathy et al, 2019).

There are also findings that because of automation, the works of less skilled workers will start to be done by the automated systems and this process will result in a workforce surplus and a loss of income in this segment. According to a research that supports these findings, less educated people are not positively influenced by economic and technological developments and even automation is a factor increasing injustice in income distribution (Lankisch et al, 2018). The digitization process is not optional for banks. From customer preferences to profitability and efficiency concerns, many elements make technological transformation a necessity (Ortakoç & Özsürünç, 2019).

The employees belonging to old generation are technically sound, but they mostly do not depend on technology. Normally, they resist to adapt updated technology due to insecurity and fear. Similarly, the new generation is known as tech savvy or digital generations. So, banks should provide scope for both generations to work together as the young generation can easily share technical knowledge with the old generation. As a result, banks gain strong inter-personal relation and bridge the gap across generations. At the same time, banks should provide refresher training programs and development programs like sharing knowledge on technical knowhow and its positivity to retain experienced employees and digital employees. Banks should also focus on reverse mentoring and establishment of leadership institutes that would help in sharing of knowledge among employees of all generations (Satpathy et al, 2019).

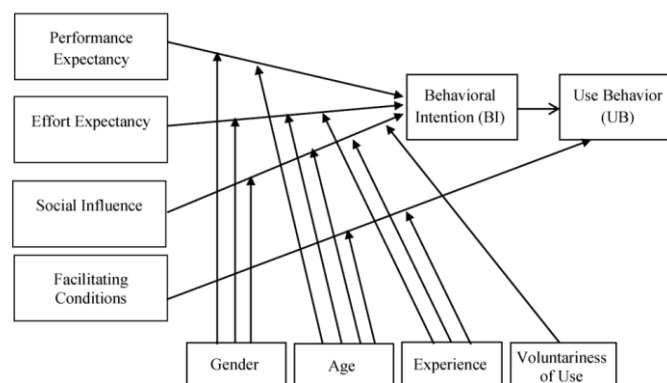
2.3. Technology Acceptance

2.3.1. Among Generations

The acceptance and use of IT systems has been the subject of much research, and in recent years several theories that offer new insights have emerged at both the individual and organizational levels, focused on a country or a set of countries (Im, Hong & Kang, 2011). Each of the several models that have been proposed in the literature has the same dependent variable, use or intention to use, but with various antecedents to understand acceptance of technology.

The most well-known theoretical models at the individual level that have sought to explain the relationship between user beliefs, attitudes, and intentions include Theory of Reasoned Action (TRA – Fishbein & Ajzen, 1975), Theory of Planned Behaviour (TPB – Ajzen, 1991), and Technology Acceptance Model (TAM – Davis, 1989). TAM was designed to predict information technology acceptance and use on the job, in which perceived usefulness and perceived ease of use are the main determinants of the attitudes (Davis, 1989). TPB is more focused on the perceived behavioural control, that is, the perceived ease or difficulty of performing the behaviour (Ajzen, 1991). Both models were based on TRA, which proposes that beliefs influence attitudes that in turn lead to intentions and then consequently generate behaviours (Fishbein & Ajzen, 1975). It is a model drawn from social psychology and is one of the most important theories of human behaviour. According to the researchers, attitude (attitude towards performing behaviour) and subjective norms (social pressures to perform behaviour) are considered as the determinants of behaviour in TRA.

The UTAUT model, following figure, postulates that four constructs act as determinants of behavioural intentions and use behaviour: (i) performance expectancy, (ii) effort expectancy, (iii) social influence, and (iv) facilitating conditions. In addition, UTAUT also posits the role of four key moderator variables: gender, age, experience, and voluntariness of use (Martins et al, 2014).



Source: Venkatesh et al. (2003)
Figure 1.2 - Example of a Conceptual Model

Kuisma, Laukkanen, and Hiltunen (2007) investigated the resistance to Internet banking and their connections to values of individuals and concluded that both functional and psychological barriers arise from service, channel, consumer, and communication. ATM services are still preferred by customers, because of their old routine and the Internet’s insecurity, inefficiency, and inconvenience. Besides the fear of possible misuse of changeable passwords and the lack of proof provided by an official receipt, they found that some customers seem to perceive no performance-to-price value due to the high purchasing costs of a computer and Internet connection. Additionally, non-users also

complain about the lack of social dimension, that is, the absence of a face-to-face encounter, as at a branch.

As seen above, the UTAUT model is able to explain 70% of the variance in usage intention, which is a substantial improvement over any of the eight original models used to build it. Thus, it demonstrates that UTAUT is the most complete model to predict information technologies adoption, and it is therefore used in this investigation (Martins et al, 2014).

It should be noted that resistance should not necessarily be treated as the mere opposite of adoption (i.e., non-adoption), but rather as a specific form of behaviour that may manifest as rejection, postponement, or opposition (Kleijnen et al., 2009). Previous research shows that the inhibitors to adoption are not necessarily enablers for resistance, which proves that resistance is conceptually distinct from non-adoption (Claudy et al., 2015; Kleijnen et al., 2009). According to the literature, such resistance is much more rooted among older individuals than younger ones. This might explain why many firms tend to target the young generations and overlook the old ones (Chaouali & Souiden, 2019).

According to Haeger & Lingham (2014) different generations prefer different technology. Cekada (2012) stated that generations can be adaptive with technology by focusing on effective training programs. Njenga (2018) studied that difference in adaptability of technology brings conflict across generations.

It was found that service quality and trust are the key determinants influencing satisfaction and intention to use and in turn influence the actual usage of the internet banking. The obtained results imply that higher level of trust and better service quality in internet banking will help in retaining old customers and attracting new and potential customers (Sharma & Sharma, 2019).

The findings show that reliability, efficiency, and ease of use; responsiveness and communication; and security and privacy all have a significant impact on customer satisfaction, with reliability being the dimension with the strongest impact. The most significant shortcoming of existing internet banking adoption research is with reference to service phases. There are three stages of internet banking service: static stage, consisting of checking account balance, and viewing account and investment related information; interaction stage, consisting of two-way communication for any enquiries; and transactional stage, consisting of money transfer from one account to another (Mishra and Singh, 2015; Natarajan et al., 2010; Wati et al., 2009). Exploring effects of different categories of trust on behavioural intention for internet banking, a few studies found that institutional trust is the primary driving agent for positive intention to adopt internet banking (Shareef et al, 2018).

The most significant short-coming of existing internet banking adoption research is with reference to service phases. There are three stages of internet banking service: static stage, consisting of checking account balance, and viewing account and investment related information; interaction stage,

consisting of two-way communication for any enquiries; and transactional stage, consisting of money transfer from one account to another (Mishra and Singh, 2015; Natarajan et al., 2010; Wati et al., 2009).

2.3.2. Among the Banking Sector

Digital disruption has changed the way people do business and perform transactions. However, the bankers still found many problems when performing DB (Digital Banking) transformation. Main issues on DB transformation are that many banks still assume that digital transformation is about workflows and systems rather than focus on customer experience.

The Digital Banking transformation depends on the set of circumstances with which each institution starts out, although it is evident that there are several phases depending on the maturity level of the bank. The adoption of AI (Artificial Intelligence) and BDA (Big Data Analytics) are part of Digital Banking transformation strategy to achieve strategic positioning among competitors.

According to Ortakoç & Özsürünç (2019) in order to make the branch operations more efficient the automation option is the most efficient option in terms of speed, effort and customer experience. Banks increase operational efficiency of branches by automating its repetitive and simple banking transactions through the information systems or through the integrations with partner institutions. Thus, business processes are simplified, and the branch workload is aimed to be reduced. If it is not possible to eliminate the work with automation, this elimination can be done by transferring it to the self-service channels which we call as alternative distribution channels or digital channels. With this option in the second level, it is ensured that customers carry out branches' operational work in self-service channels such as ATM, internet and mobile branch. The use of this option for any collection, payment, transfer and cash transaction brings great efficiency to branch operational workload. With digitalization process, banks transfer customer transactions from physical branch channels to digital channels such as internet / mobile / ATM / VTM (Video Teller Machine). Thus, Banks aim at reducing the branch workload and to enhance customer satisfaction and experience by performing the banking transactions rapidly, free of error and non-spatial. In the third step, it is aimed to minimize the operational works in the branches with the centralization of the transactions for which automation and channel migration is not possible. Even if it brings efficiency to the branch operations, this option is evaluated in the latest order because it still requires work force in the center. Banks provide efficiency by centralizing operational workload of branches that cannot be eliminated by automation and digital channel migration.

Banks try to use modern digital and IT technologies, but in a wrong way. Banks send emails and text messages, publish information on their web pages in order to attract clients to visit their offices.

But that is a real problem. Modern client would like to be able to get banking services on their mobile devices and to be able to realize the services from home, from working place, when is on a journey, etc. But the concept of the classical bank is still to do everything to attract client to visit bank office and to present and sell to client products there (Sajić et al, 2018).

3. Conceptual Model

With all being said a conceptual model was created and 10 hypotheses were developed.

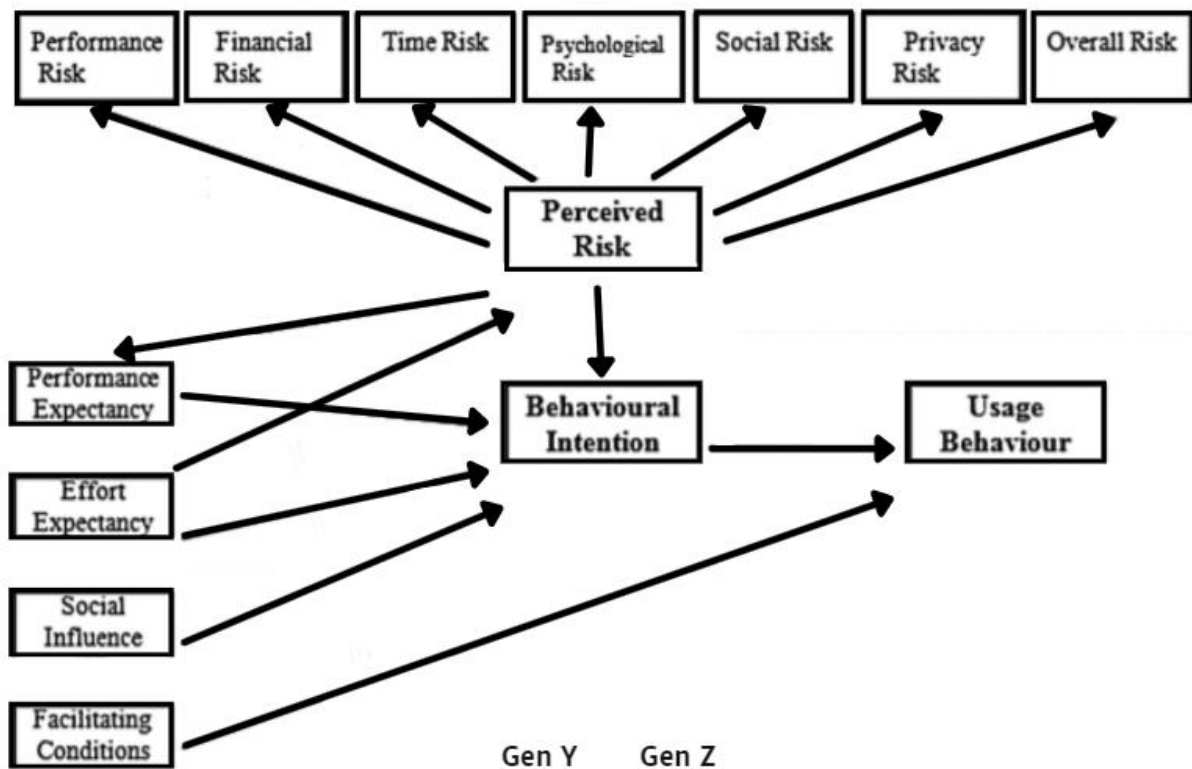


Figure 3.1 - Conceptual Model

This model evaluates the connections between the performance expectancy, perceived ability to use, social influence, facilitating conditions and perceived risk (Independent variables) with the usage behaviour (Dependent Variables).

Performance expectancy refers to the extent to which an individual believes that using a particular technology will enhance his/her performance. Perceived ability to use is defined as the degree of ease associated with the use of the system. Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system. Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. Perceived risk is defined as the direct effect in the online transaction of users' adoption intention.

The hypotheses based in this model are as it follows:

H1. Performance Expectancy (PE) will positively influence Behavioural Intention (BI) and will be moderated by the generations, such that will be stronger for younger individuals.

H2. Effort Expectancy (EE) will positively influence Behavioural Intention (BI) and will be moderated by the generations, such that will be stronger for younger individuals.

H3. Social Influence (SI) will positively influence Behavioural Intention (BI) and will be moderated by the generations, such that will be stronger for older individuals.

H4. Facilitating Conditions (FC) will positively influence Behavioural Intention (BI) and will be moderated by the generations, such that will be stronger for older individuals.

H5. Behavioural Intention (BI) will have a significant positive influence on Usage Behaviour (UB).

H6. Perceived Risk (PER) is a second order factor for seven risks.

H6a. Perceived Risk (PER) will positively influence Performance Risk (PR).

H6b. Perceived Risk (PER) will positively influence Financial Risk (FR).

H6c. Perceived Risk (PER) will positively influence Time Risk (TR).

H6d. Perceived Risk (PER) will positively influence Psychological Risk (PSR).

H6e. Perceived Risk (PER) will positively influence Social Risk (SR).

H6f. Perceived Risk (PER) will positively influence Privacy Risk (PRR).

H6g. Perceived Risk (PER) will positively influence Overall Risk (OR).

H7. Perceived Risk (PER) will negatively influence Behavioural Intention (BI).

H8. Perceived Risk (PER) will negatively influence Performance Expectancy (PE).

H9. Effort Expectancy (EE) will negatively influence Perceived Risk (PER).

H10. The behavioral Intention and the Usage Intention vary according to the generation, Gen Y and Gen Z.

4. Methodology

4.1 Research Context

The banking market in Portugal when it comes to payments and digital counts with 26,2 million of payment cards (2020), 393,6 thousand automatic payment terminals (2020) and 93,1 billion of euros in payment card transactions (2019).

The pandemic has caused a change in consumer habits, with a growth in digital commerce and contactless payments. From the first quarter of 2020 to the first quarter of 2021 there was a 27% increase in the weight of contactless card and mb way purchases in total physical purchases. In the same period there was an 8% increase in the share of digital commerce in the total number of electronic purchases.

Bank customers are increasingly turning to the use of digital channels. According to 2019 data the percentage of checking accounts with internet access reaches 67.3%. From 2010 to 2020 there was an increase from 38.1% to 60.1% with regard to internet users using internet banking. The percentage of internet banking users using mobile networks stands at 61%.

4.2. Research Design

The research design was based in a quantitative primary research. Data was treated through the UTAUT model. The scales for the UTAUT constructs (i.e., performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioural intention) were adapted from Venkatesh et al. (2003). The respondents born between 1996 and 2003 were addressed to their respective generation (Generation Z) that was coded using a 1 while the respondents born between 1980 and 1995 belonging to the Generation Y - Millennials were coding using a 2. The gender was divided between male and female while the marital status was split between married, single or other (for instance, divorced). The options regarding subjects like schooling were high school, professional degree, bachelor's degree, master's degree and other (for instance, PhD) while regarding occupation were student, working student, unemployed, employed, self-employed. In addition, there was the question 'Have you ever used Internet Banking' to separate the respondents preventing the non-users to answer the last section with specific questions about the kind of usage.

All the items present in the subsequent sections were measured using a seven-point Likert scale, with the anchors being "strongly disagree" and "strongly agree". Usage was measured as a formative composite index of both variety and frequency of Internet Banking use.

In the last section a list of ten actions of Internet Banking was provided and respondents were asked to indicate their usage frequency for each action. The anchors of the seven-point scale ranged

from "never" to "everyday". Those actions were picked after consulting several portuguese banks advertisements regarding their Internet Banking apps. They are the following:

- . Consult the balance and movements of the accounts;
- . Make transfers and payments;
- . Charging the phone;
- . Mobilize and/or reinforce savings;
- . Adhere to cards;
- . Manage cards;
- . Pay at the store with QRCode or Apple Play;
- . Withdrawing money with your cell phone;
- . Pay invoices in PDF;
- . Use the voice-activated digital assistant.

4.3. Data Collection

Data was collected in a Quantitative research through a survey addressed to the Portuguese population (See Appendix). There were 379 valid respondents. Every respondent not belonging to Gen Y or Z was removed leaving it with 311 respondents. It was pilot tested among a group of 10 users, who were not included in the main survey. It was found preliminary evidence that the scales were reliable and valid.

The target of this study are the Portuguese generations between 18 and 40 years old.

Variable	Categories	Count	%
Gen	1 (Z)	135	43,69%
	2 (Y)	174	56,31%
Gender	Female	181	58,58%
	Male	128	41,42%
Marital Status	Married	50	16,18%
	Other	14	4,53%
	Single	245	79,29%
Schooling	Professional Degree	14	4,53%
	High School	30	9,71%
	Bachelor Degree	120	38,83%
	Master Degree	103	33,33%

	Other	1	0,32%
	Graduate Degree	41	13,27%
Occupation	Unemployed	4	1,29%
	Student	34	11,00%
	Working Student	52	16,83%
	Employed	212	68,61%
	Self-Employed	7	2,27%

Source: Online Questionnaire (implemented between 1st of June and 1st of September 2021) to Portuguese people between the ages of 18 and 40 years old (Total respondents: 311)

Table 4.1 - Demographic data of responses

4.4. Data Treatment

The questionnaire was created in portuguese to suit the target's language.

The data analysis started with a descriptive analysis of the individual items.

It was used partial least squares – path modeling (PLS) to test the model (Hypothesis H1 to H9) because there's quite a number of interaction terms and PLS is capable of testing these effects (Chin et al. 2003). Using the Smart-PLS software, it was first examined the measurement model to assess reliability and validity before testing the various structural models. To test the hypothesis H10 this study employed the Mann-Whitney independent test.

5. Results

5.1. Descriptive Statistics

As previously mentioned, several sections of the questionnaire were measured using a seven-point Likert scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'.

The first table (Table 5.1) below analyzes the mean, median and standard deviation from items. The results show that the respondents are moderately concerned with risks like performance, financial, privacy and overall risk. Regarding the other mentioned risks like time and psychological and social don't present as threats to the internet banking usage. The performance expectancy weights the most in a positive way as respondents can easily understand the importance of the internet banking usage in their everyday life. Effort expectancy reveals that it is easy to use and the most part of the respondents have the necessary conditions to access and the intention to keep on using. Social influence also has a say in terms of the contributions to the usage.

The items in the second table (Table 5.2) were answered by 88% of the respondents as they are the ones who use Internet Banking. This table shows the number of actions depicted when using Internet Banking and how often they're used by the respondents. The most common actions are consulting the balance and movements of the accounts, making transfers and payments and mobilize and/or reinforcing savings while the less common action is using the voice-activated digital assistant.

Latent Variable	Variable's Code	Item	Mean	Median	SD
Performance Risk	PR1	The security systems built into Internet Banking are not strong enough to protect my account.	3,31	3,00	1,61
	PR2	Internet Banking may not perform well and create problems with my account.	2,84	3,00	1,37
Financial Risk	FR1	Using Internet Banking subjects my account to potential fraud.	3,43	3,00	1,45
	FR2	The probability of losing money when using Internet Banking is high.	2,44	2,00	1,28
Time Risk	TR1	The possible loss of time in installing and learning how to use Internet Banking is high.	1,89	1,00	1,14

Latent Variable	Variable's Code	Item	Mean	Median	SD
	TR2	I think that if I use Internet Banking I will lose time since I have to switch to a payment method other than the traditional one.	1,77	1,00	1,10
Psychological Risk	PSR1	Internet Banking does not fit well with my image or lifestyle.	1,60	1,00	1,05
Social Risk	SR1	By using Internet Banking the way others think of me will be affected in a negative way	1,38	1,00	0,87
Privacy Risk	PRR1	The chances of using Internet Banking and losing control over the privacy of my payment information are high.	2,72	2,00	1,46
	PRR2	Hackers can take control of my bank account if I use Internet Banking.	3,38	3,00	1,48
Overall Risk	OR1	It is risky to use Internet Banking.	2,83	3,00	1,33
	OR2	I would not feel protected by providing personal information through Internet Banking.	3,00	3,00	1,44
Perceived Risk	PER1	The probability that something will go wrong when using Internet Banking is high.	2,81	2,00	1,31
	PER2	I don't feel comfortable using Internet Banking because other people can access my data.	2,60	2,00	1,33
Performance Expectancy	PE1	Internet Banking is useful in everyday life.	6,22	7,00	1,09
	PE2	Internet Banking increases productivity.	5,39	6,00	1,48

Latent Variable	Variable's Code	Item	Mean	Median	SD
	PE3	Internet Banking helps in accomplish tasks more quickly.	6,08	6,00	1,19
Effort Expectancy	EE1	Internet Banking is easy to use.	5,97	6,00	1,19
	EE2	The interactions with the Internet Banking channel are clear and understandable.	5,64	6,00	1,20
Social Influence	SI1	Using Internet Banking is a status symbol in my environment.	3,34	4,00	1,77
	SI2	The people whose opinions I value think you should use Internet Banking.	4,09	4,00	1,74
	SI3	People in my environment who use Internet Banking have more prestige than those who don't.	2,71	2,00	1,73
Facilitating Conditions	FC1	I have the necessary resources to use Internet Banking.	6,12	7,00	1,16
	FC2	I have the necessary knowledge to use Internet Banking.	5,92	6,00	1,29
	FC3	Internet Banking is not compatible with the other systems I use.	2,33	2,00	1,67
Behavioral Intention	BI1	I intend to use Internet Banking regularly.	5,83	6,00	1,31
	BI2	I plan to continue using Internet Banking in the future.	6,17	7,00	1,20

Latent Variable	Variable's Code	Item	Mean	Median	SD
	BI3	I intend to recommend Internet Banking to friends and/or family.	5,66	6,00	1,42

Source: Online Questionnaire (implemented between 1st of June and 1st of September 2021) to Portuguese people between the ages of 18 and 40 years old (Total respondents: 311)

Table 5.1 - Means, medians and standard deviations for the measurement model

Usage	Mean	Median	S
Consult the balance and movements of the accounts.	5,69	6,00	1,15
Make transfers and payments.	5,24	5,00	1,23
Charging the phone.	3,57	4,00	2,32
Mobilize and/or reinforce savings.	4,16	4,00	1,98
Adhere to cards.	2,54	2,00	1,86
Manage cards.	4,07	4,00	1,94
Pay at the store with QRCode or Apple Play.	3,44	3,00	2,32
Withdrawing money with your cell phone.	3,24	3,00	2,10
Pay invoices in PDF.	3,43	3,00	2,20
Use the voice-activated digital assistant.	1,65	1,00	1,31

Source: Online Questionnaire (implemented between 1st of June and 1st of September 2021) to Portuguese people between the ages of 18 and 40 years old (Total respondents: 311)

Table 5.2 – Means, medians and standard deviations of the actions of the Internet Banking users

The table below (Table 5.3) presents the results of the Mann-Whitney test that reveal if there are any significant differences in the distribution of the responses to each variable and the generation.

There are several differences between generations regarding variables such as PRR2, PER1, PER2, PE2, FC2. In relation to PRR2, PER1 and PER2 Generation Z presents bigger value while in PE2 and FC2 is the opposite.

As to Table 5.4 the differences between generations are represented in the adhering to cards, paying invoices in PDF and using the voice activated digital assistant. These three actions are presenting in bigger values by Generation Y.

It can also be noted that Gen Y presents slighter higher average values.

	Gen		Independent-Samples Mann-Whitney U Test Summary	
	Z Mean	Y Mean	Mann-Whitney U	P-Value
PR1	3,18	3,41	12471,5	0,341
PR2	2,81	2,86	11960,0	0,777
FR1	3,39	3,47	12057,5	0,682
FR2	2,50	2,40	10891,0	0,256
TR1	1,93	1,86	11275,0	0,512
TR2	1,93	1,64	10591,5	0,099
PSR1	1,67	1,55	11218,0	0,415
SR1	1,45	1,32	11220,5	0,335
PRR1	2,83	2,64	10588,5	0,127
PRR2	3,54	3,25	10221,5	0,046*
OR1	2,92	2,76	10775,0	0,198
OR2	3,05	2,97	11280,5	0,541
PER1	3,00	2,67	10181,0	0,037*
PER2	2,82	2,43	9846,5	0,012*
PE1	6,16	6,27	12044,0	0,672
PE2	5,22	5,53	13236,0	0,049*
PE3	5,99	6,16	12320,5	0,425
EE1	5,86	6,06	12692,5	0,197
EE2	5,56	5,71	12611,0	0,250
SI1	3,47	3,24	10867,0	0,248
SI2	4,15	4,05	11264,5	0,525
SI3	2,81	2,64	11039,0	0,345
FC1	6,04	6,19	12289,0	0,446
FC2	5,70	6,09	13415,5	0,023*
FC3	2,38	2,30	11575,0	0,817
BI1	5,62	5,99	13696,5	0,090
BI2	6,04	6,26	12991,0	0,077
BI3	5,54	5,75	12707,5	0,198

Source: Online Questionnaire (implemented between 1st of June and 1st of September 2021) to Portuguese people between the ages of 18 and 40 years old (Total respondents: 311)

Table 5.3 - Mann-Whitney Test in Variables

	Gen		Independent-Samples Mann-Whitney U Test Summary	
	Z Mean	Y Mean	Mann-Whitney U	P-Value
Consult the balance and movements of the accounts.	5,65	5,71	9420,5	0,628
Make transfers and payments.	5,08	5,36	10237,5	0,074
Charging the phone.	3,65	3,51	8803,5	0,613
Mobilize and/or reinforce savings.	4,05	4,23	9500,5	0,551
Adhere to cards.	2,29	2,73	10458,0	0,030*
Manage cards.	3,82	4,25	10190,0	0,094
Pay at the store with QRCode or Apple Play.	3,63	3,31	8365,0	0,229
Withdrawing money with your cell phone.	3,36	3,16	8736,5	0,542
Pay invoices in PDF.	2,90	3,81	11179,0	0,001*
Use the voice-activated digital assistant.	1,53	1,73	10265,0	0,025*

Source: Online Questionnaire (implemented between 1st of June and 1st of September 2021) to Portuguese people between the ages of 18 and 40 years old (Total respondents: 311)

Table 5.4 - Mann-Whitney Test in Actions

5.2 The Measurement Model

The analysis of the measurement model allowed to verify internal consistency, convergent validity and discriminant validity.

5.3 The Structural Model

The PLS-PM methods is used to test the hypotheses regarding the relationships between the constructs in the developed model (see Figure 5.1).

The structural model path coefficients were considered. Whether a coefficient is significant depends on the standard error that is obtained, which allows a calculation of the empirical t-value and p-value.

As presented in the table below (Table 5.5) all the hypotheses are validated since there is statistically significant relationship at a 5% significance level. Facilitation Conditions registered the strongest direct effect on Behavioral Intentions ($b=0,369$; $t=5,712$; $p=0,00$), followed by Effort Expectancy ($b=0,361$; $t=5,541$; $p=0,00$). As expected, Perceived Risk negatively influences Behavioral Intentions ($b=-0,158$; $t=2,812$; $p=0,00$).

This means that concerns like something going wrong when using Internet Banking and not feeling comfortable regarding the data that can be accessed are positively related with other concerns like thinking it is risky to use Internet Banking or feeling unprotected while using it. Or even feeling that privacy is at stake and that there is a chance of losing money via potential fraud.

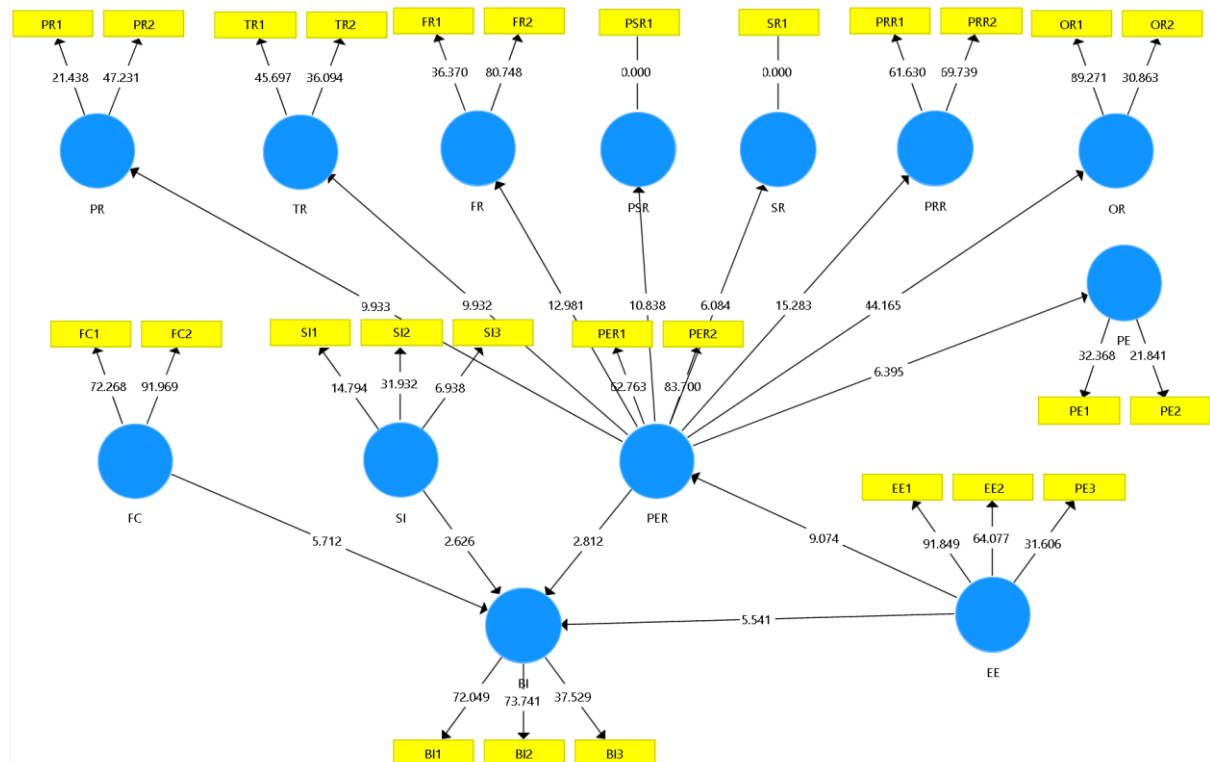


Figure 5.1 - The estimated proposed model

	Original Sample	T Statistics	P-values
EE -> BI	0.361	5.541	0.000
EE -> PER	-0.475	9.074	0.000
FC -> BI	0.369	5.712	0.000
PER -> BI	-0.158	2.812	0.005
PER -> FR	0.619	12.981	0.000
PER -> OR	0.823	44.165	0.000
PER -> PE	-0.369	6.395	0.000
PER -> PR	0.524	9.933	0.000
PER -> PRR	0.698	15.283	0.000
PER ->PSR	0.457	10.838	0.000
PER -> SR	0.315	6.084	0.000
PER -> TR	0.491	9.932	0.000
SI -> BI	0.103	2.626	0.009

Table 5.5 – Structural Model Results

6. Conclusions

Based on purposely built survey, it was gathered the responses from 311 portuguese people with ages between 25 and 55 years old. There is a large variety of variables to address when regarding Internet Banking but, and according to this study, aspects like Perceived and Privacy Risk are the ones that mainly manifested by the users. Between these generations, who use this system in a large basis, they all share Facilitating Conditions to do it as well as the Intention to do it. There aren't major differences between the generations regarding this matter since they, in some way, were able to accompany the developing of technology that led to this new reality.

This study contributes to previous studies by reaching to Portugal and focusing on two generations. Portugal is a developed country composed by very different people according to its regions that usually share very distinct ideas about certain ideas. Not in this case. And the generations depicted represent a good portion of the portuguese as well.

The findings of this study reveal that Perceived Risk is an important factor affecting the end-user intention to use Internet Banking. Thus, managers must ensure that the internet banking platform is well-oiled, more intuitive than never and always ready to make sure that people don't necessarily need to go to a bank in order to perform a certain action. All the risks must be considered and addressed accordingly namely the privacy and the perceived risk. In order to secure a big part of the users rely on the usage of several security measures like passwords, SMS texted codes and cards with special codes to perform certain transactions. And lastly, elder users must find some advantage when using this kind of services since they are so used to go to bank branches. By not paying for some types of transfers they'll be more aware not only of the efficiency but by the convenience as well.

While this study adds to the existing body of knowledge, it is also acknowledged its limitations, mainly concerning the convenience sampling, the sampling and the generations depicted. The convenience sampling respondents were middle aged, highly educated in the banking sector whose behaviour might differ somewhat from the population average. They are very aware of the Internet Banking concept and used it in order to perform their job as much as in their everyday life, and this may have biased the results. The present study presents some limitations worth to note. First, the sampling respondents were 311. There are 10,5 million habitants in Portugal therefore the representation of the generations depicted might not be representative. The respondents belonged to the Generation Y and Z meaning that they were born inside or alongside the technology revolution and the internet banking evolution as well. It seems likely that people with an older age and with less education would struggle when using the Internet Banking. Lastly, it could be very interesting to dig deep into future research by testing this model in more generations and apply it to other countries

with other contexts, as well as to test other variables like the bank institution and not just the concept of internet banking as a whole.

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Appendix I – Survey

Section I

Question 1	Birth year	4 digits open answer
Question 2	Gender	Male
		Female
		Another
Question 3	Marital Status	Single
		Married
		Another
Question 4	Schooling	High School
		Professional Degree
		Bachelor Degree
		Graduate Degree
		Master Degree
Question 5	Occupation	PhD/Another
		Student
		Working Student
		Self-Employed
		Employed
Question 6	Use of Internet Banking	Unemployed/Retired
		Yes
		No

If the answer to Question 6 was 'Yes' the respondent was direct to the following sections.

Section II

Question 7	How often do you use Internet Banking?	1 to 7 Lineker Scale with a 7 representing everyday frequency
Question 8	How long have you been using Internet Banking?	Previous to one year
		Between 1 and 3 years
		Between 4 and seven years
		More than 8 years

Section III

Question 9	The security systems built into Internet Banking are not strong enough to protect my account.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 10	Internet Banking may not perform well and create problems with my account.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 11	Using Internet Banking subjects my account to potential fraud.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 12	The probability of losing money when using Internet Banking is high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 13	The possible loss of time in installing and learning how to use Internet Banking is high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 14	I think that if I use Internet Banking I will lose time since I have to switch to a payment method other than the traditional one.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 15	Internet Banking does not fit well with my image or lifestyle.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 16	By using Internet Banking the way others think of me will be affected in a negative way.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 17	The chances of using Internet Banking and losing control over the privacy of my payment information are high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 18	Hackers can take control of my bank account if I use Internet Banking.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 19	It is risky to use Internet Banking.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 20	I would not feel protected by providing personal information through Internet Banking.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Question 21	The probability that something will go wrong when using Internet Banking is high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 22	I don't feel comfortable using Internet Banking because other people can access my data.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Section IV

Question 23	Internet Banking is useful in everyday life.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 24	Internet Banking increases productivity.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 25	Internet Banking helps in accomplish tasks more quickly.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 26	Internet Banking is easy to use.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 27	The interactions with the Internet Banking channel are clear and understandable.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 28	Using Internet Banking is a status symbol in my environment.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 29	The people whose opinions I value think you should use Internet Banking.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 30	People in my environment who use Internet Banking have more prestige than those who don't.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 31	I have the necessary resources to use Internet Banking.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 32	I have the necessary knowledge to use Internet Banking.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Question 33	Internet Banking is not compatible with the other systems I use.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 34	I intend to use Internet Banking regularly.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 35	I plan to continue using Internet Banking in the future.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 36	I intend to recommend Internet Banking to friends and/or family.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Section V

Question 37	Consult the balance and movements of the accounts.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 38	Make transfers and payments.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 39	Charging the phone.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 40	Mobilize and/or reinforce savings.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 41	Adhere to cards.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 42	Manage cards.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 43	Pay at the store with QRCode or Apple Play.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 44	Withdrawing money with your cell phone.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 45	Pay invoices in PDF.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'
Question 46	Use the voice-activated digital assistant.	1 to 7 Likert Scale with 1 representing 'Never' and 7 representing 'Everyday'

Section VI – Acknowledgments

If the answer to Question 6 was ‘No’ the respondent was direct to the following sections.

Section VII

Question 47	Why?	Open answer
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Section VIII

Question 48	The security systems built into Internet Banking are not strong enough to protect my account.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 49	Internet Banking may not perform well and create problems with my account.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 50	Using Internet Banking subjects my account to potential fraud.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 51	The probability of losing money if you use Internet Banking is high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 52	The possible loss of time in installing and learning how to use Internet Banking is high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 53	I think that if I use Internet Banking I will lose time since I have to switch to a payment method other than the traditional one.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 54	Internet Banking does not fit well with my image or lifestyle.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 55	By using Internet Banking the way others think of me will be affected in a negative way.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 56	The chances of using Internet Banking and losing control over the privacy of my payment information are high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 57	Hackers can take control of my bank account if I use Internet Banking.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Question 58	It is risky to use Internet Banking.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 59	I would not feel protected by providing personal information through Internet Banking.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 60	The probability that something will go wrong when using Internet Banking is high.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 61	I don't feel comfortable using Internet Banking because other people can access my data.	1 to 7 Likert Scale with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Section IX

Question 62	Internet Banking is useful in everyday life.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 63	Internet Banking increases productivity.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 64	Internet Banking helps in accomplish tasks more quickly.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 65	Internet Banking is easy to use.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 66	The interactions with the Internet Banking channel are clear and understandable.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 67	Using Internet Banking is a status symbol in my environment.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 68	The people whose opinions I value think you should use Internet Banking.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 69	People in my environment who use Internet Banking have more prestige than those who don't.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Question 70	I have the necessary resources to use Internet Banking.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 71	I have the necessary knowledge to use Internet Banking.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 72	Internet Banking is not compatible with the other systems I use.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 73	I intend to use Internet Banking regularly.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 74	I plan to continue using Internet Banking in the future.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'
Question 75	I intend to recommend Internet Banking to friends and/or family.	1 to 7 Likert with 1 representing 'Strongly Disagree' and 7 representing 'Strongly Agree'

Section X - Acknowledgments