

Understanding Online banking adoption: interpretive study in Austrian banking context

Master Thesis submitted in fulfillment of the Degree Master of
Science in Management

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Submitted to Dr. Dimitris Christopoulos

AFFIDAVIT

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ABSTRACT

This study aims to define factors that influence the spreading of online banking in Austrian society. The literature review chapter consists of two-part. The first defines online banking. The second part presents available theoretical models in order to provide the base for this study. In the next chapter, the thesis presents six hypotheses. Further, the thesis has displayed analysis of primary data. It was collected via survey and interviews with bank customers. The result of this research is compared with the results of similar studies. In the end, the thesis draws the conclusion and recommendations for further studies.

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Introduction

In the modern world, developments in information technology have impacted numerous organizations and significantly changed habits of customers. In regards to the digitalization of organizational services, the banking industry was affected by the appearance of online banking.

In the existing literature, online banking is described as a new method of delivering financial services to their customers online via electronic means (Daniel 1999, cited at Chowdhury et al, 2015). Additionally, It gives an opportunity to bank customers to conduct their transactions twenty-four hours a day, from any place. Also, most of the local banks in Austria do not charge any extra fee neither for opening neither for a further serving of the online banking account.

Therefore, banks offer financial services via the internet in an online banking website or a special mobile app. However, numerous banks keep physical branches and serve customers face in face. In the online banking, a bank customer may send an email or shot notice to the bank worker, check personal balance, make a transaction, and block a card in case of the card loss (Grabner-Kräuter & Breitenecker, 2011).

In the modern world, banks seek to provide high-quality services in order to retain and gain new customers. However, despite numerous apparent benefits that bank customers gains by using online banking. Online banking adoption varies from country to country (Grabner-Kräuter & Breitenecker, 2011). According to Eurostat (2017), the online banking adoption in Austria is approximately 50% among individuals aged between 16 and 74 years old.

In Greece and Romania, there are less than 25% of internet users who make use of online banking. On the other hand, in Sweden, around 85% of the population are adopters of the system (Eurostat, 2017). It is obvious that the rate of online banking adoption varies from region to region.

The statistical data points out the need to further investigate the factors that determine consumers' adoption of online banking. Therefore, the research question is as follow: Which factors do influence on bank customer attitudes toward using online banking in Austria?

In order to answer the research question, the study employes a technology acceptance model. It was introduced in 1989 year during the period of global technological and telecommunication development by Davis Fred. Technology Acceptance Model consists of two variables: perceived usefulness and perceived ease of use of the new technology. Thus, the study includes those two variables for the purpose of providing a basic theoretical framework.

In order to improve the model's predictive power, in the thesis are incorporated additional individual difference variables. Those variables are web usability of online banking, privacy threat, a need for personal contact and trust in the bank. Those variables are relevant for this study, because literature regarding online banking shows that the lack of trust in banks and preference for personal contact with bank worker do significantly impact on the online banking adoption (Flavián et al., 2006; Mukherjee and Nath, 2003; Rotchanakitumnuai and Speece, 2003; cited at Grabner-Kräuter and Breitenecker, 2008).

The thesis is structured as follows: after this introduction, section two presents a brief explanation of online banking and multiple theoretical frameworks. In the third section, the methodology of this study will be explained. The final part presents the results of this study. Target readers of this research are academics, students, banks' workers, and experts in the banking & finance sector.

Literature review

Introduction

The following section is composed of multiple concepts that are relevant for this study: the first section elaborates the term e-banking and online banking. In the second, numerous advantages and disadvantages associated with online banking are presented. Last part explains several models that describe the drivers of new technology spreading among individuals. The purpose of this chapter is to provide a theoretical insight into the study.

Defining the term E - banking

Since the 1990s, there has been a fundamental shift in banking delivery channels toward using self-service channels such as online banking (Pikkarainen et al., 2004). Online banking is a type of electronic banking system. Generally, electronic banking means banking activities, transactions, and operations conducted via electronic means. In this context, electronic means are a mobile phone, personal computers, laptops, or any other electronic item that provides access to the world wide web (Daniel 1999, and Burr, 1996 cited at Chowdhury et al, 2015).

The term 'electronic banking' is commonly associated with digital banking, mobile banking, online banking, and incumbent banking. In accordance with Angelakopoulos, G., & Mihiotis, A. (2011), and Chowdhury et al, (2015), one of the e-banking technology is automated teller machine (ATM), because of it technically the 'electronic mean' or a machine that provides financial services to an individual.

Therefore, e-banking is a more universal term than 'online banking'. In the following paragraph is described the term 'online banking' for the purpose of bringing clarity to this research.

Defining the term Online banking

Online banking is "a technological system that enables banks to provide their services to bank customers through the internet or online" (Lympelopoulos & Chaniotakis, 2004). Ordinarily, a bank customer accesses his or her online banking account via an app on the smartphone or bank's website via electronic means. After passing the login page, the bank customer may check the balance, make a transfer, or message to the bank worker, etc.

Currently, in Austrian market operates two types of online banking. In the first case, an established bank develops a new service 'online banking' for existing and potential customers. This could be referred to Reiffesen bank group and the introduction of "Elba" online banking. In many cases, the bank uses the intranet platform, and gives permission to the bank customers to enter the personal account.

In the second case, a group of professionals develop an online banking website and offer financial service only online. In the same time, the bank does not have physical branches operating in the city. In the academic literature, such type of online banking is defined as 'virtual bank' (Yang et al., 2009). Currently, 'easy bank' is the only virtual bank operating in Austria.

Generally, virtual banks do not offer financial services to their bank account holder off-line. Thus, such structure limits either the virtual banks in competition with established banks that offer personal meetings and assistance to their customers. The second factor is brand presence. It aids the bank in building brand recognition and enhance the trust form the existing and potential bank's customers.

List of basic services offered in online banking

In the study of strategic perspective of online banking carried out by Scornavacca et al., (2007) was carefully analyzed numerous of banks' websites. Based on this analysis, researchers have derived a list of basic services which banks have offered through their online banking:

- Checking account balances
- Checking information on current/opened and previous transactions
- Executing fund transfers / transactions using TAN verification
- Checking credit and debit card information
- Checking balance on deposit account
- Account maintenance and administration
- TAN lockout for the respective bank account / PIN alteration

In addition to the essential services listed above, online banking offers additional services. Those are tracking a round-up savings plan, tracking investment in the multiple funds, picking a design for the credit card, etc.

Advantages of online banking

The online banking services offer a series of advantages for the banks and their customers: accessibility, service quality, easy verification of transactions, user-friendliness, banks reduce their operational costs, bank workers have smaller volume of work at the bank branch, banks can increase their income, and real-time upgrade of customers' data (Jiménez & Diaz, 2019; Angelakopolous & Mihiotis, 2011; Chatzoglou et al., 2014; and Smith, 2006).

Bank cuts its operational expenditure. Transactions performed by individuals not in the bank branch positively reflects on a bank 's operational costs.

The study related online banking adoption in Greece by Angelakopolous & Mihiotis (2011), made rough esteem of bank's expenditures on maintaining physical bank branches and paying salaries to bank employees who work there. The study showed that the average cost per financial transfer in a physical branch is a bit higher than 1 dollar. In case the same transaction is performed in online banking it costs less than 10 cents. Despite the maintenance costs of the bank branch in Greece may vary from maintenance costs of office in Austria.

In a nutshell, online banking allows individuals to utilize financial services without visiting the bank and at the same time, banks do not need to spend financial means on bank offices around the country.

Banks increase revenues and may increase income. Digitalization of the banks may increase revenues as well as may increase income. Nowadays, part of banks expenditures is branches support with fixed costs on electricity and salaries. Online banking allows the bank's to cut operational costs by closing some bank branches (Zhao et al., 2008., cited at Chatzoglou et al., 2014). On the other hand, numerous professionals that worked at the bank branches are losing their job. Nevertheless, numerous bank workers from closed branches may continue working at the head quarter and grow on a career path (Durkin et al., cited at Jimenez et al., 2019).

Moreover, the growth of a particular bank and the strategy of this bank to enter in other countries with no extensive physical presence have become realistic because of online banking. It creates an opportunity for the bank to enter the new market with minimum investment. In the case of successful entrance, the bank may rise revenues, profits and other key performance indicators (Angelakopolous & Mihiotis, 2011). Also, in Austria, the public perception is that in the region operates more banks than necessary. In other words, Austria is overbanked and over branched, and that "there is a need for (further) consolidation and cost-cutting" (Burgstaller, 2017).

The volume of work is decreased at the physical banks. An additional benefit for the banks is the time that bank workers may spend on other important tasks, for instance, promoting online banking to non-adopters, brainstorming how to increase a market share, etc. Also, bank customers do not proceed transactions at the bank branch and ask for assistance from the bank worker. They simply can conduct a transaction online from other convenient places and do not bother bank employees (Angelakopolous & Mihiotis, 2011).

Accessibility. Accessibility is "a multidimensional criterion-related with the access of physical terminal and system usage ability" (Karahanna & Straub , 1999). Online banking is associated with accessible technology. In order to utilize online banking services, the only requirement is to have priorly activated account on an online banking website and internet access. Once the customer reaches a personal online banking account, he or she is able to perform financial activities regardless of the time and location (Angelakopoulous & Mihiotis, 2011).

Also, in accordance with Montazemi and Qahri - Saremi (2014) research that was investigating factors affecting an adoption of online banking the advantage which positively affects online banking adoption is enabling access to the financial services without time restrictions. In other words, online banking is accessible 24 hours, every day.

Another point, the accessibility of the website allows an individual to learn the functions of online banking gradually without time borders and need to visit the bank branch.

Convience of usage. An obvious benefit of using online banking is convenient. Online banking website or an app was developed and improved with keeping in mind the ease of use and comfortable navigation (Smith, 2006). In addition, in Austria, multiple banks have created a language option, which allows bank customers to use the website or an app on the English language.

Service quality. The process of designing and implementing online banking services helps to improve the bank's services quality. Generally, perceived service quality is a consumer's opinion about organizations' capacity to satisfy customer needs.

Banks are obliged to fulfill their customer expectations through online banking. Online banking website can be continuously improved, for instance, optimization of the option, improvement of the web design and navigation, etc. Continuous improvement of the website will maximize service quality. On the long term perspectives, continuous improvement may attract new customers and positively affect a bank's market share and other key performance indicators (Angelakopolous & Mihiotis, 2011).

Personalized verification. In order to verify each transaction or block a bank card, bank customer receives TAN code (transaction authentication number), or TAC code (transaction autonomy connection) to the connected phone number. The bank customer receives the TAN and TAC code in around 2 seconds after pressing the button "make a transfer". An innovative verification method named "face ID verification" is possible in online banking App.

Immediate recording of individuals financial activities. One of the valuable functions of online banking is an immediate record of each transfer.

Disadvantages of online banking

Online banking has numerous benefits mentioned above. In spite of them, many disadvantages need to be acknowledged in online banking (Gurau, 2002). Online banking is associated with certain issues for banks as well as for their customers. According to different studies, those disadvantages are as follow: high investment and maintenance cost of technology that enables online banking, the threat of fraud, etc.

High investment cost of technology that enables online banking. Numerous technologies were constructed by specialists in order to design online banking. Some of those technologies are distributed ledger technology, data warehousing, middleware, servers, and other network components (Knorr & Rist 2005 cited at Ayuketang 2018). Beside the acquisition costs, there are installation costs of technologies as well as web and app development (Angelakopolous & Mihiotis, 2011).

Expenses on supporting technologies that enable online banking. In order to support the online banking system. Banks require to develop and maintain numerous banking software and middleware. Also, in the banks works numerous experts in the IT departments in order to support and in case of urgency improve units of the software that enable online banking (Ayuketang, 2018).

The second technology is a data warehouse. The data warehouse records and keeps a vast amount of information, and transactions that are made within the online banking system. Bank spends on electricity high amount of funds for keeping the data warehouse turned on.

Alternative financial services on the market. Currently, numerous technologies have created financial services that are deregulated, for instance, blockchain and cryptocurrencies. These technologies offer investment opportunity as well as saving money services on the digital wallet. The wallet has the same elements as online banking, for instance, an opportunity to make a transaction. Additionally, the blockchain system is not regulated by national banks or other authorities (Smith & Kumar, 2018).

Difficulty in navigating Online Banking Website. Many people find online banking websites difficult to navigate. One of the major disadvantages that discourage the use of online banking is related to the difficulty of the use.

The study investigating online banking adoption in India found that difficulty in navigating the website negatively impacts bank customers attitudes regarding online banking (Sikdar, 2015). Another research found that most of the users who did not adopt online banking claimed that online banking website is confusing. Also, it is not easy to navigate (Mansumittrchai & Chiu, 2012).

Security and Privacy issues. The importance of security and privacy to the acceptance of online banking has been noted in many studies. Most of those researches have concluded that this factor is a significant barrier in online banking adoption (Giordani et al., 2014; Liao et al., 1999; Mansumitchai et al., 2012; and Smith, 2006). In addition, bank customers have a weak understanding of online banking security risks although they are aware of the risks (Sathye, 1999; Hamlet and Strube, 2000; Tan and Teo, 2000; Polatoglu and Ekin, 2001; Black et al., 2002; Giglio, 2002; Howcroft et al., 2002, cited at Pikkarainen et al., 2004).

According to Zaabi, K. et al. 2015 research, few banks have stated the instruction for their customers that prescribe "safe" ways of making financial activities in an online banking account. Bank workers recommend bank customers to read terms and conditions, set a complicated password, and avoid opening an online banking account in a public area. Furthermore, bank customers often rely on the banking system. They believe that banks are concerned about their customers' privacy. On the other hand, bank customers do not have an assurance in the safety system of technologies that enable online banking (Roboff & Charles, 1998, cited at Pikkarainen et al., 2004).

Trust in the Internet. As it was noticed, online banking requires access to the worldwide web. In rural areas, access to the internet might be of poor quality or do not exist. This is the disadvantage can be addressed to the convenience of use (Grabner-Krauter & Breitenecker, 2011).

Trust in the bank. Banks build trustful relationships with customers via a traditional channel. Such an honest relationship influence the attitudes of an individuals toward the bank and online banking services that it provides (Skopanzky et al., 2018).

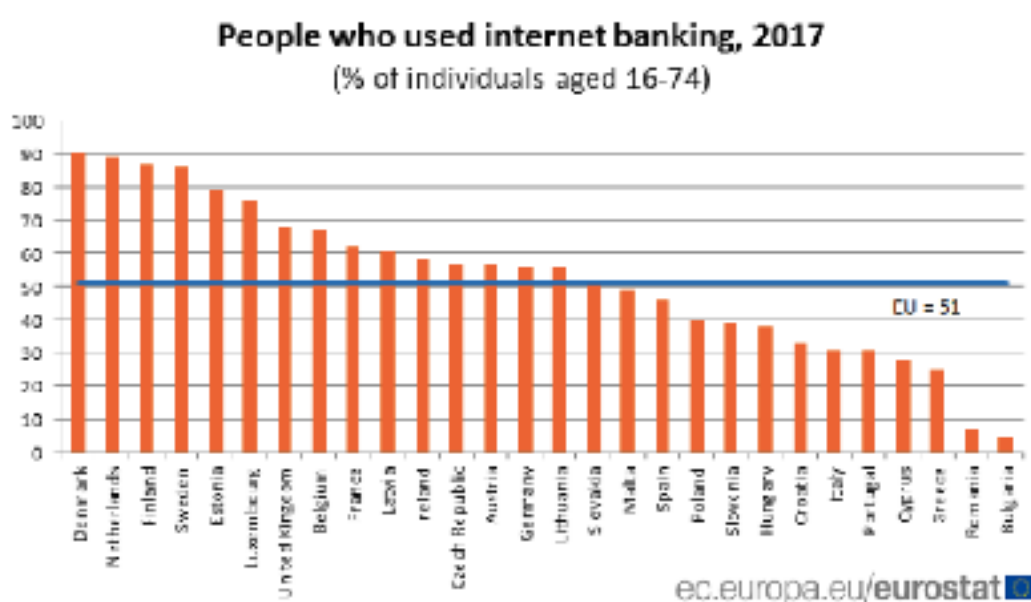
According to Chau (2013), bank consumers' experiences in terms of the use of offline channel produce an impact on their intentions concerning the use of the online channel. In accordance with Yiga et al. (2016) study, trust in the bank itself encourages its customers to continuously use of online banking. In case the customer does not find the bank trustworthy, he or she avoids opening an online banking account. Consequently, there are bank customers who prefer face-to-face contact with bank representative over using the online banking platform.

Desire for personal assistance . Some individuals get used to visit the bank in order to make a transaction. Besides, numerous individuals opened their accounts before the appearance of online banking. Therefore, this group of bank customers used to receive personal treatment from a bank worker (Angelakopolous & Mihiotis, 2011). In this regard, Aldás-Manzano et al. (2009) have stated that the lack of human contact can be a barrier in the use of technology-based services, in this study, it applies to the online banking. Lack of personal communication could be a disadvantage which is not possible to fix, but it negatively influences online banking adoption.

Increased risk profile of banks. According to the European Central Bank, "information technology developments affect the overall risk profile of banks. Specifically, operational risk can increase with technological developments to the level that banks do not upgrade their systems of internal control to cope with a new operational environment ". Legal risk is linked to the uncertainty surrounding the applicable laws and regulations on a number of aspects relating to technology such as the legal status of remote banking or virtual banks, and proof of transactions (Lymberopoulos, et al., 2003).

Online banking in Austria

The following chapter presents the definition of the word "adoption", and the overview of banks operating in Austria. Commonly, in academic literature, "technological adoption describes the process acceptance of the technology" (Bronwyn & Beethika, 2002).



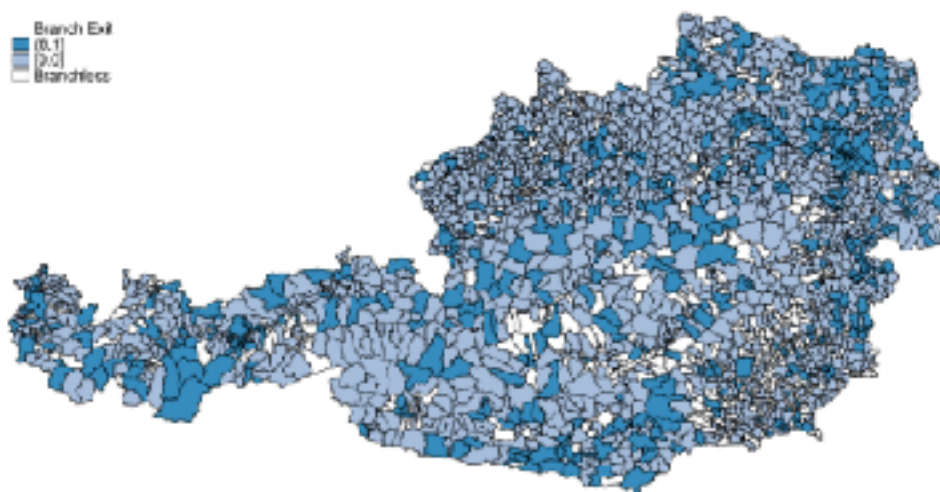
Bar Chart: Online banking adoption in European Union (Eurostat, 2017)

As it was mentioned in the introduction, the level of online banking adoption across European member states vary from 5% to 90%. According to statistics and the table above an average level of online banking adoption in the 2017 year, the European Union is 51 percent.

In Austria, adoption is around 55 percent. However, there are countries with a relatively high rate, for instance, French (63%), United Kingdom (67%), Sweden (85%), and Denmark (90%). There are countries with lower than average adoption level, for instance, Bulgaria, Romania, and Portugal. An interesting fact is that the majority of countries with the adoption level below an average are situated in South Europe.

Banks in Austria

According to the recent study of Austrian retail- banks structure. The country had more operating bank branches than necessary. Recently, the banks were closing some of them. The statistical data claims that almost a thousand bank offices were outsourced between 1999 - 2012 years (Burgstaller, 2017)



Map 1: Bank Branch exit in locations. Source: Burgstaller, 2017

The map above presents the distribution of bank branch exits. The darkest areas on the map show the regions with the highest number of closed offices (Burgstaller, 2017).

Banks in Austria

In the following paragraphs, six major Austrian banks are presented (number of branches, and name of online banking platform). The banks were picked based on the highest number of branches, employees, total assets, and income in the 2016 years (Moody's, 2016). The list consists of Erste Bank, Raiffeisen Bank, UniCredit Bank Austria AG, BAWAG P.S.K., Volksbank Wien AG, and Oberbank.

Erste Group. Erste group also is known as Erste Bank Group was founded in 1819 year. It operates in Austria from a headquarter in Vienna. Since 1997 Erste Group was expanding in Eastern Europe. Erste Bank has entered in Hungarian, Czech Republic, Romanian, German, Polish, and Slovakian markets (Moody's, 2016).

According to the factsheet 2019, the bank serves 16.5 million customers. In the bank works more than 47 thousand people. As in 2018, Erste Group declared around 700 million Euro in net profit and more than 240 billion Euro in total assets, and approximately 16 million euros in deposits. Erste Group offers services online on Gregore platform.

RZB Group. Raiffeisen Bank Group refers to a group of cooperative banks that was set up in 1927. It is by far the largest group of banks in Austria with the biggest market share and a complex structure.

Raiffeisen Zentralbank Osterreich is a parent company of Raiffeisen Bank International. The headquarter of Raiffeisen Bank International is located in Austria, Vienna. The primary focus of the headquarter is to manage a banking network in Central and Eastern Europe, particularly, in Switzerland, Luxembourg, Bulgaria, the Czech Republic, Romania, Russia, Serbia, and Albania (Moody's, 2016).

According to the annual report (2018), RZB has 1,2 billion in consolidated profit/loss, and 140 billion euros in assets. In the previous year, Raiffeisen Bank works around 47 thousand employees that serve 16.1 million customers (Annual Report RZB, 2018). The bank offers services online on Mein ELBA platform.

UniCredit Bank Austria AG. Bank Austria happens to be one of the first banks serving the Austrian population. It started operation in the middle of the 19th century in Vienna. In the 2005 year, UniCredit Bank, established in Italy, has acquired 96.36% of Bank Austria, and the bank has changed on the name UniCredit Bank Austria AG.

UniCredit Bank Austria AG have made merger and acquisition deals with local banks in Bulgaria, the Czech Republic, Russian Federation, and Turkey.

According to Bank Austria's annual report, in 2018 bank have stated 22 billion euro in assets, almost 2 billion euro in net profit, and around 55 million euro in deposits from the bank customers. Also, in Bank Austria works approximately 5 thousand people, and provide multiple services to corporate and private custom-

ers. (UniCredit Bank Austria AG annual report, 2018). The bank offers financial services online with the name 'Internet banking & BusinessNet.'

BAWAG P.S.K. BAWAG P.S.K. BAWAG P.S.K was set in 1922. Nowadays, it operates in Austria with the main office in Vienna. Currently, it has a subsidiary 'easy bank' mentioned above. In accordance with the annual report (2018), BAWAG.P.S.K claims total assets in value of around 45 billion euro and approximately 1 billion euro in profit. In the bank works around 3 thousand bank employees. (BAWAG P.S.K annual report, 2018). The online banking platform is BAWAG P.S.K. secure banking.

Volksbank Wien AG. Volksbank Wien was found in 1850. In Germany operates the bank with the similar under the brand "Volksbank," but it has a different structure, other shareholders, and management.

In the Volksbank Wien AG currently works around 4,300 people. In the annual report 2018, Volksbank Wien AG declared a total income of EUR 124.7 million and reported EUR 11.5 billion in total assets. In 2018 the deposits from the bank customers were equal to 21 million euro in total (Volksbank Wien AG annual report, 2018). Also, the bank offers online banking services to the customer on eBanking Volksbank Wien platform.

OberBank AG. OberBank was established in 1869 year, This is the only bank with the headquarter in Linz. Nowadays, Oberbank operates in Germany, the Czech Republic, Slovakia, and Hungary. In the bank works around 2 thousand employees and has 161 branches. In the annual report 2018, the bank reported a

total income of 345 million euro and around 2.25 million euro in profit after tax. (OberBank AG annual report, 2018). OberBank has online banking platform 'Oberbank Kundenportal'.

Bank	Online banking website	Services offered
Erste Bank Group	https://www.sparkasse.at/erstebank-en/private-clients	Checking account balances, checking information about transactions, executing fund transfers/transactions using TAN verification, face ID verification, checking credit and debit card information, checking the balance on the deposit account, account maintenance and administration, Pin alteration, card control, investment account control.
RZB Bank	https://www.raiffeisen.at/de/online-banking/mein-elba.html	Checking account balances, checking information about transactions, executing fund transfers/transactions using TAN verification, face ID verification, checking credit and debit card information, checking the balance on the deposit account, account maintenance and administration, Pin alteration, card control, investment account control.
UniCredit Bank Austria AG	https://www.bankaustria.at/	Checking account balances, checking information about transactions, executing fund transfers/transactions using TAN verification, checking credit and debit card information, checking the balance on the deposit account, account maintenance and administration, Pin alteration, card control, investment account control
BAWAG P.S.K.	https://www.bawagpsk.com/BAWAGPSK/PK	Checking account balances, checking information about transactions, executing fund transfers/transactions using TAN verification, checking credit and debit card information, checking the balance on the deposit account, account maintenance and administration, Pin alteration, card control
Volksbank Wien	https://www.volksbankwien.at/	Checking account balances, checking information about transactions, executing fund transfers/transactions using TAN verification, checking credit and debit card information, checking the balance on the deposit account, account maintenance and administration, Pin alteration, card control

Bank	Online banking website	Services offered
OberBank AG	https://www.oberbank.at/	Checking account balances, checking information about transactions, executing fund transfers/transactions using TAN verification, checking credit and debit card information, checking the balance on the deposit account, account maintenance and administration, Pin alteration, card control, investment account control

Table 1: Online Banking Services in Austria

Theoretical frameworks

Nowadays, there are numerous models available for explaining the adoption of unfamiliar technology by individuals. This section describes theories and models developed by academics, that help to explain individuals behavior and technology adoption in society. Those models and theories are the theory of reasoned action (Ajzen & Fishbein, 1991), a technology acceptance model (Davis, 1989), and innovation diffusion model (Rogers, 1982).

Theory of Reasoned Action

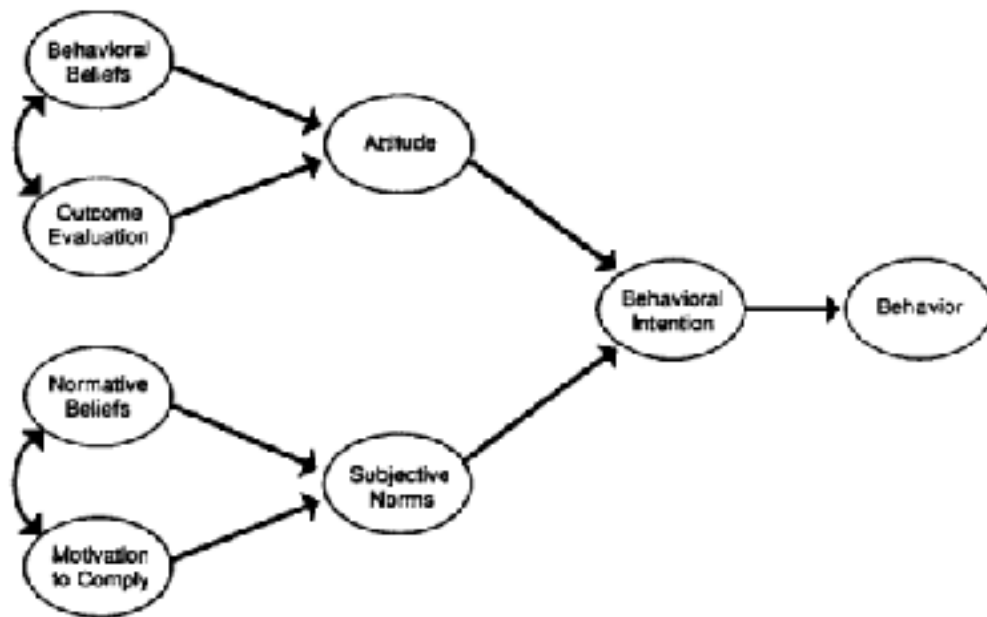
According to the theory of reasoned action introduced by Ajzen Iceka and Fishbein Martina in 1975, people think rationally. Therefore, their actions are guided by rational thinking. Generally, psychological studies widely employ this theory in order to explain an individual's behavior (Trafimov, 2009).

The theory is structured from the following components: personal attitude or attitudes, and normative factors (Ajzen & Fishbein, 1991 cited at Vallerand et al., 1992).

According to Belleau et al. (2007), a person evaluates external information. After the assessment process, the individual creates a personal conclusion regarding external information. Those conclusions influence behavioral intentions (bi) of person. Meanwhile, according to the theory of reasoned action, the normative beliefs of an individual shapes his or her subjective norms and consequently influence behavioral intentions. Also, an individual has actual motives to comply with the generally accepted standards of a society. These motives create subjective rules regarding the behavior and potentially shape the behavioral intention (bi) of an individual.

Following the theory of reasoned action, behavioral intentions (bi) adequately explain the actual behavior or actions that a person decides to take. Numerous studies conducted by Trafimove (2009) in describing social psychology have implied the theory of reasoned actions to describe the particular behavior of individuals. The finding of studies mentioned has affirmed the validity of the model (Vallerand et al., 1992).

However, the theory of reasoned action was mainly applied in a psychology study. Secondly, this theory was developed more than thirty years ago and have been modified. Therefore, the suitability of this model in study related the technology adoption could be criticized.



Theory of reasoned action. Source: (Vallerand et al., 1992)

Technology Acceptance Model (TAM)

Nowadays, technological innovations found their application in multiple industries. It creates a need to investigating an adoption process of new technology by an individual or a society, as well as by a particular organization, or by the industry itself. Numerous frameworks, models, and theories suggest variables and factors that predict the acceptance of IT from customer perspectives (Chong et al., 2010).

Davis Freud introduced a technology acceptance model in 1989. Nowadays, it is a commonly used theory in researches that attempt to investigate the technology adoption among individuals (Gefen & Straub, 2000; Al-Gahtani, 2001; cited at Pikkarainen et al., 2004).

Technology Acceptance Model (TAM) is based on the theory of reasoned action (TRA) (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980), which is concerned with the determinants of intended behaviors (Ajzen and Fishbein, 1980, cited at Ajzen and Fishbein, 1991).

The model suggests two crucial factors that influence an individual's decision to use or do not use a particular technology (Davis et al., 1989). The first factor is perceived usefulness (PU); the second one is perceived ease of use (PEOU). These two perceptions regarding new technology are the main influencers of an individual's behaviour intention to start using or avoid using the latest technology (Safeena et al., 2013).

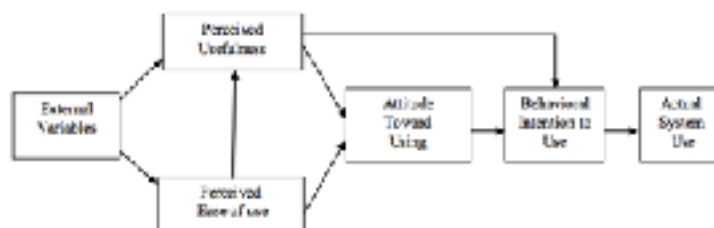
Perceived usefulness (PU). In case a person sees benefits in utilizing a particular technology, he or she will use it (Davis, 1989). There are obvious benefits that online banking offers to consumers. Those are listed in the above section of this study.

The word "usefulness" means making full use of something. In according to Eriksson and Nilsson (2007) research that explains determinants of continuous use of online banking has found a perception of usefulness strongly correlates with continuous use and adoption.

Perceived ease of use (PEOU). Technology acceptance model states that ease of using technology is the second-factor determining successful adoption. Davis Fred has defined perceived ease of use as: " the extent to which an individual perceives that using a system or a technology is easy for him or her" (Davis, 1989). In case a system delivers advantages to society, but it is not easy to use. Hence, a person may refuse using technology.

Recent researches were investigating online banking. According to the Díaz & Jimenez (2019) study, women tend to adopt quickly numerous informational technologies, as well as online banking and for women, ease of use factor is substantial. In accordance with Erikson et al. (2005) research findings that describe factors influencing online banking adoption in Estonia, that ease of use factor has an impact on the acceptance of online banking by an individual. Other studies regarding IT development and their implementation have proved the importance of ease of use factor in adoption or implementation of the innovation (Gangwar et al., 2013, and Wang et al., 2003).

Technology acceptance model, as well as the theory of reasoned actions, tackle human behavior. Both models provide variables that facilitate to explain attitudes toward behavior that transforms into behavioral intentions of the individual. Nevertheless, they possess a substantial distinction. Technology acceptance model focuses on the characteristic of the system, particularly, advantages that it delivers to a person. In case an individual recognizes advantages of the system it leads to the positive attitudes and further adoption of the technology. While, the theory of reasoned action incorporates several variables, for instance, normative beliefs affected by social norms, evaluations of the information regarding the technology, etc (Pikkarainen et al., 2004).



Technology Acceptance Source: Davis, & Warshaw (1989)

Innovation Diffusion Theory (IDT)

The model persists that the probability of the innovation to prosper depends on five factors: relative advantage, compatibility, complexity in use, trialability, and observability of the technology.

Relative advantage has a connection with economic conditions at the market that consequently affect the rate of adoption. Compatibility factor suggests comparing a new product that will serve the needs of the person with the previous product that used to serve the same needs. Complexity is "the degree to which an innovation is ease to understand and use". This factor equalizes ease of use variable from TAM. Trialability of technology relates to the variety of services and features it offers to an individual. The factor is similar to the perceived usefulness one. Observability is conclusion regarding the adoption process of technology into society (Rogers, 1982).

An author of the model is Everett M. Rogers. The theory introduces the importance of communicating the new system to many individuals.

Also, it states that the length of time is necessary for technology to be widely adopted in society. Additionally, the theory points out the value in the adoption process of the "change agents". Technically, an agent is a person that communicates a feature of innovation to people at the early adoption stage influence attitudes of people regarding the innovation system (Roger, 1982).

According to Rogers (1982) the spreading process of an innovation technology composes of four basic stages: knowledge about the technology, persuasion process, decision, and confirmation.

The knowledge about the technology is shaped by two types of variables: receivable variables (personality characteristics & perceived need for the innovation), and social system variables (social system norms, tolerance of diversity, communication integrity, etc). The persuasion process depends on the characteristics of the innovation. Decision toward adoption or rejection mainly depends on the persuasion process.

In case of rejection, the individual may change the decision and later adopt the innovation. The confirmation stage comprises of improvement of the system and continued use.

When it comes to the online banking, there are numerous studies of Agarwal and Prasad, 1998; Kolodinsky et al., 2004; Zolait and Ainin, 2008; Phunangthong and Malisuwan, 2008 that have employed diffusion model and found that complexity and relative advantage features of the innovation are important in influence of online banking.

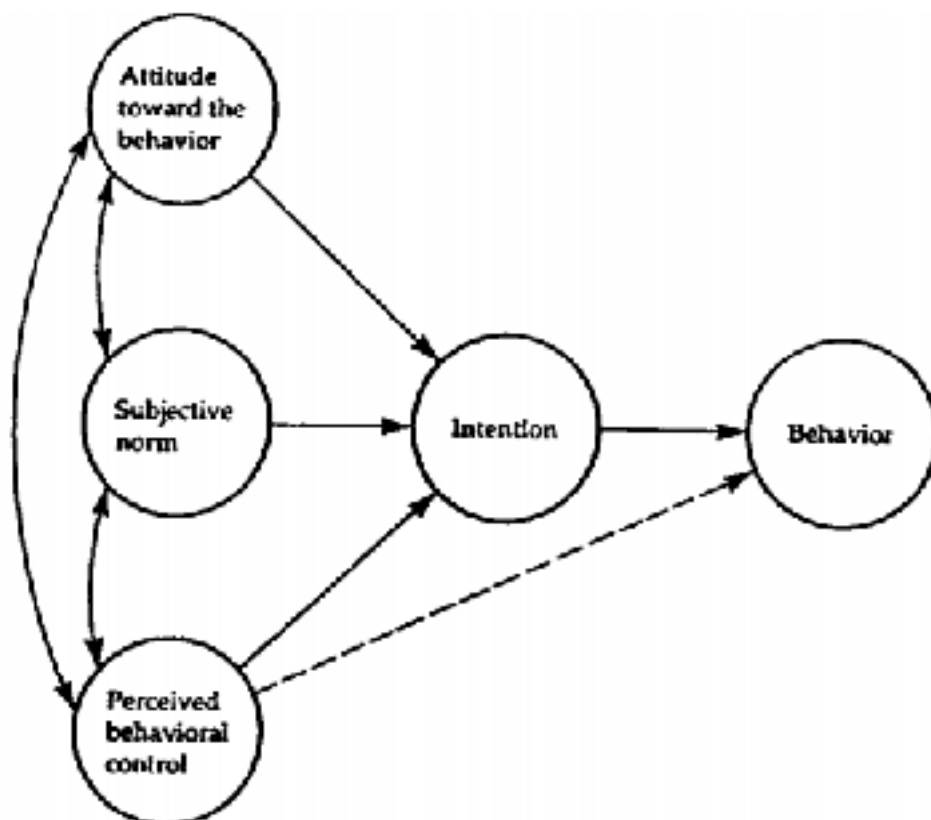
Another study of a meta-analysis of 75 diffusion articles combined by Tornatzky and Klein (1982), also found that only relevant advantage which could be replaced with perceived usefulness (PU), and complexity of website that could be substituted with perceived ease of use are consistently related to online banking adoption. For this reason, only perceived ease of use and usefulness factors will be tested in this study (Giovanis et al., 2012).

Theory of Planned Behaviour

This theory consists of the same components as the theory of reasoned actions: attitudes toward the behavior and subjective norms. However, it includes an extra component "perceived behavioral control" (Taylor & Todd cited at Teo & Tan, 2000).

Generally, it aims to improve the predictive power of the theory of reasoned actions. Perceived behavioral control suggests that using of the new technology is conscious behavior of an individual that he or she controls (Ajzen & Fishbein, 1980; Davis, 1989 cited at Pikkarainen et al., 2004).

Control element could be associated with inner-thinking of an individual, and his or her understanding of the exploitation process of the system. At the same time, control of the outside conditions is important as well (Ajzen et al., 1991 cited at Liao et al., 2007). In the case with online banking, availability of the internet or a understanding the process of performing a transaction in online banking are referred to "perceived behavioural control".



Theory of Planned Behavior. Source: Ajzen et al., 1991

Comparison of Selected Models

An aim of this study is to figure out the motives of banks' customers toward using online banking. Therefore, the above section presents in details multiple theories that explain behaviors of individual and may predict technology spreading in the society. Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), and Diffusion of Innovation (IDT) are commonly used in studying technology adoption.

According to recent studies that investigated online banking adoption in the United States by Kolodinsky et al. (2003), in Finland by Pikkarainen et al. (2004), in France by Gallie et al. (2010), in Poland by Polasik & Wishnevski (2008), researchers used the Technology Acceptance Model as a base for forming the hypothesis.

Karjaluoto et al. (2002) studied the attitude formation process toward online banking. He based the study on the technology acceptance model. The study was funded by Nordea Bank and the respondents of the study were customers of Nordea Bank. The study showed that ease of use influences the attitudes toward online banking and its actual adoption.

The empirical study of online banking adoption in Finland was based on the Technology Acceptance Model (TAM). Enjoyment of using the website as well as security of the web were supplemental variables of the study. The research presented an analysis of around 250 questionnaires of bank customers and residents of Finland (Pikkarainen et al. 2004).

The analysis of questionnaires pointed out that usefulness and proper explanation regarding the exploitation of online banking are main factors that have a positive influence on the acceptance process. Meanwhile, perceived ease of use was not indicated as a significant influencer on the process (Pikkarainen et al., 2004).

One of the recent studies of online banking adoption in Lithuania used the technology acceptance model and filled in the research with perceived risk, web design, customer satisfaction with e-banking services. Empirical results of the research revealed that online banking adopters perceived the system uses as well as ease of use. The third factor that concerned study participants was the perceived risk of fraud associated with online banking usage (Gaile - Sarkane et al. 2017).

According to the study aimed to test the application of the technology acceptance model in the banking environment in Quebec (a province in Canada). The study incorporated 'attitude towards the use of the Internet for banking operations' variable. An empirical analysis of 225 questionnaires was analyzed. A conclusion of the study was that participants perceived online banking ease to use and useful system (Mangin et al., 2011).

In developing countries, the digitalization of the services could have different distribution process, for instance, accessibility of the internet might be limited. Such a situation with the internet may influence online banking adoption.

Nevertheless, in numerous developing countries, banks offer financial services to local communities. Thus, numerous researches have investigated factors that affect online banking adoption in Thailand by Intana, M. et al. (2013), by Poon, W-C. (2008) in Malaysia, UAE by Mansumittrchai, S., & Chiu, C. (2012), etc.

These researchers have incorporated internet accessibility, political and economic environment, gender factor, and education factors into the study.

Thus, among all models described above for this study is selected Technology Acceptance Model. This theory has strong connection with the research question. Additionally, it is the most frequently used model for studying numerous technologies as well as online banking in different regions.

In addition, the Theory of Reasoned Action was developed a long time ago and was modified by Davis Freud into the Technology Acceptance Model. In regards to IDT, it was employed in a couple of researches but, by far it is not the most commonly used model for studying adoption of, particularly, online banking.

Article	Author	Factors	Model
Consumer acceptance of online banking: an extension of technology acceptance model	Pikkarainen et al. (2004)	Perceived usefulness, Perceived ease of use, Perceived threat privacy, preference for personal conacts.	Technology Acceptance Model
Factors affecting the adoption of online banking in Poland	Tomasz Stanisław Szopiński (2016)	Perceived usefulness, Perceived ease of use, Convenience trust, Sense of safety, Sense of privacy, Preference for personal contact, Access to infrastructure	Technology Acceptance Model

Article	Author	Factors	Model
Factor affecting the adoption of internet banking in Greece	Prodromos, D., Kamperidou, S., Sofia, E. (2014)	Perceived ease of use, Familiarity/ friendliness, accessibility, time saving / convenience, awareness of advantages, trust, perceived security and perceived privacy	Technology Acceptance Model
Factors influencing online banking adoption: Evidence from the Austrian market	Grabner-Krauter, S., & Breitenecker, R. (2011)	Self-efficacy, Bank trust and internet trust, Relative advantages, Complexity, Perceived risk of online banking, perceived usefulness and ease of use, preference of personal contact	Technology Acceptance Model & Diffusion of Innovation
Combination of TAM and TPB in Internet Banking Adoption	Safeena et al. (2013)	Perceived Usefulness, Ease of use, behavioural control, subjective norms	Technology Acceptance Model & Theory of Planned Behaviour
Customer acceptance of internet banking in Estonia	Eriksson et al. (2005)	Trust, Perceived Usefulness, Ease of use, usage	Technology Acceptance Model
Educational level and Internet banking	Díaz & Jimenez (2019)	Perceived Usefulness, Ease of use, banks customers gender, income, and education, preference for personal contact	Technology Acceptance Model
Online banking adoption: an empirical analysis	Alain Yee-Long et al. (2010)	Perceived Usefulness, Ease of use, government support, trust	Technology Acceptance Model
Management innovation and cultural adaptivity in international online banking	Singer, D., Avery, A., and Baradwaj, B (2008)	Perceived Usefulness, Ease of use, web usability, gender factor, environmental factors.	Technology Acceptance Model

Table 2: Studies based on Technology Acceptance Model

Frequently cited factors

In accordance with listed studies technology acceptance model provides a reasonable fundament. However, it does not describes various aspects of specific technology adoption. Therefore, different studies on online banking adoption have incorporated additional variables in order to improve the predictive power and relevance of the study.

In this research are added to the received usefulness and ease of use: web usability, privacy and security issues, trust in the bank, and preference for personal contact over-utilizing services online.

These factors were found in similar studies that were investigating online banking adoption. Also, empirical findings claimed that those factors had a significant impact on an individual's intention and further adoption of online banking. The following table lists those factors.

Factors	Frequency	Example of research with the correspondent factor
<i>Perceived ease of use</i>	7	T. Pikkarainen, & S. Pahnla. <i>Consumer Accetance of Online Banking: An Extension of the Technology Acceptance Model</i>
<i>Perceived usefulness</i>	7	Giovanis, A., Polychronopoulos, G., & Binioris, S. (2012). <i>An extension of TAM model with IDT and security/privacy risk in the adoption of internet banking services in Greece.</i>
<i>Web usability</i>	3	Sikdar, P., Kumar, A., & Makkad, M. (2015): <i>Online banking adoption.</i>
<i>Privacy and security</i>	6	ntana, M., Chansa-ngavej, C., & Changchit, C. (2013). <i>Factors encouraging the internet banking adoption in Thailand.</i>
<i>Trust</i>	6	Montazemi, A. R., & Qahri-Saremi, H. <i>Factors affecting adoption of online banking. A meta-analytic structural equation modeling study</i>
<i>Preference for personal contact</i>	4	Szopiński, T.: <i>Factors affecting the adoption of online banking in Poland</i>

Table 3: Most frequently cited Factors

Based on these factors are developed hypotheses introduced in the following literature.

Perceived usefulness

This factor refers to an individual's recognition of the advantages that he or she gains from online banking. Those advantages are time efficiency, service quality, quick information access to the bank account, etc.

By far, the majority of researches regarding online-banking acceptance have incorporated a perceived usefulness variable. The findings of the studies have emphasized positive relationships between usefulness factor and online banking acceptance. Hence, the following hypothesis is suggested:

H1: Perceived usefulness has a positive effect on consumer adoption of online banking

Perceived ease of use

In the fast world, perceived ease of use has played a positive role in the acceptance of the different system, for example, wireless devices by Chang et al., 2017, cloud computing by Gangwar et al., 2013, e-government adoption in Abu Dhabi by Dahi and Ezziane, 2015. In the context of e-banking, perceived ease of use was positively influencing adoption process.

Nevertheless, there are few studies that discovered that this factor has played an insignificant role in online banking acceptance. In accordance with Pikkarainen et al., (2004) research of online banking adoption that perceived ease of use is not a predictor of online banking adoption in Finland. Another study of Vankatesh (2000) stated that 'perceived ease of use become more significant as the length of use increase'.

It is fair to write that different researches show various results regarding the influence of perceived ease of use. This study will include the variable and following hypothesizes is shaped:

H2: Perceived ease of use positively impacts on online banking adoption

Web usability

No physical interaction with the human is the issue that associates with technological development. Online shopping and online banking provide services to millions of people on a daily bases. Those, the web site plays a role in their service provision.

According to Szopinski et al (2016), the adoption of online banking is based on the characteristics of the website usability. The concept of web site usability considers the following factors: the ease of understanding the structure of a system, and its functions; the perceived comfort of site navigation in terms of time required; and the ability of the users to control what they are doing at any given moment (Casalo et.al., 2007). Numerous researches have found that ease in navigating the web site constitutes a key determinant of online banking adoption by customers (Gupta and Kamilla 2014; Chau and Lai, 2003 cited in Sikdar et al. 2015). Thus, the following hypothesis is developed:

H3: Ease in navigating the online banking website positively influence its adoption

Privacy and security

In general, privacy refers to the protection of personal information (Casalo et al 2007). The growing capacity of new technology for information processing, plus its complexity have made privacy an important issue.

This fact that increasing consumer distrust as to how personal data is being gathered and processed in online transactions, as a consequence, it is becoming an important factor which influences the adoption of online banking (Casalo et al., 2007). Other studies have identified the security and privacy risk factor. It creates a significant barrier in regard to online banking adoption by individuals (Sathye, 1999, Polasik et al., 2009, Dixit, 2010 cited at Pikkaranien et al., 2004).

The study of e-banking acceptance in Malaysia concluded that individuals are afraid of potential online banking account fraud and money loss (Poon, 2008). Additionally, a bank customer may do actions against his or her bank account security, for instance, use online banking in public places, or keep the log-in password in the phone notes, simply transfer money to a wrong bank account, etc.

All listed mistakes are made by the bank customers, and not because of poor online banking protection system. The apprehension of the security and privacy threat is high (Intana et al., 2013). Thereby the following hypothesis is proposed:

H4: Higher perceived security and privacy risks have a negative effect on consumer acceptance of online banking

Trust in Banks

Generally, trust can be associated with different people, objects, and relationships, etc. Indeed, the conceptualization of trust has a huge variety. In the corporate world, this term usually associates with a brand of an organization, political leader, public institutions, and technologies. In regards to financial services, this factor is highly important in building long term relationships (Mansour, 2016).

Banks commit to develop high - quality relationships with their current customers (Gaile-Sarkane et al., 2017). Commonly, banks build trust through brand presence and transparency. Banks post annual reports and other informative articles on the website or send private emails. According to the Sathye et al . (1999) cited at Chong (2010), in case bank customers do not trust in the bank or banking system in the country itself. People will avoid making transaction in online banking.

Numerous studies have found that trust in a bank that the user gains in "the course of using bank services via the traditional channel" is one of the factors determining the commitment to the use of online banking as well (Flavián, Guinaliu, & Torres, 2006; Lee, Tsai, & Lanting, 2011; Montazemi & Qahri-Saremi, 2015; Yap, Wong, Loh, & Bak, 2010, cited in Szopiński, 2016).

In this study, the term 'trust in the bank' relates to the relationships that banks have been communicating their activities and the brand presence on the market. Therefore, the following hypothesis is developed:

H5: Trust in the bank is positively related to online banking adoption

Preference for personal contact

As it was noticed, that banking services in digital space are associated with the risks. This is the reason that explains the behavior of people who visit the bank and make all transactions online. In addition, established banks have a group of loyal customers. Bank workers may organize a separate meeting with the loyal customers, offer new services, investment programs and develop trustworthy relationships. Thus, the one factor that will be tested in this study is " desire for personal contact".

The empirical study of online banking adoption in Greece by Angelakopoulous et al., (2011) has found that numerous bank customers visit a bank branch because they are used to have personal treatment contact with a bank officer. Therefore, "preference for personal contact" is one of the factors that has described a relatively low adoption rate of 20%. Few studies regarding system adoption have tested this factor. Nevertheless, elder individuals may prefer for personal treatment while making a transaction because of numerous reason. Thus, the following hypothesis is developed:

H6: A preference for personal treatment decreases the adopt online banking

In this regards, this is a summary of six common factors: perceived usefulness, perceived ease of use extracted from Technology Acceptance model, web usability, privacy threat, trust in banks, service quality, and preference for personal contact that are tested in the study.

Methodology

The following chapter describes the methodology utilized in this study. As it was mentioned, the purpose of the research is to identify and analyze the most important factors that can influence the adoption of online banking by Austrian customers.

In the scope of the given time constraint, the variables listed above are studied through the aid of a survey. The second part of this study will be interviews with the bank customers. They were conducted to understand deeper customer opinions regarding online banking.

Selection of the method

Generally, quantitative, qualitative, and mixed methods are common research structures that enable studying a phenomenon. The quantitative method deals with quantifying and analysis variables in order to get results. It involves the utilization and analysis of numerical data using specific statistical techniques to answer questions like who, when, how, etc (Apuke, 2017).

Based on this definition of Aliaga & Gunderson (2002) cited at Apuke (2017), quantitative research methods seeks to explain an issue or phenomenon through gathering data in numerical form and analyzing with the aid of statistical tools. Also, the aim of quantitative research is to accept or reject a prior - set hypothesis (Creswell, 2014).

In quantitative research, commonly used instruments are observations and survey.

Observation is used in the social sciences as a method for collecting data about people, processes, and cultures while observing their behaviors and recording it (Kawulich, 2012).

Meanwhile, the survey is frequently used quantitative research technique by academics (Check et al., 2012). This instrument collects information from individuals (the sample). It has numerous advantages, for example, time efficiency, the ability to reach many individuals through multiple channels, etc. One of the apparent disadvantages is manipulation of the independent variables, or simply not honest answers, lack of the environment control in which a participant fills in the questionnaire.

The qualitative research method takes the snapshot of the purposive sampling perceptions of a different event in a natural setting and analyzes it. In the qualitative, measurement tools are history or life stories, discussion groups, in-depth interviews, case study, and focus group (Trigueros et al., 2017).

An interview is commonly used by researchers as a primary data collection tool in the qualitative study. They are used for gathering information about participants' experiences, views, and beliefs concerning specific research phenomenon (Frances et al., 2009). The advantages of the method are collecting detailed information. The main disadvantage of a qualitative research is that primary data gathered and filtered by an interviewer.

In addition, an interviewer may ask multiple leading questions. Those questions may produce invalid primarily data, that is further analyzed and produce an outcome.

Mixed method

The mixed-method is a study design that integrates both qualitative and quantitative types of researches in one. In other words, a researcher may use both quantitative and qualitative measurement tools to acquire necessary information.

According to Wisdom & Creswell (2013), this particular method obtains statistical significance. The major advantage of it is the provision of all research instruments to the individual who conducts the study. The aim of this study to answer the research question stated above. Therefore, mixed-method is the most efficient method for deeply studying the object matter.

The research is structured as follow. The first part is quantitative research. The primary data is planned to be collected via in-person distribution of questionnaire among fellows, students, and co-workers.

Also, it will be distributed at the events organized by and expect community "Internations" as well as "meet up" communities. It will allow the researcher to reach as many individuals with different consumption characteristics.

In the survey, the questions have scale assessment from agree to disagree (Strongly Disagree (1) / Disagree (2) / Neutral (3) / Agree (4) / Strongly Agree (5)/ I do not know (6)) regarding the common factors which may influence online banking adoption. Also, it includes "I do not know option".

Questionnaire structure

Part 1:Query 1 to 5	General information of the respondent
Part 2: Question 1 to 6	Questions that test perceived usefulness and ease of use (H1 & H2)
Part 2: Question 7 & 8	Questions regarding web design of online banking (H3)
Part 2: Question 9 to 12	Questions concerning Security and Privacy (H4)
Part 2: Question 13 & 14	Questions related trust in bank (H5)
Part 2: Question 15 & 19	Questions regarding preference for personal contact (H6)

Table 4: Hypothesis

The second part of the research will be interviews with numerous bank customers. It will allow the interviewer to ask questions regarding 6 factors (perceived ease of use, usefulness, web design, privacy, security and preference for the personal contact). Also, the interview may share the experience of using online banking or tell unique stories from what happened to him or her while utilizing online banking. Also, the qualitative part will notice other factors which influence the determination toward online banking.

The conclusion part will present the combined outcome of both methods. Thus, the mixed method was chosen for answering the research question of the study.

Sampling Procedure

Every researcher seeks to reach as many individuals as possible, in order to have the population-representative sample. The key question is: How many individuals should fulfill the questionnaire in order to collect adequate data and produce valid conclusion ?

In case the research aims to get information about the population (a large group of individuals), technically, it is impossible to ask all of them to fill in a questionnaire. Thus, researches ask to participate in the survey some of the population's representatives (Walliman, 2011). Therefore, the study seeks to collect as many questionnaires as possible, but around 100 respondents are enough for this study.

According to the Walliman (2011), sampling is "the process of selecting just a small group of cases from out a population." Mainly due to time constraints, an opportunity sampling technique is chosen. The opportunity sample is obtained by asking members of the population of interest if they would take part in the research. It allows reaching as many individuals as possible. The common issue associated with the opportunity sampling is admitting questionnaires from individuals who are not targeted population (McLeod, S.A.2014). In order to avoid this problem, the questionnaires have been distributed in Austria. Secondly, it asks a participant to specify the city of residence.

Data analysis

The first part of the questionnaire gathers personal information: gender, age, settlement (city or countryside), and name of the bank which services and individual's account.

In the second part of the survey an individual answer questions regarding the online banking account that he is primarily using. After collecting all fulfilled questionnaires, the snapshot of aggregated answers is presented and compared with analysis of other studies regarding online banking. Based on the data collected from the surveys, it is expected to conclude which factors influence online banking adoption.

In the final part of the study is the analysis of the qualitative research. It gives more detailed information about online banking and allows drawing a bigger picture. Also, interviews with the non adopters of the system will be presented. The purpose of a qualitative study is to identify and analyze the most important factors that can influence the adoption of online banking by taking into account the customer point of view which will be earned during the interview.

Limitations

There are several factors which can be considered as limitations of this research. Since the study is aiming to find valid factors that influence online banking in Austria, the study requires numerous factors, which have been tested in similar studies. Other researchers have incorporated numerous variables, for instance, accessibility of the internet, trust into government, content, speed of transaction, etc. Thus, a separate research study needs to be conducted for analyzing other factors. A first limitation is a limited number of factors (six).

The second fair limitation is the diminished sample size. In order to investigate factors which impacts the adoption of online banking in Austria, the subject of the study should be the Austrian population. In order to represent population parameters, the random sampling with around 400 participants would be more relevant, because it may provide greater precision. However, realistically it is hard to obtain 400 participants. Thus the number of participants will be reduced. Additionally, reaching around 400 individuals who are a relatively reliable sample of the target population would be expensive.

Limitation of the qualitative part. No real possibility to organize a meaningful interview with a person that understands from the working experience financial market in Austria and integration of online banking in it. Thus, the study focused purely on a bank customer and organize interviews with adopter as well as non-adopter of the system.

In addition, one of the common limitations of qualitative research is depicting the relationships between the cause and effect (Barbour 2000). This study aims to find 'What do causes using acceptance or rejection of utilizing online banking?'

Results

The following paragraph is separated on three part. In the first presents analysis of quantitative part of the research. It presents basic demographical characteristics of the study participants. Also, it depicts a frequency of using an online banking. The final part of empirical analysis reveals the factors that influence online banking adoption in Austria. The summary of qualitative part is depicted in the second part of the results section. The third part discusses and compares findings from quantitative research and qualitative research.

Quantitative Research Results

The dataset used for the quantitative analysis was collected from 01.03.2019 to 25.06.2019. In total 93 individuals who reside in Austria participated in the survey and 93 of the responses were included in the actual research. The questionnaire was printed and distributed in person at multiple networking. Also, questionnaires were sent in electronic format via social media platforms.

Gender distribution. In the survey have participated, 40 men and 53 females. It is not a perfect proportion. Despite in case, it is compared with the gender distribution of the Austrian total population, the statistical data in 2018 claims that 48,8% of the total population is male, accordingly 51,2% are female.

	Male	Female
Number of participants	40	53
Percentage of participants	43	57

Table5 : Gender Distribution

Age group. In this study have participated 32 (34,4%) individuals within age 18-24 age group; 50 (53,76%) of participants are from 25 to 34 years old women and man; 9 (9,7%) questionnaires have been fulfilled by individuals in 35-44 age group; only two participants (2,15%) happen to be elder people in age from 45 to 54. Hence, the average age of the respondent is between 25 to 34 years. It is clear that most of them participated in this study are young individuals.

	18 - 24	25 - 34	35 - 44	45 - 54
Number of participants	32	50	9	2
Percentage of participants	34,4	53,76	9	2,15

Table 6:Age distribution

Adopters vs. Non-adopters. Among all respondents were 90 adopters and 3 were non-adopter. In the quantitative part of the study are analyses questionnaires of the adopter. Firstly, it will depict the opinion of online banking only of individuals who have used it, because non-adopters might fairly express their opinion regarding particular factors, for instance, "ease of use" one.

	Adopters	Not adopters
Number of participants	90	3
Percentage of participants	96,78	3,22

Table 7: Adopters/Non-adopters

Frequency of Using Online Banking. Out of 90 respondents, there are 17 (18,89%) respondents use the online banking once a week, 42 (46,67%) respondents use from two to five times per week. Meanwhile, 23 (25,5%) respondents utilize once a day services that offer online banking. Only 8 (8,94%) respondent uses online banking once in two weeks.

	Once a day	2-5 times a week	Once a week	Once in two weeks
Number of participants	23	42	17	8
Percentage of participants	18,89	46,67	25,5	8,94

Table 8: Periods of Using Online banking

Which bank serves its online banking. The questionnaire was designed for bank customers that have their accounts in Austrian banks. Among 90 respondents 48 individuals happen to use Erste Bank online banking platform, named George, 34 respondents use ELBA online banking platform from Raiffeisen Bank. Meanwhile, 7 respondents are customers of Bank Austria and only one individual is using Volksbank's services.

	ELBA (Raiffeisen Bank)	George (Erste Bank)	E-Banking (Bank Austria)	E-Banking (Volksbank)
Number of participants	34	48	7	1
Percentage of participants	36,55	51,6	7,5	1,075

Table 9: Banks that serve participants of the study

Analysis

The first questions in the questionnaire were regarding perceived usefulness and ease of use of online banking. They basically have tested the validity of the technology acceptance model in Austrian banking context. Other questions relate to web usability factor. There are six questions related to trust and security component. The last four questions test "preference for personal contact" factor.

Perceived Usefulness

Question 1: I find online banking useful (adapted from Awamleh & Fernandes, 2006)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I don't know
Number of respondents	0	13	45	18	14	0
Percentage (%)	0	14,4	50	20	15,6	0

Table 10: Perceived Usefulness

The statistics of the survey demonstrates that 45 of the respondents feel neutral toward online banking usefulness. Among 90 respondents, only 14 strongly agreed with this statement, while 18 agreed that online banking is a useful technology. Meanwhile, 19 of respondents do not find online banking useful.

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral(3)	3,37	0,91737

Table 11: The statistics measure of central tendency (Perceived Usefulness)

Question 2: Using online banking is more advantageous when compared to the traditional way of conducting banking transactions (adapted from Awamleh & Fernandes, 2006)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondent	0	1	9	61	16	3
Percentage (%)	0	1,1	10	67,8	17,8	3,3

Table 12: Perceived Usefulness

According to the survey results, 77 respondents out of 90 have believe that using online banking is more advantageous when compared to the traditional way of conducting banking transactions. Also, 9 respondents have a neutral view whether online banking is more advantagous when compared to the traditional way of using online banking. Whereas, only 1 individual have a different view on using online banking.

Mode	Median	Mean	Standart Deviation
Agree (4)	Agree (4)	4,12	0,6675

Table13: The statistics measure of central tendency (Perceived Usefulness)

The perceived usefulness factor is important for the customers' adoption of technology (Intana et al., 2013, Szopiński, T., 2016. and Lassar et al., 2005). The survey results have found that online banking is relatively useful for bank customers in Austria, besides a big group of participant ticked neutral option.

Overall, there is a positive relationship between perceived usefulness of online banking and its adoption. In case bank workers will communicate the system benefits of the system at the bank branches or in social media, they may attract attention from nonadopters and with time they may start utilizing online banking.

Perceived Ease of Use

Question 3: I find online banking easy to use (adapted from Pikkarainen et al., 2004)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	2	4	16	53	15	0
Percentage (%)	2,2	4,4	17,8	58,9	16,7	0

Table 14: Perceived Ease of Use

The statistics of the survey demonstrates that among 90 respondents, 15 strongly agreed and 53 agree that online banking is ease to use. There are only 16 individuals that feel neutral toward ease of use. Whereas, 6 individuals disagreed that online banking is easy in using technology.

Mode	Median	Mean	Standart Deviation
Agree (4)	Agree (4)	4,12	0,838

Table 15: The statistics measure of central tendency (Perceived Ease of Use)

This finding highlights the validity of the technology acceptance model in terms of online banking adoption particularly in Austria. Also, numerous studies have claimed that perceived ease of use of online banking has positive relation with its spreading (Loonam & O'Loughlin, 2008).

Question 4: Learning to use an online banking website was easy for me (adapted from Pikkarainen et al., 2004)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	8	15	27	35	5	0
Percentage (%)	8,8	16,7	30	38,9	5,6	0

Table 16: Perceived Ease of Use

Learning to navigate the online banking website was not easy for many bank customers. Only 40 individuals find the learning process easy, meanwhile, 27 respondents have a neutral view regarding the easiness of learning how to navigate the online banking website. There are 23 respondents for whom learning to navigate an online banking website was not easy.

Mode	Median	Mean	Standart Deviation
Agree (4)	Neutral (3)	3,16	1,059

Table 17: The statistics measure of central tendency (Perceived Ease of Use)

According to the survey result, learning how to use the online banking website is not easy for all bank customers. Since the difficulty in user doesn't result in ease of use, this factor may explain the rejection of a group of bank customers to adopt online banking.

Hence, banks' employees may assist their customers to learn the way online banking website works and enhance online banking adoption. learn the way on-line banking website works and inhence online banking adoption.

Question 5: Online banking website is easy to navigate (adapted from Pikkarainen et al., 2004)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	2	17	12	46	13	0
Percentage (%)	2,2	18,9	13,3	51,1	14,5	0

Table 18: Perceived Ease of Use

According to the survey result, 59 respondents out of 90 have found online banking is easy to navigate. However, 19 of study participants have not found that online banking website is easy to navigate. Also, 12 respondents have a neutral view regarding online banking website navigation.

Mode	Median	Mean	Standart Deviation
Agree (4)	Agree (4)	3,56	1,0283

Table 19: The statistics measure of central tendency (Perceived Ease of Use)

Furthermore, the website must be designed by taking into account ease of learning website's features. It is importane on early stage of adoption and further use (Vankatesh, 2000). Also, ease in navigation of online banking website as well as app may drawing potential bank customers' attention and on the higher scale increase the percentage of adoption (Poon, 2008).

In addition, the statistical measure of central tendency highlights that adopters of online banking find it easy to use. In all questions about ease of use factors have mode 'agree'.

Web usability

Question 6: Online banking website provides smooth log-in experience at all electronic items

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	0	13	37	24	16	0
Percentage (%)	0	14,4	41,1	26,7	17,8	0

Table 20: Web usability

The statistics of the survey shows that 40 individuals agree that online banking website provides smooth log-in experience at all electronic means. Whereas, 13 individuals disagree with this statement. There are 37 individuals that feel neutral toward smooth log in online banking at all electronic items. The login experience is important for online banking adoption due to numerous reasons. It protects the account from access of alien. It is the first page that the bank customer sees. Thus, the finding depicts that the majority of participants have a smooth login experience in online banking which should positively influence an online banking adoption.

Mode	Median	Mean	Standard Deviation
Neutral (3)	Agree (4)	3,47	0,9508

Table 21: The statistics measure of central tendency (Web usability)

Question 7: Online banking website is visually appealing

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	0	16	31	27	12	4
Percentage (%)	0	17,9	34,4	30	13,3	4,4

Table 22: Web usability

An online banking website is visually appealing for 39 respondents out of 90. Meanwhile, there are 16 respondents that find the design of online banking not appealing for them. There are 31 individuals that feel neutral toward the design of online banking website. Also, 4 survey participants picked 'I do not know' option.

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral (3)	3,52	1,0729

Table 23: The statistics measure of central tendency (Web usability)

Question 8: I have received enough instructions that explain how to use online banking

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	8	27	16	34	5	0
Percentage (%)	8,8	29,9	17,9	37,8	5,6	0

Table 24: Web usability

According to the survey results, 8 respondents and 27 disagree that have not received instructions that explain functions of online banking.

Meanwhile, among 90 respondents 34 "agreed" and 5 "strongly agreed" that the bank have send enough instructions about online banking. There are 16 individuals that picked the option 'neutral'.

Mode	Median	Mean	Standart Deviation
Agree (4)	Neutral (3)	3,01	1,1267

Table 25: The statistics measure of central tendency (Web usability)

Also, the statistical measurements of the central tendency show that the majority of participants feel neutral toward web usability. This finding might state that web usability factor does not critically influence online banking adoption in Austria.

As it was noticed the navigation of the website might be a reason that stops individuals from using online banking. It is important for the bank to provide instructions to a person. Thus, individual, stepwise, understnads process of making each financial activity through the website. Additionally, on the bank's website should be clear instructions about the functions of the website.

The results of the similar study conducted in Spain found that "bank customers easily do what they want to do by following instructions in online banking website" (Aldás-Manzano et al., 2009). Thus, banks' executives should take into account the web navigation and design aspect. According to numerous studies, a poor navigation of online banking leads to a loss of possible online banking adopters.

Privacy and Security

Question 9: I believe that online banking is reliable (adapted from Pikkarainen et al., 2004)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	2	6	30	35	17	0
Percentage (%)	2,2	6,7	33,3	38,9	18,9	0

Table 26: Privacy and Security

According to the findings from the survey, among 90 respondents 17 strongly agreed, and 35 of the participants believe that the online banking is reliable for their privacy. Although, there are 30 respondents that picked the 'neutral' option. Whereas, 8 respondents do not receive online banking reliable.

According to the survey results, the majority of bank customers perceive online banking as a reliable technology.

Mode	Median	Mean	Standart Deviation
Agree (4)	Agree (4)	3,66	0,938

Table 27: The statistics measure of central tendency (Privacy and Security)

The weighted mean is 3,66. This is between "agree" and "neutral". Meanwhile, the median and mode of grouped data show that the majority of respondents picked 'agree' option. Thus, there is a difference in opinions regarding the reliability of the system.

Question 10: I am afraid of hackers, who may access my online bank accounts illegally (adapted from Pikkarainen et al., 2004)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondent	6	25	31	18	5	5
Percentage (%)	6,7	27,8	34,3	20	5,6	5,6

Table 29: Privacy and Security

The statistics of the survey shows that 18 individuals as well as 5 participants have a fear of hackers, who may access their online banking account.

Whereas, 25 individuals disagree and 6 strongly disagree with this statement. There are 31 individuals who are not certain whether they are afraid of hackers to attack his or her online bank account, so they picked 'neutral' option. Also. there are 5 individuals that do not know.

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral (3)	3,08	1,251

Table 30: The statistics measure of central tendency (Privacy and Security)

According to Hentzum et al. (2004) research that was focused only on privacy and security aspects of online banking found negative relation between "the risk with the possibility for substantial economic loss" and the online banking adoption.

Question 11: I believe my personal information in online banking is protected

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondent	3	22	31	19	8	7
Percentage (%)	3,3	24,4	34,4	21,1	8,9	7,8

Table 31: Privacy and Security

The survey findings show that 27 participants expects that their personal information is protected in online banking, 31 respondents are neutral and not confident whether the information is protected or not. Meanwhile, 25 individuals do not believe that their personal information in online banking is protected. There are 7 individuals that picked 'I don't know' option.

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral (3)	3,31	1,251

Table 32: The statistics measure of central tendency (Privacy and Security)

The statistical measurement regarding the central tendency shows that mode, median, and mean are neutral. Therefore, bank customers in Austria do not associate high risks of using online banking.

The result clearly shows that confidence in the privacy and security of online banking plays an important role in its adoption. Because of security threat, banks should assure their customers that their private information is kept properly.

Trust in Bank

Question 12: I trust that banks care about the financial privacy of their customers

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	3	13	40	18	12	4
Percentage (%)	3,3	14,4	44,4	20,1	13,3	4,5

Table 33: Trust in Bank

In accordance with the survey results as shown above, among 30 respondents, 12 strongly agreed, and 18 agree that the banks care about their financial privacy. There are 40 bank customers that feel neutral. Whereas, 16 individuals do not believe that bank executives are concerned about the financial privacy of their customers. Also, 8 of the respondents do not know whether banks care about their financial privacy or they do not.

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral (3)	3,39	1,152

Table 34: The statistics measure of central tendency (Trust in Bank)

According to Yu et al. (2015), trusting beliefs of competence, integrity, and shared values are a key of the bank's determinant to trustworthiness and positively reflect online banking adoption. Therefore, banks should focus on building trusting relationships with their customers.

Trusting relationships may increase the percentage of online banking adopters, and influence banks' key performance indicators, for instance, the number of depositors, etc.

Question 13: I have received enough information from a bank about the security system that protects my online banking account

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	4	13	27	38	8	0
Percentage (%)	4,5	14,4	30	42,2	8,9	0

Table 35: Trust in Bank

The survey results show that 38 agreed participants and 8 strongly agreed that they have received enough information from the banks about the security system of online banking. There are 27 respondents that picked 'neutral' option. Also, 17 out of 90 respondents did not remember that they received enough information from a bank about the security system.

Many similar studies about online banking adoption have found that, there is a positive relationship between the information and reputation about a particular bank and an acceptance of online banking from that bank (Howcroft et al., 2017 cited at Aldás–Manzano, 2009).

Mode	Median	Mean	Standart Deviation
Agree (4)	Agree (4)	3,67	0,987

Table 36: The statistics measure of central tendency (Trust in Bank)

Question 14: The reputation and the size of the bank provide an assurance of online banking integrity

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	1	4	23	31	27	4
Percentage (%)	1,1	4,5	25,5	34,4	30	4,5

Table 37: Trust in Bank

The survey results have shown that 31 bank customers out of 90 agreed and 27 strongly agreed with the statement that size of the bank provides assurance of on-line banking integrity. There are 23 respondents are neutral regarding the reputation of the bank. Whereas 5 individuals do not relate the reputation and the size of the bank with online banking integrity. Also, 4 respondents picked 'do not know' variant.

According to Mukherjee & Nath (2003) study, the future commitment of the customers to online banking depends on the perceived trust, toward not only on-line banking but a bank as well.

Thus, banks should build trustworthy relationships with their customers and send enough information in order to assure their customers that the bank protects their information.

Mode	Median	Mean	Standart Deviation
Agree (4)	Agree (4)	4,01	1,011

Table 38: The statistics measure of central tendency (Trust in Bank)

Preference for Personal Contact

Question 15: I am more assured by receiving an assistance from a bank employee over utilizing online banking (adapted from Walker & Johnson, 2006)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	7	17	33	19	12	2
Percentage (%)	7,8	18,9	36,7	21,1	13,3	2,2

Table 39: Preference for Personal Contact

In accordance with the survey findings, 31 of the study participants claim that they feel more in control while getting assistance from a bank worker at a bank branch over utilizing online banking. There are 33 individuals who feel neutral. Whereas, 24 of the respondents believe differently and disagree with this statement. Furthermore, 2 respondents picked "I do not know" option.

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral (3)	3,2	1,192

Table 40: The statistics measure of central tendency (Preference for Personal Contact)

Question 16: I am more in control when dealing with bank worker or making finincial activities at a bank branch (adapted from Walker & Johnson, 2006)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	1	18	39	14	17	1
Percentage (%)	1,1	20	43,3	15,6	18,9	1,1

Table 41: Preference for Personal Contact

According to the survey statistics, 31 of respondents feel more in control when they deal with a bank worker. There are 39 survey participants that feel neutral whether they deal with banks worker or with automated systems. Meanwhile, 19 do not feel in control while dealing with automated systems like online banking. There is 1 respondent that selected 'do not know' option.

Previous researches regarding online banking services have shown that some people prefer to contacting and communicating with a person rather than digital system because consumers feel more in control while dealing with an automated machine (Walker and Johnson, 2006).

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral (3)	3,35	1,0722

Table 42: The statistics measure of central tendency (Preference for Personal Contact)

The survey findings prove that there are individuals who desire for face to face communication with bank worker, and they might be reluctant in using online banking.

Question 17: My service requirements from the bank are better served by the bank worker than by online banking (adapted from Walker & Johnson, 2006)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondents	0	13	47	14	16	0
Percentage (%)	0	14,4	52,2	15,6	17,8	0

Table 43: Preference for Personal Contact

The survey statistics regarding online banking found that 30 individuals believe that their particular service requirements from the bank are better served by the bank worker, 47 individuals are neutral. Meanwhile, 13 of respondents disagree that bank workers better serve their particular services than online banking.

Mode	Median	Mean	Standart Deviation
Neutral (3)	Neutral (3)	3,67	0,951

Table 44: The statistics measure of central tendency (Preference for Personal Contact)

The mode, meadian and means are neutruai in the majority of questions related prefrence of personla contact. Thus, adopters of online banking perform financial activities without assistance from a bank worker.

Question 18: I believe that online banking provides me with the same quality services as the bank does in its physical branch office

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	I do not know
Number of respondent	2	3	26	42	17	0
Percentage (%)	2,2	3,3	28,9	46,7	18,9	0

Table 45: Preference for Personal Contact

In accordance with the study findings 59 of the respondents believe that online banking provides the same quality services as the bank does in its physical branch office. There are 26 of the respondents that feel neutral. Also, 5 of the respondents don't believe that online banking provides the same quality services as the bank does in its physical branch office.

Mode	Median	Mean	Standart Deviation
Agree (4)	Agree (4)	3,76	0,875

Table 46: The statistics measure of central tendency (Preference for Personal Contact)

The finding of this study reveals that the majority of respondents feel neutral toward personal contact with the bank representatives. However, there are still a group of bank customers that believe that bank workers serve their particular requirements from the bank better, beside the fact that making financial activities online is time efficient for an individual. Therefore, the desire for personal contact factors slows the adoption of online banking in Austria but not substantially.

According to Grabner-Krauter and Breitenecker (2011), preference for personal contact is one of the most important factors that stop online banking adoption. The design of comfortable in using website and app might not be sufficient to overcome consumers' reluctance to utilize banking services in virtual space.

Qualitative Research Results

At this moment, a total of 16 interviews have been undertaken, 14 interviews with adopters and 2 one with non-adopters. In the qualitative part have participated nine male and seven female respondents. As it was stated the opportunity sampling method was employed. There were interviews with the adopters of online banking as well as non-adopters.

The interviewees have a bank account in one of the banks operating in Austria. There are Austrian residence as well as the residence of other European member states. Majority of participants work in Austria. The following part presents a semantic analysis of interviews with the adopter. The second part presents non-adopters opinion regarding online banking.

Opening process of online banking account

Question 1: Do You have online banking? Please, describe the opening online banking account process.

This question is regarding the introduction of online banking to a bank customer. Answering this question, 11 out of 16 interviewees found the registration process easy.

Also, bank customers have assessed positively the bank workers' assistance in this process. The customers were speaking highly about workers friendly

assistance while opening an online banking in Erste Bank. Meanwhile, three respondents criticized the banks and said that bank worker gave them a couple of documents to sign and did not present an online banking website, its features, benefits, etc.

Ease of use and usefulness

Question 2: Do You find online banking ease to use, useful, and easy to navigate?

This question asks interviewee's opinion about online banking. All of the respondents find online banking useful for managing their financial activities from home. Most of the interviewees said that the efforts of learning the way online banking operates were worth it. They claim that online banking helps them to save time. Also, many interviewees have mentioned that using online banking is more efficient, than visiting a bank branch. All respondents have claimed that online banking is easy to use. Only one respondent has noticed that there are many options on the online banking platform, and he would reduce the number of options and services offered via online banking.

The way bank may attract non adopter

Question 3: What do You think bank workers should do, in order to attract non-adopters to start using online banking?

Most of the interviewees believe that non-adopters are avoiding to use innovative technology on a daily bases due to three reasons: confusing website, elder people have a habit to visit the bank and language barrier.

The confusing online banking website. In this regard, banks may systematically advertise the way online banking works. Also, banks may reduce

the number of options and leave the most frequently performed options, for example, remove round-up savings option.

The second reason is the habit of visiting the bank for making a transaction. Numerous of interviewee have enclosed that their parents do not use online banking. In case for the banks attracting the elderly population is economically reasonable, the interviewee has suggested that banks may organize presentations at their branches. The introduction should be structured as follow: an overview of online banking, its advantages par, the necessary steps of opening an online banking account and making a transaction.

The third reason is numerous expats, refugees, and international students that do not speak English and German may avoid using online banking. In case, banks add "languages" option and offer online banking website on different international languages: French, Italian, Turkish, Russian, etc. Such addition to the basic services will not necessarily lead to massive adoption. Nevertheless, the language option may assure customers with none Austrian origins that they are appreciated for banks. The bank will serve them until they improve their knowledge of German language.

Non-adopters experience with banks and online banking

At the time of the study, two participants of the qualitative part did not have online banking account. Both non-adopters have a different working background, age, and marital status. However, they are the residence of Austria and have a bank account in one of the local banks. The following part presents a semantic analysis of interviews with the non-adopters of online banking.

Question 1: Please, describe the process of opening the bank account.

Both of the non-adopters have one bank account in a bank situated in Austria and another bank accounts (in Central America and Ukraine). One of the non-adopters has opened a bank account a long time ago (in 90th). The bank worker did not offer to open online banking account, because it did not exist.

However, in the second case, the bank worker offered to register an online banking account but non-adopter rejected an offer. The reason she stated was: "For me, it took time to open a regular bank account, due to technical issues. Once I got an offer to register online banking, I simply denied. Also, I had another meeting coming up". She was opening a bank account at the local bank in 2012 year.

After the opening of regular bank account, the bank representative have not reached those two individuals with an offer to open an online banking website neither via email, or in person. Both the non-adopters feel comfortable with proceeding a transaction via bankomat, ATM machines, and make online purchases with a credit card. They do not see a need for opening online banking, despite the benefits of the system.

Question 2: Are there reasons that stop you from opening an online banking account? If yes, please describe them.

Both of the non-adopters have found online banking risky way of utilizing financial services. In spite of trust in the bank that serves their accounts. One of the respondents has said "I have enough stresses in life. I would not want to worry about some app on my phone".

Another interesting finding was that both non-adopters avoid watching their spendings. Both of the nonadopters claim that they understand the approximate balance at the bank account. Thus, the threat of financial privacy is the major reason that stops from opening bank account. The second reason is the low need for utilizing online banking.

Combined Outcome

The results from both the quantitative and the qualitative parts of the study indicates that *perceived usefulness, ease of use, trust in the bank institutions* are positively influencing an adoption of online banking. Regarding the *privacy threat and security* of the system most of the respondents in both qualitative and quantitative part exposed their concerns.

They claimed that keeping private information online is still a challenge for them. Numerous respondents have indicated that the risk premium for online banking services is higher than in the traditional banking channel. Second problem is the security concerns and lack of awareness how to overcome this barrier in adoption process and explain to bank customers that banks improve security system in order to minimize privacy threats (Marakarkandy et al ., 2017).

There are controversial findings regarding web usability. The results of the quantitative part of the research reveals that online banking website has an appealing design and comfortable navigation process. However, the qualitative part found that there are details in the website which bank customers would want to be simplified.

The survey results regarding the preference for personal contact shows that majority of respondents feel neutral whether to visit a bank branch, or using online banking . However, interviewees have mentioned that personal assistance was important during registering of an online banking account

Conclusion

The study was aiming to explain process of online banking spreading in Austria. In the academic literature, there are multiple variables that determine the acceptance of informational systems by the targeted group of people or an entire population.

These variables are web usability, privacy risks, trust in the bank, preference for personal contact, perceived ease of use and usefulness of online banking (Chong et al., 2010, Aldas - Manzano et al., 2009, Giovanis et al., 2012, Grabner-Krauter & Breitenecker, 2011). Also, last two variables are extracted from the Technology Acceptance Model (Davis, 1989).

The quantitative and qualitative researches were conducted in Austria in order to collect primary data. In this regard, 93 individuals have participated in the survey, and 16 interviews were conducted. Among all of the survey participants, the three individuals have not by far opened an online banking account.

In addition, all three individuals happen to be exact and work in Austria temporary. However, three of them have a bank account in one of the Austrian banks.

The survey results demonstrate that most of the bank customers perceive online banking as a useful and easy to use system. Thus, these factors positively impact online banking adoption and lines up with the Technology Acceptance Mod-

el. According to Sikdar et al. (2015), Pikkarainen et al. (2004) technology acceptance model explains the satisfaction level of online banking adopters. In addition, banks should communicate these benefits of the website to non-adopters.

The fourth important factor is privacy threat that is associated with the system. Since most of the participants perceive online banking website as a reliable, and their privacy is protected. On the other hand, the interview with the non adopters found that the privacy threat is the obstacles that stops online banking adoption. Thus, the main factor that explains low online banking adoption is a threat of the privacy. This issue is endorsed in numerous studies by Hertzum et al. (2004), Yiga & Kyung (2016), Teo & Tan (2000), and Mansumittrchai & Chiu (2012).

The fifth significant variable is trust in the bank that serves online banking. The study found a positive relation between trust in the bank and online banking adoption. Also, the majority of participants agreed with the statements that 'that the reputation and the size of the bank provides an assurance of online banking it offers'. Thus, bank established banking sector of Austria positively influences online banking spreading. This idea is also endorsed by McKnight et al., 2002, and Yu et al (2015), that trust in the banking institutions is a fundamental requirement for the adoption of financial services.

The last factor is the preference for personal contact, according to the survey results, most of the participants are confident and trustful while dealing with the bank employee. They are also confident while conducting financial activities via online banking. Regarding this factor, Angelakopoulous & Mihiotis (2011), and Walker & Johnson (2006) also found that customer does not strive for an assistance from bank worker while doing financial transactions.

The qualitative part of the research is based on interviews from adopters as well non-adopter of the online banking. In this regard, 16 interviews were recorded from bank customers with ages ranging from 20 to 55 years.

Also, interviewees have different working/career background, and family dynamics. Interviews have shown risks associated with financial privacy stops non adopters from opening online banking.

The findings from this research may be valuable of the bank executives, and workers in IT and marketing department. It may improve the security on the online banking apps, by face verification option. In addition, online banking may add website version on foreign language. Also, it points out the benefits of online banking which marketing department should communicate in order to attract non-adopters attention and encourage them to utilize online banking services.

Limitations and Future Research

The goal of this study is to figure out factors that affect technology adoption and the most appropriate model for studying IT adoption is the TAM (technology acceptance model). However, it is fair to give a credit to other theoretical frameworks that explain individuals' behavior. Thus, the theory of reasoned action or innovation diffusion theory can be employed in future studies regarding online banking adoption.

Additionally, the study might suffer from the fact that other possible factors, for instance, trust in the internet, an increase of self - efficacy, government support were not tested in this study.

In terms of location, students that study in The Universities located in less urbanized cities of Austria, for instance, Linz, may research "an online banking adoption not in Oberösterreich". This study will produce valuable information for banks. Other issues of this study is the sample size. For a more comprehensive future study, a larger sample size should be employed (Singh & Kamini, 2012).

Bibliography

Agarwal, R. and Prasad, J. (1998). A Conceptual and Operational Definition of Personal Innovativeness in the Domain of Information Technology. *Information Systems Research*, ISS. 9, pp. 204-224. Retrieved on May 9, 2019, from: [https://www.deepdyve.com/lp/informs/a-conceptual-and-operational-definition-of-personal-innovativeness-in-4hvu-X5DEye?](https://www.deepdyve.com/lp/informs/a-conceptual-and-operational-definition-of-personal-innovativeness-in-4hvu-X5DEye?articleList=%2Fsearch%3Fquery%3DA%2BConceptual%2Band%2BOperational%2BDefinition%2Bof%2BPersonal%2BInnovativeness%2Bin%2Bthe%2BDomain%2Bof%2BInformation%2BTechnology)

[articleList=%2Fsearch%3Fquery%3DA%2BConceptual%2Band%2BOperational%2BDefinition%2Bof%2BPersonal%2BInnovativeness%2Bin%2Bthe%2BDomain%2Bof%2BInformation%2BTechnology](https://www.deepdyve.com/lp/informs/a-conceptual-and-operational-definition-of-personal-innovativeness-in-4hvu-X5DEye?articleList=%2Fsearch%3Fquery%3DA%2BConceptual%2Band%2BOperational%2BDefinition%2Bof%2BPersonal%2BInnovativeness%2Bin%2Bthe%2BDomain%2Bof%2BInformation%2BTechnology)

Alain Yee-Loong Chong, Keng-Boon Ooi, Binshan Lin, & Boon-In Tan. (2010). Online banking adoption: an empirical analysis. *International Journal of Bank Marketing*. Vol. 28, ISS. 4, pp. 267- 287. Retrieved on May 9, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/online-banking-adoption-an-empirical-analysis-zTryhEt1sV?articleList=%2Fsearch%3Fquery%3Donline%2Bbanking>

Aldás-Manzano, J., Lassala-Navarré, C., Ruiz-Mafé, C., Sanz-Blas, S. (2009). The role of consumer innovativeness and perceived risk in online banking usage. *International Journal of Bank Marketing*, Vol. 27, ISS. 1, pp. 53–75. Retrieved on April 28, 2019, from: [https://www.deepdyve.com/lp/emerald-publishing/the-role-of-consumer-innovativeness-and-perceived-risk-in-online-uyGInBC7kR?](https://www.deepdyve.com/lp/emerald-publishing/the-role-of-consumer-innovativeness-and-perceived-risk-in-online-uyGInBC7kR?articleList=%2Fsearch%3Fquery%3Dperceived%2Brisk%2Bin%2Bonline%2Bbanking)

[articleList=%2Fsearch%3Fquery%3Dperceived%2Brisk%2Bin%2Bonline%2Bbanking](https://www.deepdyve.com/lp/emerald-publishing/the-role-of-consumer-innovativeness-and-perceived-risk-in-online-uyGInBC7kR?articleList=%2Fsearch%3Fquery%3Dperceived%2Brisk%2Bin%2Bonline%2Bbanking)

Angelakopoulos, G., & Mihiotis, A. (2011). E-banking: Challenges and opportunities in the Greek. *Electronic Commerce Research*, Vol.11, ISS. 3, pp. 297–317. Retrieved on April 28, 2019, from: [https://www.deepdyve.com/lp/springer-journals/e-banking-challenges-and-opportunities-in-the-greek-banking-sector-W0KIL9TxSy?](https://www.deepdyve.com/lp/springer-journals/e-banking-challenges-and-opportunities-in-the-greek-banking-sector-W0KIL9TxSy?articleList=%2Fsearch%3Fquery%3DE-banking%253A%2Bchallenges%2Band%2Bopportunities%2Bin%2Bthe%2BGreek%2Bbanking%2Bsector)

[articleList=%2Fsearch%3Fquery%3DE-banking%253A%2Bchallenges%2Band%2Bopportunities%2Bin%2Bthe%2BGreek%2Bbanking%2Bsector](https://www.deepdyve.com/lp/springer-journals/e-banking-challenges-and-opportunities-in-the-greek-banking-sector-W0KIL9TxSy?articleList=%2Fsearch%3Fquery%3DE-banking%253A%2Bchallenges%2Band%2Bopportunities%2Bin%2Bthe%2BGreek%2Bbanking%2Bsector)

Apuke, O. (2017). Quantitative Research Methods: A Synopsis Approach. *Arabian Journal of Business and Management Review*, Vol. 6, ISS. 10, pp. 40- 47. Retrieved on September 9, 2019, from: https://www.researchgate.net/publication/320346875_Quantitative_Research_Methods_A_Synopsis_Approach

Ayuketang, M., N. (2018). Impact of Technology on E-Banking. *International Journal of Advanced Networking and Applications*. Vol. 9, Iss. 6, pp. 3645-3653. Retrieved on July 30, 2019, from: <http://oaji.net/articles/2017/2698-1528117916.pdf>

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, Vol 50, pp. 179–211. Retrieved on April 29, 2019, from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.317.9673&rep=rep1&type=pdf>

Bank Austria AG UniCredit Annual Report (2018). Retrieved on September, 10, 2019:

BAWAG P.S.K. Annual report (2018). Retrieved on September, 10, 2019: <file:///Users/veriko/Desktop/consolidated-annual-report-2018-data.pdf>

Barbour, S., R. (2000). The role of qualitative research in broadening the 'evidence base' for clinical practice. *Journal of Evaluation in Clinical Practice*, Vol. 6, ISS. 2, pp. 155-163. Retrieved on September, 10, 2019: <https://pdfs.semanticscholar.org/7231/502528b1685f20ee0abfc3f2fd08861d5fe2.pdf>

Belleau, B.D., Summers, T.A., Xu, Y. & Pinel, R. (2007). Theory of Reasoned Action Purchase Intention of Young Consumers. *Clothing & Textiles Research Journal*, Vol.25, ISS. 3, pp. 244-257. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/247782677_Theory_of_Reasoned_Action

Bronwyn H. Hall & Beethika Khan (2002). Adoption of New Technology . *New Economy Handbook*. University of California at Berkeley. Retrieved on September 7, 2019, from: <https://eml.berkeley.edu/~bhall/papers/HallKhan03%20diffusion.pdf>

Burgstaller, J. (2017). Dynamics of Retail–Bank Branching in Austria. *Economic Notes*, Vol. 46, ISS. 3, pp. 527-554, Retrieved on May 9, 2019, from: <https://www.deepdyve.com/lp/wiley/dynamics-of-retail-bank-branching-in-austria-0Ae0WtQqaC?articleList=%2Fsearch%3Fquery%3DDynamics%2Bof%2BRetail%25E2%2580%2590Bank%2BBranching%2Bin%2BAustria>

Casaló, A., Flavián, C., & Guinalíu, M. (2008). The role of satisfaction and website usability in developing customer loyalty and positive word-of-mouth in the e-banking services. *International Journal of Bank Marketing*, Vol. 26, ISS.6, pp. 399-417. Retrieved on April 29, 2019, from: https://www.researchgate.net/publication/238758773_The_role_of_satisfaction_and_website_usability_in_developing_customer_loyalty_and_positive_word-of-mouth_in_the_e-banking_services

Chang, H. S., Lee, S. Ch., and Ji, G.Y. (2016). Wearable device adoption model with TAM and TTF. *International Journal of Mobile Communications*, Vol. 14, ISS. 5, pp. 518-537. Retrieved on September 20, 2019, from: <https://www.deepdyve.com/lp/inderscience-publishers/wearable-device-adoption-model-with-tam-and-ttf-p1MEA4VUcG?articleList=%2Fsearch%3Fquery%3DTAM%2BAdoption>

Chatzoglou, P., Kamperidou, S., Vraimaki, E., Polychrou, E., Aggelidis, V., & Diamantidis, A. (2014). Factors affecting the adoption of internet banking in Greece. *International Journal of Applied Systemic Studies*, Vol.5, ISS.4, pp. 290-310. Retrieved on September 20, 2019, from: <https://www.deepdyve.com/lp/inderscience-publishers/factors-affecting-the-adoption-of-internet-banking-in-greece-esDY3bP58L?>

Check J., & Schutt R. K. (2012). *Survey research. Research methods in education*. Thousand Oaks, CA: SagePublications, pp. 159–185. Retrieved on May 8, 2019, from: https://www.researchgate.net/publication/286445115_Understanding_and_Evaluating_-_Survey_Research

Chowdhury, N., Haque, M., Rahman, M., Ferdousi, N. (2015). An empirical investigation into the factors affecting the usage of online banking. *International Journal of Economics, Commerce, and Management*. United Kingdom Vol. 3, Iss. 6, pp. 479- 498. Retrieved on September 5, 2019, from: https://pdfs.semanticscholar.org/5985/ee0c523eeb-faaa20046233f804548d0a8381.pdf?_ga=2.184942957.510495666.1568923531-328225595.1566730668

Creswell, J., & Plano Clark, V. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: Sage. Accessed on 30 April, from: <https://journals.sagepub.com/doi/abs/10.1177/1094428108318066?journalCode=orma>

Dahi, M., & Ezziane, Z. (2015). Measuring e-government adoption in Abu Dhabi with a technology acceptance model (TAM). *International Journal of Electronic Governance*, 7(3), 206-231. <https://www.deepdyve.com/lp/inderscience-publishers/measuring-e-government-adoption-in-abu-dhabi-with-technology-MK5ylB2Nt4?articleList=%2Fsearch%3Fquery%3DTAM%2Badoption>

Daniel, E. (1999): Provision of electronic banking in the UK and the Republic of Ireland: *International Journal of Bank and Marketing*, Vol.17, ISS. 2, pp. 72 - 82. Retrieved on April 28, 2019, from: <http://ce.sharif.ir/courses/86-87/1/ce428/resources/rootebanking%20service%20quality/2.pdf>

Davis, F.D., Bagozzi, R.P. & Warshaw, P.R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, Vol. 35, ISS. 8, pp. 982- 1003. Retrieved on April 28, 2019, from: https://www.researchgate.net/profile/Richard_Bagozzi/publication/227446117_User_Acceptance_of_Computer_Technology_A_Comparison_of_Two_Theoretical_Models/links/57c85f7608ae9d640480e00f/User-Acceptance-of-Computer-Technology-A-Comparison-of-Two-Theoretical-Models.pdf?origin=publication_detail

Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. Management Information Systems Research Center, University of Minnesota. MIS Quarterly, Vol. 13, No. 3, pp. 319-340. Retrieved on April 28, 2019, from: https://www.researchgate.net/profile/Fred_Davis2/publication/200085965_Perceived_Usefulness_Perceived_Ease_of_Use_and_User_Acceptance_of_Information_Technology/links/54934b350cf286fe31268d8d/Perceived-Usefulness-Perceived-Ease-of-Use-and-User-Acceptance-of-Information-Technology.pdf?origin=publication_detail

Davis, F.D. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. International Journal of Machine Studies, Vol. 38, pp. 475-487. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/227446117_User_Acceptance_of_Computer_Technology_A_Comparison_of_Two_Theoretical_Models

Díaz, I. Aguiar, & J.R. Zagalaz Jiménez. (2019). Educational level and Internet banking. Journal of Behavioral and Experimental Finance, Vol. 22, pp. 31–40. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/238520539_Education_level_as_a_technology_adoption_moderator

Erikson, K., & Nielsson, D. (2007). Determinants of the continued use of self-service technology: The case of Internet banking. Technovation, Vol. 24, ISS. 7, pp. 159 - 167. Retrieved on September, 13, 2019: <https://www.deepdyve.com/lp/elsevier/determinants-of-the-continued-use-of-self-service-technology-the-case-e03NkKCxSE?articleList=%2Fsearch%3Fquery%3DDeterminants%2Bof%2Bthe%2Bcontinued%2Buse%2Bof%2Bself-service%2Btechnology%253A%2BThe%2Bcase%2Bof%2BInternet%2Bbanking>

Erste Group, Annual Report, (2018). Retrieved from, 2019: https://www.erstegroup.com/content/dam/at/eh/www_erstegroup_com/en/Investor%20Relations/2018/Reports/AR2018_Annual_Financial_Report_en.pdf

Erste group- factsheet. (2019). Retrieved from 2019: https://www.erstegroup.com/content/dam/at/eh/www_erstegroup_com/en/About%20us/factsheet-erste-group-en.pdf

Eurostat (2017). Internet banking on the rise. Retrieved on: April 28, 2019, from: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20180115-1>

Eveland, J.D. (1979). Issues in using the concept of "ADOPTION OF INNOVATIONS". Journal of Technology Transfer, Vol. 4, ISS. 1 . Retrieved on 6 May, 2019, from: https://www.researchgate.net/publication/225674717_Issues_in_Using_the_Concept_of_Adoption_of_Innovations

Intana, M., Chansa-ngavej, C., & Changchit, C. (2013). Factors encouraging the internet banking adoption in Thailand. *International Journal of Electronic Finance*, Vol. 7, ISS. 3, pp. 196-212. Retrieved, September 16, 2019 from: <https://www.deepdyve.com/lp/inderscience-publishers/factors-encouraging-the-internet-banking-adoption-in-thailand-7ivKHr4K0B?articleList=%2Fsearch%3Fquery%3Dthailand%2Binternet%2Bbanking%2Badooption>

Frances, R., Coughlan, M., & Cronin P. (2009). Interviewing in qualitative research. *International Journal of Therapy and Rehabilitation*, Vol.16, ISS.6, pp. 309-314. Retrieved on April 30, 2019, from: https://www.researchgate.net/publication/261471599_Interviewing_in_qualitative_research

Frances, R., Coughlan, M., & Cronin P. (2009). Interviewing in qualitative research. *International Journal of Therapy and Rehabilitation*, Vol.16, ISS.6, pp. 309-314. Retrieved on April 30, 2019, from: https://www.researchgate.net/publication/261471599_Interviewing_in_qualitative_research

Gaile-Sarkane, E., Skvarciany, V., Jureviciene, D., & Iljins., J. (2017). Internet banking adoption: case of Lithuania and Latvia. *International Journal of Learning and Changing*, Vol.9, ISS.1, pp. 46-58. Retrieved on May 9, 2019, from: <https://www.deepdyve.com/lp/inderscience-publishers/internet-banking-adoption-case-of-lithuania-and-latvia-9KF8w-K0fkV?articleList=%2Fsearch%3Fquery%3Dbanking%2Badooption%26page%3D2>

Gangwar, H., Date, H., & Ramaswamy, R. (2015). Understanding the determinants of cloud computing adoption using an integrated TAM-TOE model. *Journal of Enterprise Information Management*, 28(1), 107-130. Retrieved on May 9, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/understanding-determinants-of-cloud-computing-adoption-using-an-wOHT3gOad0?articleList=%2Fsearch%3Fquery%3DTAM%2Badooption>

Giordani, G., Floros, C., & Judge, G. (2014). Econometric investigation of internet banking adoption in Greece. *Journal of Economics*, Vol.41, ISS. 4, pp. 586–600. Retrieved on April 30, 2019, from: <https://www.emeraldinsight.com/doi/abs/10.1108/JES-04-2011-0042>

Giovanis, A., Polychronopoulos, G., & Binioris, S. (2012). An extension of TAM model with IDT and security/privacy risk in the adoption of internet banking services in Greece. *Journal of Economics*, Vol.7, ISS. 1, pp. 586–600. Retrieved on June 30, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/an-extension-of-tam-model-with-idt-and-security-privacy-risk-in-the-Yo6RGO6P5N?articleList=%2Fsearch%3Fquery%3DIDT%2Btheory>

Grabner-Kräuter, S., & Breitenecker, R. (2011): 'Factors influencing online banking adoption: Evidence from the Austrian market', *International Journal of Marketing and Advertising*, Vol 6, ISS. 4, pp. 333-351. Retrieved on May 9, 2019, from: https://www.researchgate.net/publication/253241290_Factors_influencing_online_banking_adoption_Evidence_from_the_Austrian_market

Gurau, C. (2002). Online banking in transition economies: The case of Romania. *International Journal of Bank Marketing* Vol. 20, ISS. 6, pp. 285-296. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/235310620_Online_banking_in_transition_economies_The_implementation_and_development_of_online_banking_systems_in_Romania

Hertzum, M., Jorgensen, N. & Norgaard, M. (2004). Usable Security and E-Banking: Ease of Use vis-à-vis Security. *Australasian Journal of Information Systems*, Vol. 11, pp. 52-64. Retrieved on May 3, 2019, from: https://www.researchgate.net/publication/30062989_Usable_Security_and_E-Banking_Ease_of_Use_vis-a-vis_Security

Karahanna, E., Chervany, N., & Straub, D. (1999). Information Technology Adoption Across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs, *MIS Quarterly*, Vol. 23, ISS. 2, pp:183-213. Retrieved on May 3, 2019, from: <http://users.jyu.fi/~mieijala/luama/materiaali/3/INFORMATION%20TECHNOLOGY%20ADOPTION%20ACROSS.pdf>

Karjaluoto, H., Mattila, M., & Pento, T. (2002). Factors underlying attitude formation towards online banking in Finland. *International Journal of Bank Marketing*, Vol. 20, ISS. 6, pp . 261-272. Retrieved, September 16, 2019: <https://www.deepdyve.com/lp/emerald-publishing/factors-underlying-attitude-formation-towards-online-banking-in-PYT0gWlx-BY?articleList=%2Fsearch%3Fquery%3DFactors%2Bunderlying%2Battitude%2Bformation%2Btowards%2Bonline%2Bbanking>

Kawulich, B. (2012). Collecting data through observation. *Doing Social Research: A global context*, Chapter: Collecting data through observation, Publisher: McGraw Hill, Editors: C. Wagner, B. Kawulich, M. Garner, pp.150-160. Retrieved on May 9, 2019, from: https://www.researchgate.net/publication/257944783_Collecting_data_through_observation

Kolodinsky, J., Jeanne M. Hogarth, & Marianne A. Hilgert. (2004). The adoption of electronic banking technologies by US consumers. *International Journal of Bank Marketing*, Vol. 22 ISS. 4, pp.238-259, Retrieved on April 29, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/the-adoption-of-electronic-banking-technologies-by-us-con>

sumers-bJVyehOheL?articleList=%2Fsearch%3Fquery%3DThe%2BAdoption%2Bof%2B-electronic%2Bbanking%2Btechnologies%2Bby%2BUS%2Bconsumers

Lassar, W.M., Manolis, C., & Lassar, S.S. (2005): The relationship between consumer innovativeness, personal characteristics, and online banking adoption. *International Journal of Bank Marketing*, Vol. 23, ISS. 2, pp. 176–199. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/233972193_The_Relationship_between_Consumer_Innovativeness_Personal_Characteristics_and_Online_Banking_Adoption

Liao, S., Shao, Y.P., Wang, H. and Chen, A. (1999). The adoption of virtual banking: an empirical study. *International Journal of Information Management*, Vol.19, pp. 63-74. Retrieved on April 29, 2019, from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.495.9482&rep=rep1&type=pdf>

Mangin, J., Bourgault, N., & León, J. (2011). Testing the Application of the Technology Acceptance Model in the French Quebecer Banking Environment. *International Advances in Economic Research*, Vol. 17, ISS.(3), pp. 364-365. Retrieved on April 28, 2019, from: <https://www.deepdyve.com/lp/springer-journals/testing-the-application-of-the-technology-acceptance-model-in-the-TBs5u0Uqit?articleList=%2Fsearch%3Fquery%3Dtechnology%2Bacceptance%2Bmodel%2Bbanking>

Mansour, B, K. (2016). An analysis of business' acceptance of internet banking: an integration of e-trust to the TAM. *Journal of Business & Industrial Marketing*, Vol. 31, ISS.8, pp. 982-994. Retrieved on September 20, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/an-analysis-of-business-acceptance-of-internet-banking-an-integration-QYLEmJV0Hj?>

Mansumittrchai, S., & Chiu, C. (2012). Adoption of internet banking in UAE: factors underlying adoption characteristics, Vol. 5, ISS. 1, pp. 103–115. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/235746973_Factors_Underlying_the_Adoption_of_Online_Bankingby_Mexican_Consumers

Marakarkandy, B., Yajnik, N., and Dasgupta, Ch. (2017). Enabling internet banking adoption. *Journal of Enterprise Information Management*, Vol. 30, ISS. 2, pp. 263 - 295. Retrieved on June 28, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/enabling-internet-banking-adoption-FM5TZ4nT4r?articleList=%2Fsearch%3Fquery%3Dinternet%2Bbanking>

Martínez-Planell, R. & Trigueros Gaisman, M. (2012). Students' understanding of the general notion of a function of two variables. *Educational Studies in Mathematics*, Vol. 81, ISS. 3, pp. 365-384. Retrieved on 7 May 2019, from: https://www.researchgate.net/publication/236538037_Martinez-Planell_R_Trigueros_Gaisman_M_2012_Students'_understanding_of_the_general_notion_of_a_function_of_two_variables_Educational_Studies_in_Mathematics_81_3_365-384

McKnight, D.H., Choudhury, V., & Kacmar, C. (2002) 'Developing and validating trust measures for e-commerce: an integrative typology', *Information System Research*, Vol. 13, ISS. 3, pp.334–359. Retrieved on May 8, 2019, from: <https://pdfs.semanticscholar.org/b611/576195d9d883f9191b63009eb9483830a1b3.pdf>

McLeod, S. (1970). Simply psychology, sampling method. Retrieved on April 30, 2019, from: <https://www.simplypsychology.org/sampling.html>

Montazemi, A. R., & Qahri-Saremi, H. (2015). Factors affecting the adoption of online banking: A meta-analytic structural equation modeling study. *Information & Management*, Vol. 52, ISS. 2, pp. 210–226. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/268690573_Factors_Affecting_Adoption_of_Online_Banking_A_Meta-Analytic_Structural_Equation_Modeling_Study

OberBank annual report (2018). Retrieved on September, 2019: file:///Users/veriko/Desktop/irglobal_k_gb18_eng.pdf

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnla, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research*, Vol. 14, ISS. 3, pp. 224-235. Retrieved on April 29, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/consumer-acceptance-of-online-banking-an-extension-of-the-technology-p62HACVrvx?articleList=%2Fsearch%3Fquery%3DConsumer%2Bacceptance%2Bof%2Bonline%2Bbanking%253A%2Ban%2Bextension%2Bof%2Bthe%2Btechnology%2Bacceptance%2Bmodel>.

Polasik, M., & Wisniewski, P. (2009). An empirical analysis of internet banking adoption in Poland. *International Journal of Bank Marketing*, Vol.27, ISS.1, pp.32-52. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/228163479_Empirical_-_analysis_of_internet_banking_adoption_in_Poland

Ponto, J. (2015). Understanding and Evaluating Survey Research, *Journal of the advanced practitioner in oncology*, Vol. 6, ISS. 2, PP: 168–171. Retrieved on 7 May 2019, from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4601897/>

Poon, W-C. (2008). Users' adoption of e-banking services: the Malaysian perspective. *Journal of Business & Industrial Marketing*, Vol. 6, ISS. 2, PP: 168–171. Retrieved on 10 May 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/users-adoption-of-e->

banking-services-the-malaysian-perspective-7zad8AfsJ6?articleList=%2Fsearch%3Fquery%3DPoon%2Bbanking

Rogers, E.M. (1995). *Diffusion of Innovation*. 4ed. New York: The Free Press. Retrieved on April 28, 2019, from: <https://www.d.umn.edu/~lrochfor/ireland/dif-of-in-ch06.pdf>

Rogers, E.M. (1983). *Diffusion of Innovation*. 3ed. New York: The Free Press. Retrieved on April 28, 2019, from: <https://teddykw2.files.wordpress.com/2012/07/everett-m-rogers-diffusion-of-innovations.pdf>

Safeena, R. (2013). Combination of TAM and TPB in Internet Banking Adoption. *International Journal of Computer Theory and Engineering*, Vol. 5, No. 1. Retrieved on April 28, 2019, from: <http://www.ijcte.org/papers/665-I282.pdf>

Sanchez,C., & Gallie, B. (2010). Adoption Of Internet Banking: Evidence From France, *International Journal of Management and Marketing Research*, Vol. 3, ISS.3, pp. 107-117. Retrieved on April 28, 2019, from: <http://www.theibfr2.com/RePEc/ibf/ijmmre/ijmmr-v3n3-2010/IJMMR-V3N3-2010-8.pdf>

Scornavacca, E., & Barnes, S.J. (2004). Mobile banking in Germany: A strategic perspective. *International Journal of Electronic Finance*, Vol.1, ISS. 3, pp. 304-320. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/5171726_Mobile_banking_in_Germany_A_strategic_perspective

Sikdar, P., Kumar, K.,& Makkad, M. (2015). Online banking adoption: A factor validation and satisfaction causation studyin the context of Indian banking customers. *International Journal of Bank Marketing*, Vol. 33, ISS.6, pp.760 - 785. Retrieved on April 28, 2019, from: https://www.researchgate.net/publication/283302084_Online_banking_adoption_A_factor_validation_and_satisfaction_causation_study_in_the_context_of_Indian_banking_customers

Shah, M.H. & Siddiqui, F.A. (2006). Organizational critical success factors in adoption of e- banking at the Woolwich bank. *International Journal of Information Management*, Vol. 26, ISS. 6, pp. 442 - 456. Retrieved on April 28, 2019, from: <https://www.deepdyve.com/lp/elsevier/organisational-critical-success-factors-in-adoption-of-e-banking-at-14L7InmV19?articleList=%2Fsearch%3Fquery%3De-%2Bbanking%2Bat%2Bthe%2BWoolwich%2Bbank>

Sharma, Shraddha; Dixit, Savita; Jain, Praveen; Shah, K., & Vishwakarma, R. (2007). Statistical evaluation of hydrobiological parameters of Narmada River water at Hoshangabad City, India. *Environmental Monitoring and Assessment*, Vol. 143, ISS. 3, pp. 195-202. Retrieved on April 28, 2019, from: <https://www.deepdyve.com/lp/springer-journals/statistical-evaluation-of-hydrobiological-parameters-of-narmada-river-a4anw2eWNc?articleList=%2Fsearch%3Fquery%3DDixit%2Bonline%2Bbanking>

Smith, A.D. (2006). Exploring security and comfort issues associated with online banking. *International Journal of Electronic Finance*, Vol. 1, No.1, pp. 18 - 49. Retrieved on April 28, 2019, from: <https://www.deepdyve.com/lp/inderscience-publishers/exploring-security-and-comfort-issues-associated-with-online-banking-jKg0YyVRmm?articleList=%2F-search%3Fquery%3DExploring%2Bsecurity%2Band%2Bcomfort%2Bissues%2Bassociated%2Bwith%2Bonline%2Bbanking>.

Smith, C., & Kumar, A. (2018). Crypto - Currencies -an introduction to not - so funny money. *Journal of Economic Surveys*, Vol. 32, ISS. 5, pp. 1531-1559. Retrieved on 23 September 2019 from:<https://www.deepdyve.com/lp/wiley/crypto-currencies-an-introduction-to-not-so-funny-moneys-m8XF3ggsop?articleList=%2Fsearch%3Fquery%3Dcrypto%2Bcurrencies>

Suh, B. & Han, L. (2002). Effect of Trust on customer acceptance of Internet Banking. *Electronic Commerce Research and Application*, Vol. 1, pp. 297-363. Retrieved on April 28, 2019, from: <http://iranarze.ir/wp-content/uploads/2015/02/customer-acceptance-of-Internet-banking.pdf>

Szopiński, T. (2016). Factors affecting the adoption of online banking in Poland. *Journal of Business Research*, Vol. 69, pp. 4763–4768. Retrieved on: April 28, 2019, from: https://www.researchgate.net/publication/301773393_Factors_affecting_the_adoption_of_online_banking_in_Poland

Tan, M. & Teo, T.S.H. (2000). Factors Influencing the Adoption of Internet Banking. *Journal of the association for an information system*, Vol.1, ISS. 5, pp. 1-44. Retrieved on April 28, 2019, from: http://130.18.86.27/faculty/warkentin/SecurityPapers/Leigh/Zafar-Clark2009%20Other%20References/TanTeo2000_JAIS1_FactorsInfluencingInternet-BankingAdoption.pdf

Tornatzky, L. G., & Klein, K. J. (1982). Innovation Characteristics and Innovation Adoption-Implementation: A Meta-Analysis of Findings. *IEEE Transactions on Engineering Management*, Vol. 29, pp. 28-45. Retrieved on September 20, 2019, from: https://www.researchgate.net/publication/238746548_Innovation_Characteristics_and_Innovation-Adoption-Implementation_A_Meta-analysis_of_findings

Trafimo, D. (2009). *The Theory of Reasoned Action*. New Mexico State University: Theory and Psychology. Vol.19, ISS. 4, pp. 501-508. Retrieved on 11, September 2019 from <https://www.deepdyve.com/lp/sage/the-theory-of-reasoned-action-w30AV434NP?articleList=/search?query=theory+of+reasoned+actions>

Trigueros, R., Med, J., & Hidalgo, F. (2017). Qualitative and quantitative research instruments. Retrieved on April 30, 2019, from: https://www.researchgate.net/publication/323014697_QUALITATIVE_AND_QUANTITATIVE_RESEARCH_INSTRUMENTS_Research_tools

Vallerand, R. & Pelletier, L. (1992). AJZEN AND FISHBEIN THEORY OF REASONED ACTION AS APPLIED TO MORAL BEHAVIOR - A CONFIRMATORY ANALYSIS. *Journal of Personality and Social Psychology*. Vol. 62, ISS. 1, pp. 98-109. Retrieved on May 9, 2019, from: https://www.researchgate.net/publication/297233872_AJZEN_AND_FISHBEIN_THEORY_OF_REASONED_ACTION_AS_APPLIED_TO_MORAL_BEHAVIOR_-_A_CONFIRMATORY_ANALYSIS

Volksbank Wien AG annual report (2018). Retrieved on September 10, 2019: https://www.volksbankwien.at/m101/volksbank/zib/downloads/ir/2018_10_vbw_co_published.pdf

Walker, R.H. & Johnson, L.W. (2006). Why consumers use and do not use technology-enabled services. *Journal of Services Marketing*, Vol. 20, No. 2, pp.125–135. Retrieved on April 30, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/why-consumers-use-and-do-not-use-technology-enabled-services-0XiVL0tnB5?articleList=%2Fsearch%3Fquery%3DWhy%2Bconsumers%2Buse%2Band%2Bdo%2Bnot%2Buse%2Btechnology-enabled%2Bservices>.

Walliman, N. (2011). *Research Methods: The basics*. Routledge:Park Square, Milton Park, Abingdon, Oxon OX14 4RN. Retrieved, September 16, 2019 from: https://edisciplinas.usp.br/pluginfile.php/2317618/mod_resource/content/1/BLOCO%20_Research%20Methods%20The%20Basics.pdf. (2011). *Research Methods: The basics*. Routledge:Park Square, Milton Park, Abingdon, Oxon OX14 4RN. Retrieved, September 16, 2019 from: https://edisciplinas.usp.br/pluginfile.php/2317618/mod_resource/content/1/BLOCO%20_Research%20Methods%20The%20Basics.pdf

Wisdom J, & Creswell JW. (2013). *Mixed Methods: Integrating Quantitative and Qualitative Data Collection and Analysis While Studying Patient-Centered Medical Home Models*. Rockville, MD: Agency for Healthcare Research and Quality. Publication No. 13-0028-EF. Retrieved on May 9, 2019, from: <https://pcmh.ahrq.gov/page/mixed-methods-integrating-quantitative-and-qualitative-data-collection-and-analysis-while>

Yang, J. & Ahmed, K.T. (2009). Recent trends and developments in e-banking in an under-developed nation – an empirical study. *International Journal of Electronic Finance*, Vol. 3, ISS. 2, pp. 115 - 132. Retrieved on April 30, 2019, from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.508.841&rep=rep1&type=pdf>

Yiga, C., & Kyung, J. (2016). Toward understanding the importance of trust in influencing Internet banking adoption in Uganda. *Information Development*, Vol. 32, ISS. 3, pp. 622-636. Retrieved on April 28, 2019, from: <https://www.deepdyve.com/lp/sage/toward-understanding-the-importance-of-trust-in-influencing-internet-blqMdu2niN?articleList=%2Fsearch%3Fquery%3DYiga>

Yu, P., Ling., Balaji, M., S.& Khong, K., W. (2015). Building trust in internet banking: a trustworthiness perspective. *Industrial Management & Data Systems*, Vol., 115, 2, pp. 235 - 252. Retrieved on April 28, 2019, from: <https://www.deepdyve.com/lp/emerald-publishing/building-trust-in-internet-banking-a-trustworthiness-perspective-qO6E0e8RR7?articleList=%2Fsearch%3Fquery%3DInternet%2Bbanking%2Btrus>

Zaabi, K., & Tubaishat, A. (2015). Security Awareness Program for Customers Using Online Banking. *GSTF Journal on Computing (JoC)*. Vol.46, ISS. 3, pp. 80- 89. Retrieved on September, 7, 2019, from : <https://www.deepdyve.com/lp/springer-journals/security-awareness-program-for-customers-using-online-banking-T9VwtPB12y?>

Zolait, A., & Sulaiman, A. (2008). Incorporating the Innovation Attributes Introduced by Rogers Theory and Theory of Reasoned Action: An Examination of Internet Banking Adoption in Yemen. *Computer and Information Science*, Vol. 1,ISS. 1, pp. 36 - 51. Retrieved on September, 7, 2019, from: https://www.researchgate.net/publication/220099496_Incorporating_the_Innovation_Attributes_Introduced_by_Rogers'Theory_into_Theory_of_Reasoned_Action_An_Examination_of_Internet_Banking_Adoption_in_Yemen

Appendices

Appendix 1: Interview Questions for individuals who use online banking

1. Introduction of the interviewee (Name, age, gender)
2. Do You have a bank account? If yes, please specify the bank.
3. Do You have an online banking? If yes, please specify the process of opening on-line banking account.
4. Did you get assistance from the bank worker?
5. For how long do You use online banking?
6. What do you like/dislike in online banking?
7. Do You find online banking easy to use?
8. Do You find online banking useful?
9. How do You find the navigation of online banking?
10. Do You believe that 'online banking' protects information about Your transactions?
11. Do You trust in the bank that serves Your online banking account?
12. What do You think bank workers should do, in order to attract non-adopters to start using online banking?

Appendix 2: Interview Questions for individuals who do not use online banking

1. Introduction of the interviewee (Name, age, gender)
2. Do You have a bank account? If yes, please specify the bank.
3. Please, describe the opening process of the bank account
4. Have You heard about online banking?
5. Are there reasons that stop you from opening an online banking account? If yes, please describe them.

Appendix 3: Participants

Name of participant	Age	Position	Bank
Sofia Zhvaniia	18 - 24	Student	Erste bank
Alexander Numrich	35 - 44	Consultant	UniCrediz Bank Austria
Adrian Burry	45 - 54	Vice President	Raiffeisen Bank
Natalia Fenaz	24 - 34	Student	Erste Bank
Diana Palnychenko	18 - 24	Working at Modul Univeristy	Erste Bank, Raiffeisen Bank
Pavel Agababian	35 - 44	Vice president/ currently doing MBA	Erste Bank
Lepava Jovich	35 - 44	COO of Remax Europe	Raiffeisen Bank
Oleksandr Svishchevskyi	45 - 54	Shareholder of Tatra Bank (Slovakia)	Raiffeisen Bank, UniCredit Bank Austria
Michael Straube	24 - 34	Working at Modul Univeristy	Erste Bank
Oksana Zhvaniia	45 - 54	Housewife	Erste Bank
Artem Raievskyi	24 - 34	Working at Sibur	Erste Bank
Kurt Lukas	35 - 44	Executive Vise President	Bank Austria
Mehar Gheema	24 - 34	Student	Erste Bank
Valeria Agababian (non-adopter)	24 - 34	Housewife	Erste Bank
Michael P. (Non - adopter)	45 - 54	CEO	Did not enclouse

