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Elderly people's emotions in online banking

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ABSTRACT:

Online banking has become a mainstream channel to utilize not only in one's banking services, but as a strong authentication method to other crucial services, such as tax administration or health services. This has created a need for almost all citizens in Finland to have online bank accounts. However, not everyone has digital capabilities to use online banking, vulnerable consumers might be struggling to use digital services, especially the elderly. The aim of this master's thesis is to understand the user experience and the emotions of the elderly in online banking. This is done by utilizing the research question: "How does the elderly feel about online banking?". The purpose is to contribute to existing theory and more importantly give practical suggestions to banks and possibly other digital service providers, how they could better accommodate their elderly customer base, which in turn could create more equal atmosphere in online banking and in society.

After the introduction to the topic, this thesis establishes the theoretical framework, as well as introduces the reader to the previous literature completed on this topic, aiming to give context to the reader, as well as comprehension to the topic overall. The literature review includes the Wheel of Emotions, technology acceptance models TAM and UTAUT, along with aspects that could affect the feelings of the elderly in online banking, perceived risk, trust and security. Additionally, the previous literature discusses how vulnerable users, such as the elderly have previously felt in using digital services or online banking. The methodology in this thesis utilizes qualitative research method, more importantly a thematic interview. The justifications and the definitions for the research method are introduced with the data analyse method chosen for this thesis.

The key findings indicate the importance of emotions affecting attitudes to the usage of online banking. The ones with the better experiences and emotional reactions, felt more positive feelings regarding online banking, such as joy, acceptance and trust. Whereas negative experiences had the opposite effect, causing emotions such as annoyance, apprehension and even fear and anger. All the respondents felt that online banking was useful, which was the main factor in usage, however the ease of use was dependant on the participant. Additionally, social influence and facilitating conditions were an important factors in adapting online banking. Cyber security threats were not considered as a deciding factor on feelings regarding online banking.

The trustworthiness of this study is discussed. However, there are limitations especially regarding the sample size of the participants and the geographical limitation being tied to Finland. These are mainly due to the nature of the study, budget and time restrictions. These limit the implications that can be made from the findings. Future research done in this topic could be conducted on a bigger sample size or between countries and cultures. Additionally, future research should focus on the consequences of the popularization of generative artificial intelligence in online banking services and assistance.

KEYWORDS: user experience, emotions, tam, utaut, elderly, online banking

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TIIVISTELMÄ:

Verkkopankeista on tullut keskeinen osa pankkiasiointia. Tämän lisäksi sähköisiä pankkitunnuksia käytetään vahvan tunnistautumisen välineenä moniin muihin kriittisiin palveluihin, kuten verohallinnon ja terveystietojen käyttöön. Tämän myötä lähes kaikilla Suomen kansalaisilla on tarve sähköisille pankkipalveluille. Verkkopankkien käyttö vaatii kuitenkin digitaalisia taitoja, mitä kaikilla kansalaisilla ei ole. Haavoittuvassa asemassa olevat kuluttajat, erityisesti ikäihmiset voivat kohdata haasteita digitaalisten palveluiden käytössä. Tämän pro gradu -tutkielman tavoitteena on ymmärtää ikäihmisten kokemuksia ja tunteita verkkopankin käyttäjinä. Tutkimusta ohjaa tutkimuskysymys: *”Miltä verkkopankin käyttö ikäihmisistä tuntuu?”*. Tutkielman tarkoituksena tuottaa lisäymmärrystä olemassa olevaan teoriaan, sekä ennen kaikkea tarjota käytännön suosituksia pankeille, sekä mahdollisesti muille digitaalisia palveluita tarjoaville tahoille, miten ikäihmisiä voitaisiin huomioida paremmin digitaalisten palveluiden asiakkaina. Tämä voisi edistää yhdenvertaisuutta digitaalisessa asiointissa, mutta myös yhteiskunnassa laajemmin.

Johdannon jälkeen tutkielmassa esitellään teoreettinen viitekehys, sekä aiempi kirjallisuus, joiden tarkoituksena on antaa lukijalle konteksti tutkimukseen, sekä laajempaa ymmärrystä aiheesta. Kirjallisuuskatsaukseen sisältyy tunteiden pyörä (Wheel of Emotions), teknologian hyväksymis- mallit TAM ja UTAUT, sekä tekijöitä, kuten koettu riski, luottamus ja turvallisuus, nämä voivat vaikuttaa ikäihmisten näkemyksiin ja kokemuksiin verkkopankeista. Aiempi tutkimus käsittelee, miten haavoittuvat käyttäjät, kuten ikäihmiset ovat kokeneet digitaalisten palveluiden ja verkkopankin käytön. Tutkimus toteutettiin laadullisena tutkimuksena ja aineistonkeruumenetelmänä käytettiin teemahaastattelua. Tutkimusmenetelmä ja aineiston analyysimenetelmä esitellään ja perustellaan metodologia luvussa.

Tutkimuksen keskeiset tulokset osoittavat, että tunteilla on merkittävä vaikutus asenteisiin verkkopankin käyttöä kohtaan. Henkilöt, joilla oli positiivisia kokemuksia, suhtautuivat verkkopankin käyttöön positiivisemmin, mikä johti positiivisiin tunteisiin, kuten iloon, luottamukseen ja hyväksyntään. Kun taas voimakkaat negatiiviset tunteet vaikuttivat päinvastaisesti, johtaen epävarmuuteen, ärsyyntymiseen ja jopa vihaan tai pelkoon. Kaikki vastaajat kokivat verkkopankin hyödylliseksi ja tämä näyttäytyi tärkeimpänä käyttöön vaikuttavana tekijänä. Sen sijaan kokemus helppokäyttöisyydestä vaihteli osallistujien välillä. Sosiaaliset vaikutteet ja edistävät tekijät, kuten tukihenkilöt oli myös koettu tärkeiksi tekijöiksi. Kyberturvallisuuteen liittyviä uhkia ei sen sijaan pidetty ratkaisevana tekijänä verkkopankkia koskevilla tuntemuksissa. Lopuksi tutkimuksen luotettavuutta ja rajoitteita arvioidaan. Erityisesti osallistujien pieni otoskoko, sekä tutkimuksen rajautuminen Suomeen rajoittavat tulosten yleistettävyyttä. Jatkotutkimuksissa olisi hyödyllistä tarkastella generatiivisen tekoälyn yleistymisen vaikutuksia verkkopankkipalveluihin ja digitaaliseen asiakastukeen.

AVAINSANAT: käyttäjäkokemus, tunteet, tam, utaut, ikäihmiset, verkkopankki

Contents

1	Introduction	7
1.1	The Purpose of the Study	8
1.2	The Structure of the Thesis	9
2	Literature Review	11
2.1	User Experience and Technology Adoption	11
2.1.1	User Experience (UX)	12
2.1.2	Wheel of Emotions	12
2.1.3	Technology Acceptance Models	14
2.2	Previous Literature	15
2.2.1	Emotional Responses While Using Digital Services	16
2.2.2	Barriers to Online Banking Use Through the Lense of UTAUT and TAM	16
2.2.3	Risk, Trust and Security	17
2.2.4	Vulnerable Consumers	19
2.2.5	Elderly Users Emotions in Regards to Digital Services	20
2.2.6	Positive Experiences on Motivation	21
3	Research Methodology	25
3.1	Qualitative Research Method and Thematic Interview	25
3.2	Sample	27
3.3	Data Gathering	28
3.4	Thematic Analysis	30
4	Research Findings	33
4.1	Emotional Responses to Online banking	33
4.1.1	Emotions Influencing User Experience	34
4.1.2	Perceived Security and Trust	36
4.1.3	Perceived Control and the Fear of Making Errors	37
4.2	External Factors Influencing Emotions and Experience	39
4.2.1	Social Influences and Facilitating Conditions	39
4.2.2	The Role of the Bank	40

4.2.3	Future Expectations	43
4.3	Emotional responses	43
5	Discussion	45
5.1	Contributions to Theory	45
5.2	Contributions to Practice	47
5.3	Trustworthiness of the Study	48
5.4	Limitations and Further research	50
	References	52
	Appendices	64
	Appendix 1. Thematic interview	64

Pictures

Picture 1. Wheel of Emotions (Plutchik, 1980).....	13
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Figures

Figure 1. Technology Acceptance Model (TAM) (Davis, 1989).	14
Figure 2. UTAUT-model (Venkatesh et al., 2003).	15
Figure 3. Thematic Analysis (Braun & Clarke 2006).	31
Figure 4. Modified Wheel of Emotions (Plutchik, 1980).	44

Tables

Table 1. Participants.....	28
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1 Introduction

Since the turn of the 21st century online banking has experienced rapid growth in multiple countries, thus transforming traditional banking industry (Lichtenstein & Williamson, 2006, p. 50). With the development of online banking financial institutions and banks are able to cut down operational costs, while maintaining customer satisfaction, as online banking can provide ease, flexibility and speed (Abu-Taieh et al., 2022, p. 2; Ganeshan and Uthandu, 2021, p. 52).

Traditional banking services such as brick and mortar or face-to-face interactions are frequently replaced by online banking services, as the popularity of the internet and mobile devices increases (Nam et al., 2016, p. 696). In addition, to traditional web-based banking, online banking has transitioned to mobile applications, which can lead to new challenges for the banks, when it comes to building significant relationships with their customers (Arcand et al., 2017, p. 1069). Mobile banking use has increased steadily with the rise of smartphone use (Sharma & Sharma, 2019, p. 65). In 2024, 4.24 billion people worldwide are estimated to be active mobile internet users (Statista, 2025). Online banking has become increasingly popular, International Telecommunication Union (2024) estimates that approximately 68% of the world's population is using the internet in 2024 and according to Eurostat (2024) 67,24% of the population between ages 16-74 in Europe using online banking in 2024. In Finland this number is 94,99 %, which is one of the higher countries just behind Denmark, Norway and the Netherlands.

With technological advancements the relationship between customers and providers has changed (Van Doorn et al., 2017). Digitalisation might lower the costs for contemporary banks, however it is crucial to comprehend the repercussion of branch closing, that leads to the use of self-assisted online banking (Nam et al., 2016, p. 696). While many users feel the efficacy and convenience that internet banking brings to their mundane tasks (Ganeshan & Uthandu, 2021, p. 52), some might be left out due to insecurity or uncertainty. A distinct group is the elderly.

Besides the banking services, authentication with banking information has become a significant tool in Finland, where access to many official sites, such as personal health or tax information is behind online banking authentication. Online banking information has almost become an electrical personal identification (Hyppönen et al., 2023, p. 124). The importance of inclusive online banking services is especially important in a society like Finland, where many essential services require online banking authentication. Therefore, if elderly users experience exclusion it might lead to a broader inequality in society.

It is important to highlight that significant differences in digital capabilities and attitudes between pre-retirees (55-64 years) and seniors (65+ years) exists (Rajaobelina et al., 2021, p. 96). Although elderly can be defined as being 65+ years old (Tilastokeskus, 2003), this thesis focuses on seniors 75+ as this makes a bigger distinction between older adults who might have quite good digital capabilities and the elderly.

1.1 The Purpose of the Study

The aim of this study is to illustrate the deciding factors the elderly feel when deciding to implement online banking and why keep using it. The research question approaches this by trying to define “How does the elderly feel about online banking?”. As online banking can be considered almost a crucial digital service, it important to discover, what aspects provide relief and what are considered especially difficult.

The background behind this study came from seeing as a bank employee, how distressing user experience in online banking can be for some customers, especially for the elderly. When users struggle with digital services, it can lead to extreme negative emotions such as anger and fear. This study was done via conducting a thematic interview, where eight elderly people were interviewed on their experiences and emotions regarding online banking. This study contributes to excising literature with providing research into elderly people’s perceptions, emotions and feelings on online banking in Finland. This thesis highlights the importance of understanding the affect emotions have on usage of online banking. Emotions, such as fear, confidence and trust

shape attitudes towards online banking in elderly users. Additionally, findings in this study suggest that social support and facilitating conditions are important factor in shaping feelings and attitudes. These findings are compiled into theoretical and practical implications. Furthermore, the practical implications suggest that understanding these experiences is important, as it provides banks with deeper comprehension into creating inclusive and better services that accommodate elderly users.

1.2 The Structure of the Thesis

The thesis structure is as follows. After the introduction, the concepts of this thesis are introduced in chapter two, the literature review. These include user experience, and aspects of emotions, technology acceptance and technology acceptance models, online banking, as well as vulnerable customers, elderly. These aim to provide the reader with comprehensive understanding of the topic and a theoretical framework for the research. Additionally, the literature review introduces previous literature and research done and surrounding this topic.

Chapter three provides the methodology for this research, it discusses the decision to choose qualitative research method for this study. As this study aims to understand the perspectives of the elderly in depth, a qualitative research method was applied. The selected methodology: thematic interview is explained and the use justified. The research structure and the interview method are described to the reader. The empirical data was collected via thematic interview, where 8 interviewees participated. The research method allowed for flexibility, while illustrating the views of the elderly comprehensively. Each interview was carefully analysed, with Braun & Clarke (2006) thematic analysis.

Chapter four presents the empirical findings of the study. The findings are organised according to the themes identified through thematic analysis and supported with quotations from the interviews. The chapter aims to illustrate how elderly users

experience online banking and what kinds of emotions, attitudes and concerns emerged from the interviews.

Chapter five aims to give a comprehensive conclusion to the thesis, where the implications to theory and practise are discussed. In addition, this chapter discusses the ethical implications, the trustworthiness of the study as well as the limitations and future research possibilities.

2 Literature Review

The literature review of this research aims to provide a comprehensive background and theoretical framework, which introduces the subject to the reader. The key concepts are introduced and defined, as well as explained in relation to the study. The first chapter introduces the theoretical background on user experience (UX) as a phenomenon, as well as technology acceptance model (TAM), unified theory of acceptance and use of technology (UTAUT) and Plutchik's Wheel of Emotions. In addition, the first chapter provides understanding on concepts such as perceived security and trust. The models introduced in this chapter are part of the theoretical framework, through which this research has been conducted. In addition, this chapter provides a view on how these theoretical models have been applied in previous studies, which have illustrated the usage of online banking among the elderly users. In addition to TAM and UTAUT, this chapter discusses other aspects affecting online banking usage, such as trust, perceived security and risk.

The second chapter gives understanding on previous literature done on online banking and elderly customers. Moreover, it provides insight on previous studies on how elderly and vulnerable people use and feel about online banking, and the internet and how these experiences can be made better.

2.1 User Experience and Technology Adoption

This chapter introduces the theoretical framework of this thesis to the reader. It defines the basis of user experience, the Wheel of Emotions, which is used as a base to illustrate the emotions found in the study. Additionally, this chapter introduces TAM (Davis, 1989) and UTAUT (Venkatesh et al., 2003).

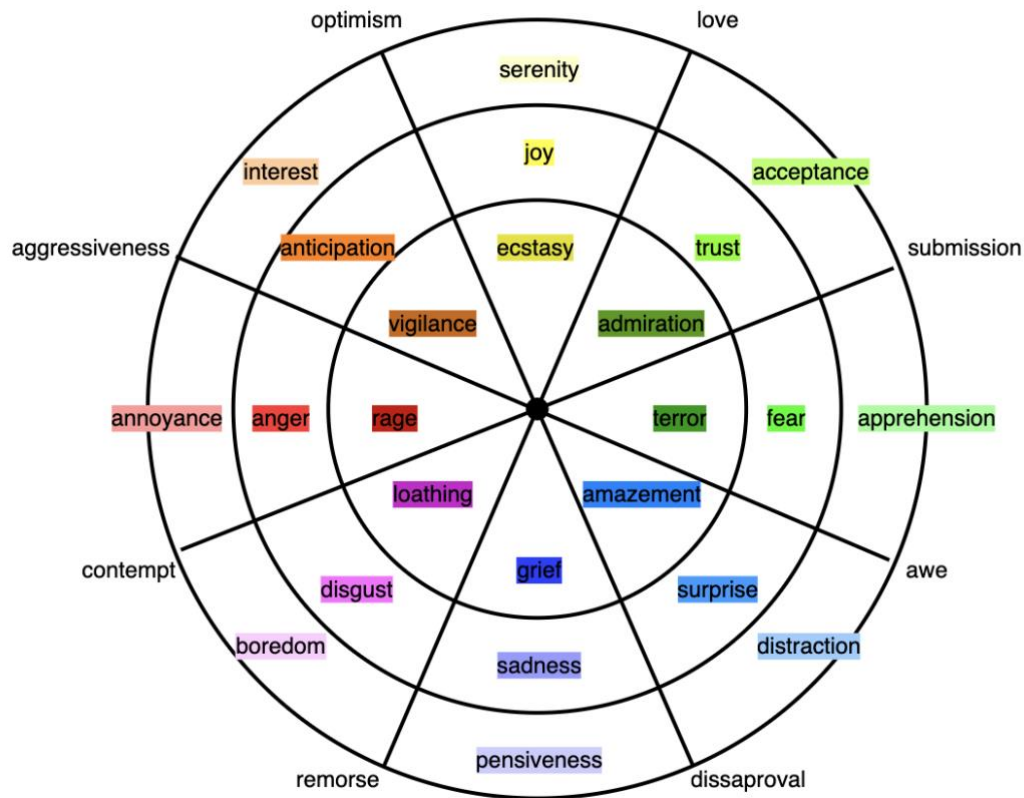
2.1.1 User Experience (UX)

The Experience Professional Association (The UXPA, n.d.) defines user experience (UX) as creating tools and products that meet the users' needs, while having high level of usability (easy to use), however noting that there are multiple definitions for user experience, by different user experience professionals. User experience firstly must meet the needs of the customer, additionally it is important to produce products that are delightful to own and to use (Nielsen & Norman, 1998). While usability focuses on the user's ability to achieve a specific goal, user experience provides insight into non-utilitarian aspects, such as user affect, sensation and value of such interactions in everyday life (Law et al., 2009, p. 719; The UXPA, n.d.) Understanding user experience as a concept is crucial for developing user centered suggestions to companies or organisations. User experience can be approached from emotional side as well as through technology acceptance models, which are introduced in the following chapters.

2.1.2 Wheel of Emotions

Plutchik's wheel of emotions (1980) is a useful framework to map the emotions arising from the elderly, while adapting and using online banking. As customer experience is deeply affected by emotions (Manasa et al., 2025, p. 811). The wheel of emotion (picture 1.) utilizes colours to create a pattern where emotions are colour coded. When combining colours new colours are created and according to Plutchik (1980) combining emotions new emotions are created. The wheel of emotion helps to describe mixed emotions, which otherwise might be hard to portray.

Our surroundings affect our feelings, as they are a response to a situation or an interaction, the main purpose is to keep us safe (Plutchik, 2001, p. 346). Predicting possible scenarios and outcomes is part of keeping us safe, emotions such as fear creates a rapid unconscious process where the brain signals the actions needed, to bring back homeostasis (Plutchik, 2001, p. 347-348).



Picture 1. Wheel of Emotions (Plutchik, 1980).

According to Plutchik (1980) The primary emotions described in the Wheel of Emotion (see Picture 1.) are joy, trust, fear, surprise, sadness, disgust, anger and anticipation. Joy being the feeling of happiness and well-being. Trust is the feelings of safety and confidence. Fear regarding uncertainty and threat. Surprise is associated with a reaction to unexpected events. Sadness can be related to feelings of disappointment, loss or discomfort. Disgust relates to rejection, aversion or something unpleasant. Anger is feelings of frustration, irritability or hostility. Anticipation refers to expectation of the future. Emotional reactions are important to understand, as they affect how users experience digital services, technology acceptance models, such as TAM and UTAUT help to structure how these experiences influence behaviour.

2.1.3 Technology Acceptance Models

This chapter introduced technology acceptance models, to comprehend why users do or do not adopt technology. TAM (technology acceptance model) developed by Davis (1989) utilizes Perceived Usefulness and Perceived Ease of Use to understand users' willingness to adopt technology. Perceived Usefulness is considered an attribute, which determines whether the user considers the application or product helpful (Davis, 1989, p. 320). In contrast, Perceived Ease of Use refers to the extent to which the user perceived that interaction with the system does not require significant effort (Davis, 1989, p. 320). Figure 1. illustrates how Perceived Usefulness and Perceived Ease of use, affect Attitude Towards using, which in turn leads to Intention to Use, and Actual System Usage.

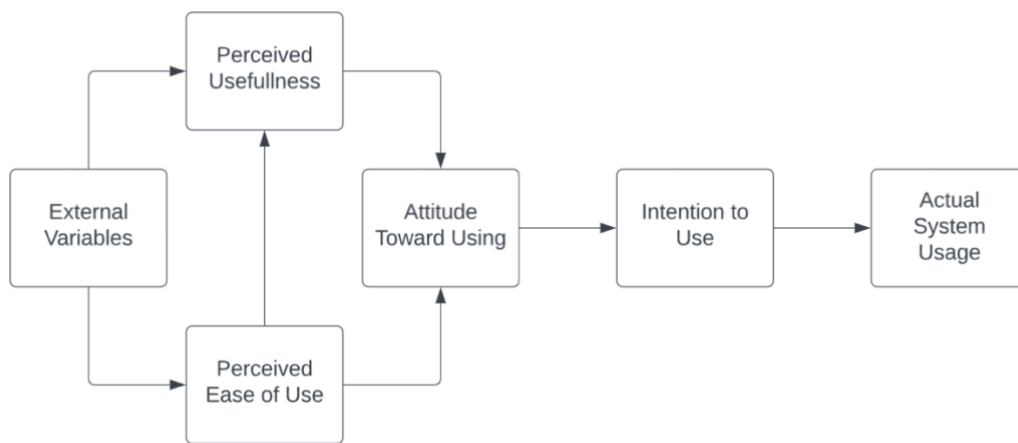


Figure 1. Technology Acceptance Model (TAM) (Davis, 1989).

TAM can be considered a generally applicable model to use, when researching usage of online banking (Eriksson et al., 2005, p. 20). In addition, UTAUT (unified theory of acceptance and use of technology) by Venkatesh et al. (2003) is used as a framework in this research. UTAUT was based on TAM, however in contrast to TAM, UTAUT considers constructs such as performance expectancy, which refers to the perceived benefits provided to the user by the system used. Effort expectancy, the perceived amount of effort required to use the system. Social influence, the degree of importance which other people believe the usage of the system to be. Facilitating conditions, being the

availability of technical help, if needed to support the use of the system. Furthermore, UTAUT emphasises gender, age, experience and voluntariness of use, these constructs and factors combined effect the users Behavioural Intention as well as Use Behaviour (see Figure 2.). As this study emphasises age as a construct, it is important to utilize framework such as UTAUT. According to UTAUT we can see that, age should be a factor affecting all the constructs defined.

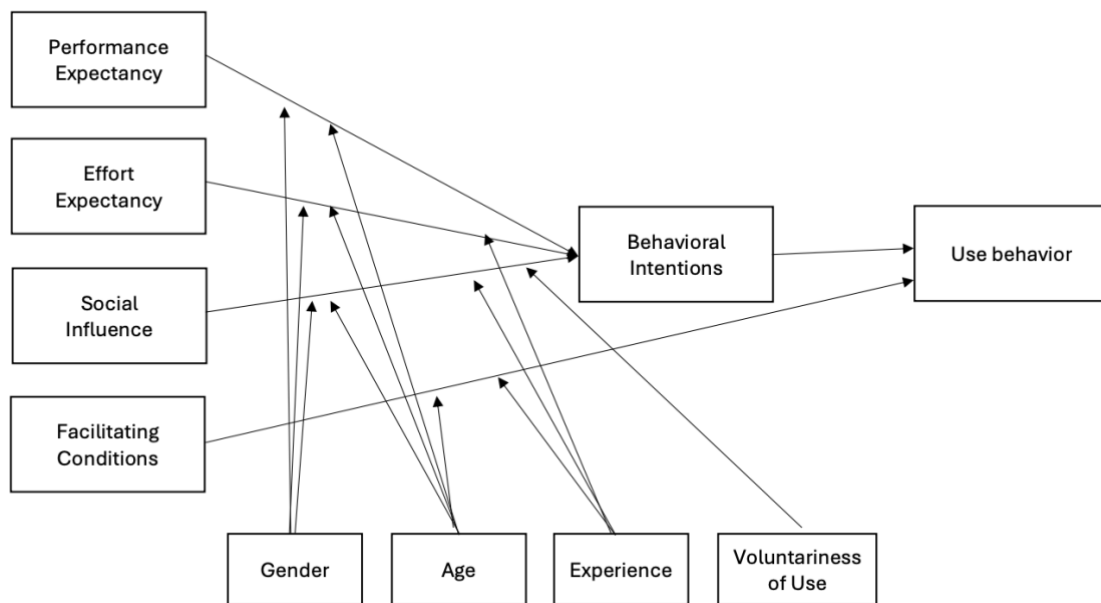


Figure 2. UTAUT-model (Venkatesh et al., 2003).

2.2 Previous Literature

This chapter discusses the previous literature conducted in this area of research. It aims to provide the reader with a comprehensive view on the research conducted, thus preparing the reader before the findings are introduced. While technologies are continuing to develop and bringing opportunities for user's, companies and governments, it is important to understand whom might be at risk of falling behind in society. Furthermore, it is necessary to acknowledge the complex environment of rapid advancements in information technology, as well as the growing elderly population (Cui & Xu, 2022, p. 2).

2.2.1 Emotional Responses While Using Digital Services

Emotions are not born in a void, but are a response to situations or scenarios, often motivating actions (Plutchik, 2001, p. 346). Previous studies illustrate that emotions play a significant role in user experiences (Chen, 2020, p. 1470; Partala & Saari, 2015, p. 390). Therefore, understanding the emotional responses of the elderly, formed during the use of technology is crucial to successfully use and integrate it (Cohen Elimelech et al., 2025, p.9). For example, the use of digital health services in older adults caused a variety of strong emotional reactions, from joy to frustration (Valkonen & Kujala, 2024, p. 143). Although, many users experienced joy from the autonomy gained, some felt fear, anger and embarrassment from a negative user experience, thus leading to abandon the digital service (Valkonen & Kujala, 2024, p. 141). However, it was also concluded that lack of self-confidence and self-efficacy with digital health services, brought out negative emotional user experiences (Valkonen & Kujala, 2024, p. 141). Additionally, individual differences in frustration tendency has a significant effect on experiencing frustration in emotional user experiences (Jokinen, 2015, p. 73).

2.2.2 Barriers to Online Banking Use Through the Lense of UTAUT and TAM

Previous studies illustrate, how performance expectancy shows an influence on intention to use online banking (Hanif & Lallie, 2021, p. 10; Martins et al., 2014, p. 10). Regarding effort expectancy, empirical findings differ. Some find that effort expectancy and intention to use online banking applications has a significant relationship (Gaitan et al., 2015, p. 12; Martins et al. 2014, p. 10), while others do not support the hypothesis (Hanif & Lallie, 2021, p. 10). In addition, social influence was found to be a factor, which affected the behavioural intention to use online banking (Abu-Taieh et al., 2022, p. 21; Martins et al., 2014, p. 10) Facilitating conditions have not been found as a significant factor to affect the behavioural intention to use online banking (Abu-Taieh et al., 2022, p. 21; Martins et al., 2014, p. 10).

Older users might consider performance expectancy higher when assessing online banking than younger users (Merhi et al., 2021, p. 1162). Comparing the adaptation of online banking in the UK and in Lebanon, age is a determinant factor in both, however the significance of gender was exclusive to Lebanon (Merhi et al., 2021, p. 1163). Hence, it is important to understand the cultural context where the study is conducted and how it relates to this thesis.

Previous research utilizing TAM illustrates perceived usefulness as a main factor when studying users' willingness to adapt online banking and positive user experience. Perceived ease of use influenced directly through perceived usefulness but did not act as a main factor on behavioural intention to use online banking (Cheng et al., 2006, p. 1567; Eriksson et al., 2005, p. 19; Nasri & Charfeddine, 2012, p. 9). Thus, being consistent with the original TAM created by Davis (1989), stating that perceived usefulness gives the users' the intel whether the application is beneficial for their needs, whereas perceived ease of use determines, if the use of application requires too much effort to use. However, perceived ease of use cannot compensate for an application, which users perceive useless (Eriksson et al., 2005, p. 8).

2.2.3 Risk, Trust and Security

Risk, trust and security have become crucial aspects when researching online banking adaptation (Khalilzadeh et al., 2017, p. 463). Hence, it is important to examine online banking not only from the view of technology acceptance models, but also from the perspective of service quality variables such as trust and satisfaction (Arcand et al., 2017, p. 1069). It is also important to understand perceived risks, trust and security, as perception often affects the subjective experience (Bruner & Postman, 1949, p. 222).

Perceived risk is generally considered as felt uncertainty, where the consumer might face negative consequences of using a service or a product (Featherman & Pavlou, 2003, p. 461), in this instance online banking. Perceived risk was formally defined by Bauer (1967) as "a combination of uncertainty plus seriousness of outcome involved". Integrating TAM

with perceived risk can be useful when trying to comprehend consumer behaviour, as potential risks might create anxiety or discomfort around adaptation of a service (Featherman & Pavlou, 2003, p. 469).

In Finland perceived risk did not explain non-adoption or postponement of online banking (Laukkanen, 2016, p. 2437). However, due to the intertwined relationship between risk and trust (Meyer et al., 1995, p. 709) in high trusting societies such as Finland (OECD, 2024), trust in institutions, or in this case banks is high, hence the perceived risks are low (Yousafzai et al., 2003, p. 856). Furthermore, Laukkanen (2016, p. 2437) discovered that while age and gender appear to affect adoption or rejection of online banking, income was not a significant factor. These results may be affected by older people having higher incomes, but also high-income equality in Finland (Laukkanen, 2016, p. 2437; OECD, 2022).

However, other studies contradict this statement, in a study conducted in the UK, the results differed and modified UTAUT illustrated how perceived cyber security risk had a significant impact on participants over the age 55 (Hanif & Lallie, 2021, p. 10). Similarly perceived risk was considered an important factor, which would affect user intention to use online banking in India and Portugal (Kaur & Arora, 2021, p. 22; Martins et al. 2014, p. 10).

Trust can be defined as belief that expectations are fulfilled, and behaviour is as anticipated (Gefen, 2000, p. 726). Familiarity is one of the key factors influencing trust (Gefen, 2000, p. 733), hence fostering trust among vulnerable groups might be difficult. As previous research points out that users with lower levels of digital literacy have overall lower trust when it comes to online banking (Broekhoff et al., 2024, p. 117). Amongst elderly lack of trust or security concerns might be a significant reason for not using online banking (Hanif & Lallie, 2021, p. 1). Trust is a considerable factor, when examining electronic transactions, as online banking handles sensitive information (Merhi et al., 2021, p. 1149). Trust and perceived security have been found a significant factor to

influence intention to use online banking (Merhi et al., 2019, p. 7). If customers have high confidence in their banking services, they might not show high concern regarding privacy (Albashrawi & Motiwalla, 2019, p. 1038). However, not all users are aware of security features or how they work, which can induce some caution towards online banking, additionally, some might consider online banking as attractive for potential criminals, which increases the safety risks (Svilar & Zupančič, 2016, p. 258).

Regardless of the cultural setting banks can enhance trust by having guarantees of security, privacy and trust, these could ensure compensation for any losses customer might face, as well as utilization of secure practices, for example two factor authentication (Merhi et al., 2019, p. 8-9). Furthermore, negative experiences have a great impact on trust, thus it is crucial to avoid circumstances that could lead to detrimental feelings in particular disappointment and anger (Rajaobelina et al., 2021, p. 98).

2.2.4 Vulnerable Consumers

Elderly people as consumers are experiencing vulnerability in society (Riedel, 2022, p. 125). Prior research demonstrates that vulnerable customers often suffer from financial exclusion as well as financial discrimination, which can lead to more expensive services or lower quality customer care, furthermore the customer might feel discontented or inferiority (de la Cuesta-Gonzalez et al., 2021, p. 173-174). In addition, vulnerable consumers might be more perceptible to telecommunications- and online fraud (Zheng et al., 2024, p. 733). Financial literacy safeguards consumer rights, hence, it should be improved, especially amongst the vulnerable consumers, for instance elderly individuals (Zheng et al., 2024, p. 733).

Elderly people's range of digital activity depends on the activity, as communication and information exchange are common and considered beneficial solutions (Aleti et al., 2025, p. 108; Hill et al., 2008, p. 262). Digital activities regarding commerce and transaction are used least frequently solutions (Aleti et al., 2025, p. 108; Hill et al., 2008, p. 262). It

is crucial to consider the effects of these advancements on older members of society, as technology can support or limit autonomy (Bennett, 2019, p. 37). Developed countries are facing changes with population growing older, an aging population will transform customers' financial needs (Cui & Xu, 2022, p. 2). Hence, there is a need for better understanding what elderly people value and need from digital solutions (Aleti et al., 2025, p. 98). This should ensure that technological advancements enhance not diminish the quality of life for the elderly (Cohen Elimelech et al., 2025, p. 9).

2.2.5 Elderly Users Emotions in Regard to Digital Services

Positive customer experience provides feelings of happiness from ease and quickness; however, it is important to note that failed customer experience can lead to frustration and uncertainty (Hyppönen et al., 2023, p. 142-143). Vulnerable customers want understanding from the banks, which leads to feeling of respect and success (Hyppönen et al., 2023, p. 142-143). Furthermore, the fear of making errors might prevent the customer from using the service (Hyppönen et al., 2023, p. 142-143). While providing services it is important to consider and identify which factors are contributing to consumers experiencing vulnerability (Ridel, 2022, p. 126).

Previous research illustrates, how elderly people's digital skills might be considered weak and as a problem in society (Rasi-Heikkinen, 2022). While capabilities vary; some choosing not to participate, others are quite capable, and some requiring the help of a family member (Rasi-Heikkinen, 2022). Non internet use is not always due to lack of skills, sometimes elderly users do not want or do not have the energy to use the internet (Rasi-Heikkinen, 2022).

Older people with positive views on internet usage are more likely to embrace the internet, on the contrary negative expectations might result avoidance of technology (Hill et al., 2008, p. 262). So-called risk groups are experiencing issues with specific payment services, which affects the ease of use, efficiency, reachability and accessibility (Broekhoff et al., 2024, p. 105). In addition to digital capabilities or psychological reasons,

individuals might struggle with physical limitation or with not owning the needed devices (Broekhoff et al., 2024, p. 105). Lack of digital capability can create issues including digital divide or intelligence barrier for the elderly (Cui & Xu, 2022, p. 2). Which can lead to some users experiencing difficulties with their everyday life (Rasi-Heikkinen, 2022).

2.2.6 Positive Experiences on Motivation

Suggestions for better user experience in online banking, especially for the elderly can be found in prior research. As users' expectations influence post-adoption performance and outcomes, it is critical to shape initial expectation with creating awareness through social platforms, websites, professionals etc. (Gupta et al., 2020, p. 10; Sinha & Singh, 2023, p. 4475). However, it is then important for the banking service to fulfil these expectations, which results in confirmation of expectations, thus enhancing the user's satisfaction (Gupta et al., 2020, p. 10; Sinha & Singh, 2023, p. 4475). Satisfaction can overall be considered a key indicator for usage of online banking (Sharma & Sharma, 2019, p. 73).

To create inclusive online banking systems, banks should foster a culture where creating online banking services to the elderly is considered a social responsibility (Cui & Xu, 2022, p. 17). Banks should consider the digital aspects such as technologic or product innovations but also humane in person aspects like service experience to create elderly friendly online banking services (Cui & Xu, 2022, p. 17). To assist the elderly with decision making and financial stability banks should focus on tailoring financial products according to personal needs (Chhatwani, 2025, p. 16). Additionally, banks should foster long-term engagement, with on-going support as well as building a relationship with the client (Chhatwani, 2025, p. 16).

Accessibility can be increased by introducing biometrics in authentication processes, which would lessen the mental load of remembering passcodes (Broekhoff et al., 2024, p. 117). Biometric technologies are developed to evaluate users' identity via biological traits, including facial features or fingerprints, this can eliminate the usage of

unnecessary authentication devices or multiple passcodes, while maintaining secure authentication (Kaur & Arora, 2021, p. 22). Other previous studies support the utilization of biometrics as well, as biometric authentication methods were found to require least amount of effort amongst authentication methods, on the contrary hardware tokens were considered the most difficult authentication method, as it required an extra device (Krol, et al., 2015, p. 9). The adoption of biometrics is quite widespread, however it is still important to invest in user education and awareness, as it ensures the successful implementation of different authentication methods (Tran-Truong, 2025, p. 31, 34). Banking services should provide their customers authentication methods, that are secure, but do not disregard usability (Kruzikova, et al., 2024, p. 1). As user authentication is the first experience in online banking, it cannot be expected that users would be satisfied with the service, if the application makes a negative impression from the beginning (Svilar & Zupančič, 2016, p. 259). Biometric authentication methods have popularized in recent years, and some consider it easy and accessible to use, as this has lessened the need for extra devices or passcode lists. However, innovation isn't always the key when it comes to the elderly, as older consumers often prefer familiarity and perceive new features as complex, and when introducing new features, it is crucial not to remove the existing ones (Cham et al., 2022, p. 1036-1038).

Other methods of authentication include mobile keys, which utilize an application or transaction authentication numbers (TAM) in a form of a list or a text message. The Finnish Financial Supervisory Authority (2019) has stated that according to EU's PSD2, passcode lists do not fulfil secure authentication requirements by themselves as they can be easily copied. However, due to avoid discrimination it is still accepted as an authentication method, at least until the bank has ensured that new methods fulfil all the usability, accessibility and operational reliability (FIVA, 2019).

In addition to non-discriminatory technologies, it is crucial to preserve physical contact points of the bank as well as proper telephone customer service (Broekhoff et al., 2024, p. 117). Face-to-face services for customers have often been replaced by interactions

with technology (Ibarreta et al., 2025, p. 2). Previous studies indicate that some older adults might prefer familiar communication done in-person (Yuan et al., 2016, p. 171).

To assist users, especially vulnerable customers, banks should provide educational content, which could increase self-efficacy (Nasri & Charfeddine 2012, p. 10). Furthermore, it is important to consider whom the educational material is aiming to reach, as it should be tailored according to the users' needs (Broekhoff et al., 2024, p. 117). With understanding the target group online banking services are able to offer services which match their customers expectation (Sinha & Singh, 2023, p. 4476). Ways to implement training for the elderly, could be utilizing home healthcare workers, libraries or religious or other community-based institutions (Finkelstein et al., 2023, p. 4). In addition, tailoring the education to elderly, should comprehend the proper pace and an inspiring learning environment (Aula, 2005, p. 78). Other factors enhancing satisfaction among the elderly include the technical support provided by a family member, which is important from acquiring the needed device and/or service, to social support for utilization (Hill et al., 2008, p. 261; Säynätmäki & Zhang, 2020, p. 155). Furthermore, the participation of a family member or a friend, combines social interaction with the usage, which can inflict positive feelings related to using (Shirahada et al., 2019, p. 8).

Overall, the previous literature around the acceptance of online banking is rich, additionally there are previous literature which regards the elderly as a variable as well. Previous literature suggests that users often adapt online banking, due to perceived usefulness, however emotional experiences such as insecurity or lack of digital capabilities might influence the adaptation. Previous literature has highlighted technology acceptance models and variables such as trust and perceived security. Additionally, some studies regard emotions as an important factor in adapting online banking, however less attention has been given to the emotional effects of the elderly users in adapting online banking, especially in high trusting societies. Therefore, this

study aims to further investigate how elderly individuals experience emotions in adapting and using online banking services.

3 Research Methodology

This thesis is conducted with qualitative research method. The objective of this research is to understand; how does the elderly in Finland adapt and feel about online banking? The research is conducted via framework which utilizes, Plutchik's Wheel of Emotions, technology acceptance models such as TAM, UTAUT, and in addition constructs such as trust and perceived risk, which have been introduced in the literature review. Qualitative approach aligns with this study, as the aim is to understand the subjective experiences, thoughts and feelings of the participants (Puusa et al., 2020, p. 9) This chapter aims to explain the research methodology selected for this research as well as give justifications for the chosen methodology. In addition, this chapter describes the sample and data gathering process as well as the reliability and validity of the research method.

3.1 Qualitative Research Method and Thematic Interview

Qualitative research in essence means collecting and analysing qualitative data, which is collected for example via interviews, documents or observing participants (Eskola & Suoranta, 1998 p. 15; Myers, 1997, p. 1). The aim of qualitative research is to explain and understand the phenomena, while being objective, systematic, critical, independent and impartial (Puusa et al., 2020, p. 23). Whereas quantitative research focuses more on the quantity and numbers (Eskola & Suoranta, 1998 p. 13), the strength of qualitative research methodology lays in understanding the circumstances and human interactions, moreover it aims to comprehend different perceptions and perspectives (Puusa et al., 2020, p. 58). Hence qualitative research results cannot be considered timeless and placeless, but as descriptive of the phenomena focused on at that time and place (Eskola & Suoranta, 1998 p. 16).

The empirical data was collected via thematic interview. Interviews are a valuable way to understand humans and human behaviour in information systems science (Tiainen, 2014, p. 2). Although, interview as a methodology aligns with the purpose of wide variety of different subjects, it should be always considered in relation to the research

question, to the phenomena and its nature (Hirsjärvi & Hurme, 2022, p. 13). The purpose of this study is to gain valuable insight from the perspective of the elderly, which requires closer examination of attitudes feelings, and experiences. Thematic interview allows deeper understanding of a person as a unique individual, which includes their experiences, impressions and thoughts, furthermore, conversational interview aids in understanding beliefs and actions (Hirsjärvi & Hurme, 2022, pp. 13-14).

Not all interviews are valid research, hence the data collecting and analysis must be systematic (Tiainen, 2014, p. 2). Thematic interview is data collection method, where the themes and topics are decided before hand, but the discussion can freely move around these topics (Hirvijärvi & Hurme, 2009, p. 209). It is crucial for the interviewer to be well versed in the topics as well as have good communication skills, thus conducting the interview without a rigid structure (Tiainen, 2014, p. 2). In thematic interviews the researched phenomena is split into sections, where the aim is to understand the contents and meaning of the themes, instead of singular questions (Puusa, et al., 2020, pp. 107-108). Hence, it is important for the interviewer to choose the right themes in regard to the research (Puusa, et al., 2020, p. 108). Thematic interview (see Appendix 1.) suits this research, as it can help gain deeper understanding on the feelings and actions of the elderly regarding online banking in Finland.

The theoretical framework for this study has been introduced in the literature review section of this thesis. Conducting thematic interviews through the lens of a clear theoretical framework is important, as it defines what is interesting and what is not (Tiainen, 2014, p. 6). As the literature around this topic is rich it was easy to structure a framework applicable for this research.

The structure of this research is as follows; the research dilemma, understanding the themes and topics, as well as defining the research question, collecting and analysing empirical data, conclusions and discussion (Hirsjärvi et al., 1997). As the first part of this thesis, the literature review introduced the reader to the topics and theoretical

framework of this research, the following chapter methodology 3.1 & 3.2 describes the data gathering and data analysis utilized in this study. Chapter four introduces the findings collected during the interviews and the final chapter discusses the implications to theory and practice, as well as trustworthiness, limitations and future research.

The research question is the most important and influential part of the research process, as it defines the decisions regarding research method used for data collection as well as the data which is to be collected (Hirsjärvi & Hurme, 2022, p. 13). The interview structure, although quite free, was built on the research question. Deciding on themes and questions to lead with gave the interview structure and flow, which assisted in well-rounded conversation on the topic. A well-planned interview ensures relevant information for the interviewer and to the research, as the themes decided in advance direct the flow of the interview (Puusa et al., 2020, p. 108).

3.2 Sample

Qualitative research usually utilizes small number of participants; however, the objective is to analyse those in depth (Eskola & Suoranta, 1998, p. p. 18) The participants for this study were chosen via convenience sampling, as the purpose of this study is to understand experiences and perceptions of elderly people with different technological skills. The advantage of conducting a qualitative interview is to gain understand of the select group (Puusa et al., 2020, p. 101), which in this case is the elderly. Hence, a total of 8 participants (see table 1.) took part in the interview, with age range of 79 to 85. Five of the participants, interviewees 1-5, were contacted via senior activities club in Vaasa. The name of the organization remains undisclosed, thus protecting the participants' anonymity. These participants were interviewed as a group, during the group interview I tried to make sure that all of the interviewees had the opportunity to respond to each question. The other half of participants are elderly from Vantaa, interviewees 6-8, which were interviewed separately. Despite of using two different interview formats, individual and group, all of the interviews were analysed together in the same data set, and the

results are shown in the same chapter. The interviews were conducted in January and February of 2026.

Table 1. Participants.

ID	Age	Gender	Location	Interview type
Interviewee 1	79	Male	Vaasa	Group
Interviewee 2	85	Male	Vaasa	Group
Interviewee 3	85	Male	Vaasa	Group
Interviewee 4	84	Male	Vaasa	Group
Interviewee 5	79	Female	Vaasa	Group
Interviewee 6	84	Male	Vantaa	Individual
Interviewee 7	80	Female	Vantaa	Individual
Interviewee 8	80	Male	Vantaa	Individual

3.3 Data Gathering

The nature of a thematic interview as a research method might lead to responses, which the participants regarded as socially acceptable (Puusa et al., 2020, pp. 103-104), which was kept in mind during the interview process. In addition, the interview questions were kept simple as I tried to minimize possible interpretation mistakes. Interpretation mistakes might stem from ambiguous phrasing or social distance, it is crucial not to impose abstract questions with unfamiliar terminology or theory to the participants (Puusa et al., 2020, pp. 101-104). Furthermore, it is essential for the interview to succeed to focus on communication and language as well as understand possible barriers with the interviewees (Hirsjärvi & Hurme, 2022, p. 53). In addition to language, interviews pose an opportunity to notice nonverbal signal, which can lead to better comprehension regarding the given answers (Hirsjärvi & Hurme, 2022, p. 32).

As concluded in the literary review, elderly people can be considered a vulnerable group, combined with the usage of online banking, which contains sensitive and private information, it is crucial to understand the ethical practices when conducting the interviews and analysing the results. The research should illustrate the feelings and experiences of the elderly on using online banking, hence the interview does not include questions, which would require an actual usage of the service. In addition, the questions do not demand for any personal information. To ensure ethical research, the interview follows the guidelines of good scientific practises in Finland (TENK, 2023, p. 12). Before the interviews the participants were given the Privacy Policy of University of Vaasa and a consent form. Both emphasized the secure storing of the interviews and the voluntariness of participation. The interviews were all recorded, with permission of the interviewees, I also made some of my own notes during the interviews in terms of reactions or facial expressions, if needed. Most of the interviews followed the structure of the interview, however at times the topic might have jumped to the next theme, in which case the question arrangement changed. Especially while conducting the research, it is crucial to apply aspects including, particularly ethical considerations, data management and providing a safe operating environment, where the participants understand the purpose of the study and give informed consent. An aspect of an ethical study is the research question, as it should have a positive impact on the lives of the subjects (Puusa et al., 2020, p. 167). The purpose of this study is to create suggestions to banks, which would make the elderly user experience better.

The themes for the interview were decided after the literary review on the topic, as the previous literature related to online banking acceptance and adaptation and digital user experiences for the elderly provided a set of useful themes such as technology acceptance, ease of use, perceived usefulness, facilitating conditions, social influence, as well as vulnerability, perceived risks and emotional experiences. As these were important factors in previous literature, it was decided to conduct the themes based on these. The first themes for the interview were established as theme 1: user experience in online banking, this was aiming to establish the overall experiences, positive and

negative, as well as online banking usage in everyday life. Theme 2: Performance and effort expectancy, ease of use and perceived usefulness. Theme 3: Social influences and support, from family members and from the bank. Theme 4: Perceived risk, trust and possible security concerns affecting use. Theme 5: Attitudes and the future, which aimed to establish future expectations and wishes from the interviewees.

The stimuli utilized in this study consisted of interview questions, which were aiming to gather information from the participants personal experiences. External stimuli for example prototypes or specific task doing was not utilized in this study. The interview followed the themes established, user experience, emotions, ease of use, perceived usefulness, social influence and facilitating conditions, these functioned as the initial stimuli, however there was room left for discussion around the themes and the participants were encouraged to recall personal experiences, feelings and perceptions about online banking. During the interview some examples of the use of online banking were utilized to evoke memories or emotions, such as logging in and using two-factor authentication method, doing daily tasks like paying invoices or circumstances where assistance was needed.

3.4 Thematic Analysis

After the interview, the material collected should be organized and analysed, which is the base for the research report (Hirsjärvi & Hurme, 2022, p. 105). During the interview plenty of data can be collected, hence it is important to choose, which materials are the most useful to analyse (Hirsjärvi & Hurme, 2022, p. 142). After the thematic interview was held and the required data was collected, it was analysed. The purpose was to find characteristics or attributes, introduced in the literary review among the interviewees. In addition, the aim was to create an applicable synthesis. The data analysis should capture and explain the phenomena, which is being researched, however the synthesis must create a wholesome picture of the topic (Puusa et al., 2020, pp. 139 & 146). During the thematic analysis, Braun & Clarke's (2006) six phases of thematic analysis was

applied. These include familiarization with the data, coding, searching for themes, reviewing themes, defining and naming themes and writing up (see figure 3.).

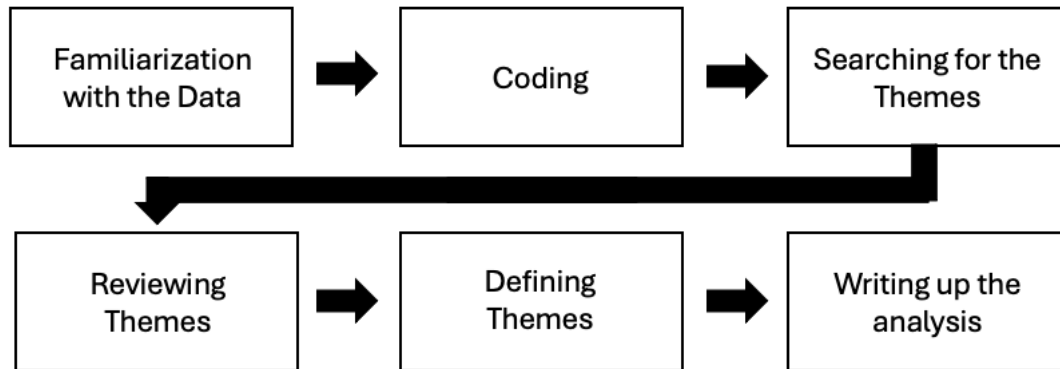


Figure 3. Thematic Analysis (Braun & Clarke 2006).

Thematic analysis can be theoretically flexible, as it aims to seek patterns and themes across the data, while not being dependant on a specific theory (Braun & Clarke, 2013, p. 2). Themes might form based on planned themes, however it is important to leave room for new or unexpected themes to occur from the materials (Puusa et al., 2020, p. 148). The framework applied in the analysis, utilizes the themes of the interview as a baseline structure, which is based on the theories introduced in the literary review, Wheel of Emotions, TAM, UTAUT, perceived security and trust.

In the first phase of the analysis, familiarization with the data, the interview recordings were transcribed. During this phase the participants were established, especially in the group interview this was important, as there were many speakers in one transcription. Additionally, some of the words were corrected. Overall, this phase consisted of clearing the transcriptions and familiarization with the contents, also some initial notes were made. This phase was done on all interviews individually. The second phase required coding of the collected responses into more data, allowing better comparisons between the answers. This was done with another text document, with different attributes or themes were compiled from each participant, this combined the group interviews

findings with all of the individual interview findings. The third phase utilized the same text document as the second phase, only the data collected was grouped into broader themes, such as perceived usefulness, emotional responses or facilitating conditions. In the fourth phase, the themes were reviewed, this allowed more precise understanding that the data collected was coherent with the themes that were refined. Phase five required for the themes to be defined and named, this phase should capture the meaning of each theme. This process was not straightforward, as the themes sometimes overlapped, this required some revisions during the process. The aim was to ensure that the themes accurately captured the patterns found in the data. The final phase of the data analysis the themes were written into the findings chapter. Relevant excerpts were utilized to illustrate the themes of the interview. The findings were also compared into exciting literature, furthermore theoretical and practical implications were discussed in the final chapter of this thesis.

4 Research Findings

This chapter aims to answer to the research question: How do elderly feel about online banking? Braun & Clarke (2006) Thematic analysis was applied as mentioned in the last chapter. The interviews started with understanding the attitudes of the interviewees regarding online banking. Additionally, other themes, such as user experience, perceived usefulness, perceived security, trust, social influences and facilitating conditions were discussed during the interviews. This chapter aims to give a comprehensive view on the findings of the interviews. The findings have been organised into key themes, which should reflect the experiences, perceptions and the emotions of the elderly in regard to online banking. These themes were established as emotional responses to online banking, usefulness and ease of use, social support and facilitating conditions and security, trust and fear of making errors.

4.1 Emotional Responses to Online banking

The interviews started off with an overview to the interviewee's perspectives on online banking. Aiming to understand how and why the elderly have decided to adapt online banking in the first place.

The findings illustrated that most of the participants started using online banking when it first started to come around. Some had prior knowledge of using a computer, which made the transition easier, however some of the participant did not and they had to seek help to learn computer skills. Most of the interviewees begun using online banking on the computer but have transitioned into mobile as smart devices have popularized. A common theme that raised was the ease of mobile banking, however some participants considered online banking on the computer as the safer option, which would be preferably used while doing bigger transactions or tasks.

Some of the interviewees felt that online banking was a necessity, that there was not another option especially nowadays. This was the main driver for the transition into online banking.

“When online banking started to come around, I immediately started using it due to convenience.” (Interviewee 6)

“What is the other option, than to use online banking?” (Interviewee 5)

However, some participants started to use online banking due to convenience. As they were not confined into banks opening times and routine tasks, such as paying invoices, transferring money and investing became easier and more efficient. The interviewees who started using online banking due to necessity overall seemed to have more negative experiences, whereas the interviews, who started using due to convenience had more positive experience. This is in line with Hill et al. (2008, p. 262) research, which suggest that elderly people with positive attitudes on internet usage are more likely to embrace it. In essence all the participants felt that online banking was very important and essential.

4.1.1 Emotions Influencing User Experience

During the discussions on user experience in online banking the participants answers varied. The negative experiences seemed to evoke stronger emotional reactions and memories than the positive ones.

“It did help that you didn’t have to go to the bank to handle everything, when you learned it.” (Interviewee 2).

“Necessity, speed and the fact that you are independent. You are not tied to a specific place. You can use it anywhere, on the shore or by the pier, wherever you happen to be.” (Interviewee 7).

The positive experiences reflected ease and efficiency, which online banking had brought in comparison to traditional banking services. Certain participants especially recognize

the independence and flexibility gained with online banking, as they do not need to physically go to a bank. In addition, some of the participants felt that transition into mobile banking was even more convenient, as they carried their smartphone with them everywhere they went.

"It's easy when you have learned it. Easy that you can pay many invoices at once. No issues in particular." (Interviewee 3).

"Especially, when moved to mobile was a positive experience, for example barcode reader helps." (Interviewee 6).

The interviewees all perceived online banking as useful. However, the perceived ease of use varied with the respondents. This is in line with TAM (Davis, 1989, p. 320) where perceived usefulness determines whether the user considers the use of the application important enough to use. As the interviews illustrate the respondents consider online banking important, even a necessity, which leads to using of the system. The perceived ease of use differs with the interviewees, thus not the main driver for the intention to use. This is in line with previous studies (Cheng et al., 2006, p. 1567; Eriksson et al., 2005, p. 19; Nasri & Charfeddine, 2012, p. 9), which suggest that perceived usefulness is the most important factor when deciding to use an application. In addition, these results found that effort expectancy did not affect intention to use, which is in line with (Hanif & Lallie, 2021, p. 10). Effort expectancy was seen to affect the attitudes to usage. Interviewee 7 attributed perceived risk and security with usefulness, which give the feeling of control of the system.

"I would say usefulness is the most important factor. I justify it as, online banking is easy to use, but it is also secure, for example I can close it if there is an inappropriate moment." (Interviewee 7).

The authentication method used by the responded varied. Some used mobile authentications or biometrics, these were considered as easy and convenient methods of authentication. Biometric authentication methods decrease the mental load of

remembering passcodes, which leads to better accessibility, especially important for the elderly (Broekhoff et al., 2024, p. 117).

Mostly the participants had not had major issues while using online banking, especially after having learned how to use it initially. Despite not facing major issues, some respondents felt online banking difficult and even scary at times.

“Sometimes the controlling can feel difficult, with authentication devices and mobile texts that are in English. Password list is an easy way and would wish that more banks still used those.” (Interviewee 2).

Most of the participants in the group interview used password lists and felt nervous about banks starting to lessen the use these. In addition, it was acknowledged during the group interview, how difficult it is to learn new aspects of online banking. Some felt that new features were added and old ones removed too frequently, which made the controlling of online banking even more difficult. Innovation or new features are not the key, when it comes to designing online banking services to the elderly (Cham et al., 2022, p. 1037). Few of the respondents had a strong negative emotional reaction to the changes within online banking, there was also concern, if an elderly individual were for example to get ill or would not be able to use online banking for other reasons, would they be able to return easily, if there were new changes made. Furthermore, there was anxiety who would help, if something were to happen and the elderly individual would need special help. More personal assistance on the side of the bank was hoped for.

“Uses password list and feels that using a phone is easy, however sometimes more secure on the computer. Nervous if password list stops. Worst thing about banking services is the constant change, it’s hard to adapt especially as elderly. It feels terrible.” (Interviewee 5).

4.1.2 Perceived Security and Trust

In terms of perceived security and trust within the elderly using online banking, the literature varies. As in Finland, usually trust in official services such as banks is high,

which should lessen the perceived risks associated with online banking (OECD, 2024; Yousafzai et al., 2003, p. 856). In these interviews the respondents altogether trusted their banks. Although there were specific mention about not trusting all of the bank's employees, especially, if they were unfamiliar. Being in line with Gefen (2000, p. 733) familiarity is an important aspect when creating trust. Fear regarding fraudulent behaviour done by banking employees is not baseless, as such crimes are not unheard-of. Additionally, many of the respondents noted that they do not really understand the security and privacy measures done by banks, hence they cannot form an opinion other than to trust.

"I trust banks as institutes. I feel that everything is secure, however when it comes to privacy, I'm not as certain as you never know who handles all the information." (Interviewee 7).

"There is always a slight worry, if everything remains safe, as there have been these different attacks on banks. Luckily hasn't happened to me." (Interviewee 6).

During the interviews there was a lot of discussion regarding the security aspects of online banking. Currently phishing attacks have become more common, and these are covered widely in the news, which has led to better understanding of safe practices, but also fear. One respondents pointed out that on in the beginning stages of adapting online banking there were not as many and as complicated phishing or fraud attempts, hence there was not as much fear surrounding those as there is now.

"All has been fine, at the beginning did not even know to fear." (Interviewee 8).

4.1.3 Perceived Control and the Fear of Making Errors

In terms of feeling capable to use online banking securely the interviews indicated that most of the respondents felt that they had received enough education to notice and dodge phishing attempts. They felt that some safe practices, such as not clicking links or giving away sensitive information has been internalised over time. The interviewees seemed be aware of their position as vulnerable consumers, thus being continually

cautious while utilizing banking or online banking services. The interviewees felt that banks and different news platform inform and educate about current attacks and warn effectively.

“It has been engrained in me to not to give anyone anything. If something happens then it’s out of my control.” (Interviewee 7).

Despite knowing safe practices and receiving information about current fraudulent behaviour, some respondents were quite fearful of cyber security threats, phishing attempts and fraud. The respondents acknowledged the evolving nature of threats, which caused increased insecurity and fear. Cyber security fear is partly associated with own behaviour in these interviews. Some participants fear making errors, while using the service, which could lead to a security breach. The answers illustrated that especially long number combinations and need for precision creates insecurity, as some elderly are struggling with eyesight or memory. There is fear that wrong action leads to unwanted outcomes.

“There’s a fear of pressing the wrong button and information leaking into a wrong place.” (Interviewee 5).

The respondents who expressed most insecurity and fear around online banking, appeared to use the service less frequently. With these respondents there was dread associated with the need to use online banking. The fear of making errors, might deter the elderly from using the service (Hyppönen et al., 2023, p. 142-143).

The interviews illustrated satisfaction with new more easy ways to use online banking. Many considered moving to mobile as a great improvement, as there were not as many codes to remember. Authentication methods becoming more biometric or simple was also considered a positive in most cases, as all respondents felt that authentication device was the worst authentication method they had encountered. Few of the interviewees were relieved that currently bank transfer requires for the correct bank

account number, but a name as well, which reduces wrongly made payments and at least makes the user experience feel more secure.

“Nowadays payments don’t go through if there are errors, which previously was an insecurity.” (Interviewee 1).

During the group interview there was more insecurity with making errors, whereas in the individual interviews felt that after learning to use online and mobile banking there was not as much insecurity or fear.

4.2 External Factors Influencing Emotions and Experience

According to literature a significant part of the user experience of the elderly in online banking is facilitating conditions, social influences and support. Therefore, this was a formed as theme for the thematic interview. Here the answers were quite in line with the literature, as well as with each other. Additionally, we discussed the banks part of the support influencing the attitudes and capabilities of the elderly require to utilize online banking.

4.2.1 Social Influences and Facilitating Conditions

The overarching theme in the interviewee’s responses, was the importance of the support received from relatives, mostly children or godchildren. Few of the respondents felt it was especially important in the beginning, however, now manage mostly without help. Others felt help from relatives was still crucial, especially when new features were added and needed to be learned. Few of the interviewee’s had tried to gain help from outside sources, such as library digital assistants, this had been useful in the beginning but nowadays was not considered as effective with other issues encountered.

“Help from children in the beginning, now doesn’t need that much assistance.” (Interviewee 8).

“Children have helped to understand new features when needed.” (Interviewee 6).

A couple of answers also illustrated, how the family member had encouraged starting to use online services, for example online banking. With purchasing the device needed and amplifying the importance of starting to learn and to use the device.

“I was supposed to be done with computers, when retiring. Still children bought a computer and taught how to use online banking services.” (Interviewee 4).

Interviewee 6. pointed out that transition from Android to Apple gave him access to face recognition as biometric authentication method, which made online banking even easier. This change was also driven by a relative, who had felt that the usefulness of face recognition would benefit the interviewee.

“Also, switch from android to Iphone was great.” (Interviewee 6).

The literature support these findings as social influence, such as the help of a family member increased satisfaction (Hill et al., 2008, p. 261; Säynätmäki & Zhang, 2020, p. 155). Positive experiences, which affect attitudes regarding online banking are important in terms of creating satisfaction. The participation of a family member might create encouraging experience, as it combines social interaction with the usage (Shirahada et al., 2019, p. 8).

4.2.2 The Role of the Bank

In addition to help from relatives, some of the participants had received face-to-face assistance from a bank employee, when they started to use online banking, with setting up the service and teaching authentication processes. This was considered useful, although it still left some respondents with hesitation to use online banking by themselves. Currently, banks have lessened the number of face-to-face services, which has moved the services to online, moreover customers are encouraged to utilize call

services to reach assistance from the bank. The reception of these changes were varied, within the respondents.

Mostly the interviewees felt that they received quality assistance from their banks. However, especially within the group interview some of the respondents felt that they would rather receive face-to-face assistance. This was available but created annoyance as it might require a long wait or an appointment, which was considered hard to arrange.

"I feel that I get quality service in the bank, however sometimes it can be difficult to get an appointment. I Would rather handle things over the counter in, but it feels like sometimes the wait is long as there aren't many workers nowadays." (Interviewee 2).

Few of the participants were using call services to reach the bank with minor issues but evidently had some insecurities with it. During the group interview there was overall a strong sense of hoping for more personal and face-to-face services and assistance. Whereas the other respondents were quite positive about online and/or calling services.

"I have sometimes been able to handle small things over the phone." (Interviewee 4).

"I have called. Just now there was a thing, I had to ask about and received a response. It was very efficient and flexible." (Interviewee 8).

"I don't really use face-to-face services anymore. I'm rarely in touch with the bank, but nowadays always on the phone. It's especially easy as you can directly call from the mobile bank. If there were to be a bigger issue, then maybe I would go to the bank to figure it out." (Interviewee 6).

Theses answers illustrated, how some of the participants felt it was quite convenient and efficient to utilize internet or calling services, to assist with issues or otherwise. It was felt especially convenient to call thorough the mobile bank, as this utilizes strong authentication automatically and does not require additional steps during the phone call. Some of the interviewees did not know where they should even go to utilize brick and mortar banking services, however it would possibly require commute and waiting in a

line whereas the calling did not. Besides feeling satisfied with handling matters over the phone, there was also pondering, if face-to-face services would be required with any bigger issues.

"I once tried using a chat, however this so called chatbot did not understand my question and connected me to a expert. Then I got to talk over the phone with them and the issue was resolved well." (Interviewee 7).

One of the participants had tried to use chatbot services, however it eventually led to a phone call as the chatbot did not understand the issue encountered and was not able to provide the needed help.

There was also slight mention of the past, where the banking employee was someone, you knew, which was kind of missed. Yet it was understood that this was not the way banks operated now. However, with one of the respondents they had received personal assistance from the bank during a home sale, thus the respondents felt supported with the transaction and had a positive experience.

"It was nice when you had your person who you knew and went to see, but no going back to past!" (Interviewee 8).

Overall participants felt supported, however not all of the participants have encountered major issues, which would need to be resolved. Some had received support as needed and felt that their bank provided support easily and efficiently. There was also few respondents, who used more than one bank and felt that the service level differed within those.

"The help is not received quickly. First, you have to encourage yourself to pick up the phone to call and authenticate yourself, and then you might be able to get an appointment for someone." (Interviewee 2).

Few participants felt that they did not receive support easily or efficiently, which resulted almost in a sense of hopelessness.

4.2.3 Future Expectations

The interviews illustrated that in the future the elderly would like to utilize more face-to-face services. Although some are very comfortable using digital services, they feel that the digitalisation of everything and lessening human interactions is the wrong direction. Additionally, the movement to digital led to strong negative reactions from several participants, as they felt uncertain and insecure. Furthermore, couple interviewees noted that although they were able to use online banking now, what would happen later, if they were no longer capable to use the service. Few respondents felt content with using digital services but noted that face-to-face interactions would be nice sometimes.

“Feels terrible.” (Interviewee 5).

“I feel that it is part of the zeitgeist and it’s good.” (Interviewee 7).

Whereas the participants were quite satisfied with their banking services, at times they would hope for more guidance on changes and overall, less changes. New changes and features seem to frighten some individuals. Moreover, there is hope for more clear language, less utilization of English and more information overall. The information currently comes mostly in a form of a letter or a short announcement, which can leave question marks to the consumers a channel like a seminar would give the opportunity to ask questions easily.

4.3 Emotional responses

The emotional responses of the respondents varied. However, some emotions stood out during the interviews. These have been illustrated in a modified Wheel of Emotion (Plutchik, 1980), with the dot size reflecting the dominance of the emotion found in the data (see Figure 4.). Emotions such as trust and vigilance were the most prominent with the respondents. Whereas negative emotions like fear, anger and annoyance were strong in some respondents, these were not dominant in all participants. Similar to positive emotions such as joy and even acceptance.

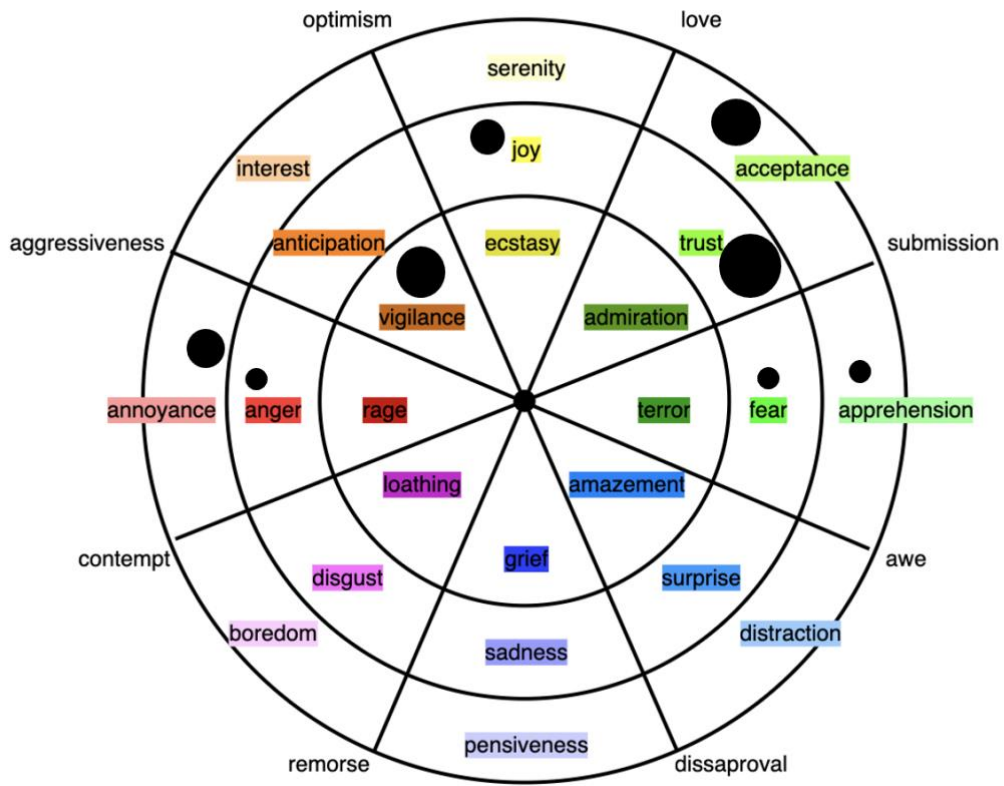


Figure 4. Modified Wheel of Emotions (Plutchik, 1980).

5 Discussion

The purpose of this study was to understand how does the elderly feel about online banking. This research utilizes existing technology and emotional research models to illustrate this with the findings collected via thematic interview. This chapter summarizes this thesis, by illustrating the key findings and discussing the implications. It introduces contributions to theory and to practise, striving to discuss the findings compared to existing literature as well as giving suggestions and insights to banks based on these findings. Additionally, limitations and trustworthiness of the study is addressed and recommendations and thoughts on future research.

5.1 Contributions to Theory

The findings collected during the interviews aim to contribute to theory with strengthening the existing literature and adding perspective from the elderly in Finland specifically. Firstly, the findings showcase that according to TAM (Davis, 1989) perceived usefulness was found the most important factor in using online banking. This is in line with previous studies (Cheng et al., 2006, p. 1567; Eriksson et al., 2005, p. 19; Nasri & Charfeddine, 2012, p. 9), which suggest that perceived usefulness is the most important factor when deciding to use an application. Perceived ease of use was not as influential, as the participants felt that there was not another option than to use online banking. Regarding UTAUT (Venkatesh et al., 2003) effort expectancy was not found as an important factor, which is in line with (Hanif & Lallie, 2021, p. 10). Performance expectancy was high amongst the participants, which is in line with (Merhi et al., 2021, p. 1162), whereas, facilitating conditions were not found to be significant in this study, which has been illustrated in previous research (Abu-Taieh et al., 2022, p. 21; Martins et al., 2014, p. 10).

Secondly, social influences and facilitating conditions were important part in adapting online banking in this study (Abu-Taieh et al., 2022, p. 21; Martins et al., 2014, p. 10), as all of the participants had received encouragement, help or support from relatives. This

was found to be especially important in the beginning stages or when learning something new. The literature support these findings as social influence, such as the help of a family member increased satisfaction (Hill et al., 2008, p. 261; Säynätmäki & Zhang, 2020, p. 155). Positive experiences, which affect attitudes regarding online banking are important in terms of creating satisfaction. The participation of a family member might create encouraging experience, as it combines social interaction with the usage (Shirahada et al., 2019, p. 8).

Thirdly, the attitudes effecting the emotions regarding use of online banks, were found to be significant, which is in line with previous studies conducted on user experience and emotions (Chen, 2020, p. 1470; Partala & Saari, 2015, p. 390). The results show that users who have not had negative emotions, felt satisfied and optimistic about online banking, which is consistent with (Hill et al., 2008, p. 262). Additionally, this manifested in the feelings of ease and efficacy, as well as convenience. According to Hyppönen et al. (2023, p. 142-143) positive customer experience provides feelings of happiness, however failed customer experience can evoke strong negative feelings. Respondents who felt precautions or hesitation regarding the use of online banking, in worst cases manifested as fear or anger towards online banking, reinforcing previous study done by Hill et al. (2008, p. 262). The fear of making errors might prevent the customer from using the service (Hyppönen et al., 2023, p. 142-143.) According to Plutchik (2001, p. 347) stimulus events create feelings, so when a user considers online banking as a threat or an obstacle feelings such as fear and anger arise. Moreover, when a user considers online banking as a valuable object, feeling of joy arises, which is in line with Plutchik (2001, p. 347).

Fourth implication of this study illustrates that the elderly in Finland perceive online banking as trustworthy, they especially trust banks as institutes. Previous studies illustrate that in high trusting societies such as Finland (OECD, 2024), trust in institutions, or in this case banks is high, hence the perceived risks are low (Yousafzai et al., 2003, p. 856). This contradicts previous studies done in other countries on adaptation of online

banking with the elderly (Hanif & Lallie, 2021, p. 10; Kaur & Arora, 2021, p. 22; Martins et al. 2014, p. 10). Thus, adding support to literature regarding online banking adaptation in high trusting societies. However, there was a slight uncertainty regarding privacy, as some respondents felt unfamiliarity with either the processes or employees. Additionally, the results showed that the elderly in Finland are aware of cyber security threats and phishing attempts and, others felt that as far as they could affect it, they felt secure in their practises. However, some respondents were quite fearful of cyber security threats and were more uncertain that their own behaviour could be causing issues with security, as they feared making errors. Negative experiences can eventually affect trust, hence it is essential to avoid detrimental feelings, such as disappointment and anger (Rajaobelina et al., 2021, p. 98), however this study did not support this as the participants with negative experiences still trusted their banks.

Finally, the services provided by banks affected the feelings and emotions of the elderly. The participants who had transitioned into mostly mobile banking were satisfied with the decision, as it gave ease into authentication or logging into the online bank. As user authentication is the first step with using online banking, it has been found to be an important factor affecting the user experience as a whole (Svilar & Zupančič, 2016, p. 259). Also, these participants felt that especially biometric authentication methods were useful and easy to use. Previous studies illustrate ease and usefulness of biometric authentication methods, especially for the elderly, who might benefit from the lessen mental load of not remembering passcodes (Broekhoff et al., 2024, p. 117). Other factors the participants considered important was clear language, less changes and more information with the option to ask questions. These results are in line with previous literature, which emphasise awareness, (Cham et al., 2022, p. 1036-1038); Gupta et al., 2020, p. 10; Sinha & Singh, 2023, p. 4475).

5.2 Contributions to Practice

The findings illustrate the importance of emotions affecting attitudes regarding online banking, hence it is important that banks strive to connect with the customer by creating

a positive experience and assisting according to need when necessary. Regarding perceived usefulness, participants recognized the importance or necessity of having access to online bank account. However, it would be important that the users would feel that the banking services were easy to use, as this effects the attitudes and emotions positively. Additionally, facilitating conditions are crucial for the elderly when learning online banking or when new features are introduced. Therefore, it could be beneficial for the banks to offer services that provide similar support with easy access, for those who might not be getting the needed help from their relatives or friends.

Regarding cyber security threats, the respondents in this study did not feel especially threatened. This was due to education provided by the banks and the news outlets. However, the respondents with the most difficulties with using online banking felt unease regarding their own actions. This again manifested as fear or frustration, which can lead to less usage. Hence, it is important to focus on education and easily accessed assistance when needed.

In addition, all respondents had noticed banking services moving to online and recognized that face-to-face assistance was difficult to access. Most participants were satisfied with calling assistance, however some felt the need for face-to-face assistance or considered it important. Banks in Finland have not ended face-to-face services, however they have lessened it. Previous studies recognize that it is crucial to preserve face-to-face services in the banks, in addition to calling services (Broekhoff et al., 2024, p. 117).

5.3 Trustworthiness of the Study

When assessing the credibility of the research, validity and reliability should be assessed (Puusa et al., 2020, p. 170). Validity concerns, whether the research has been conducted as expected, with proper terms, which reflect the research phenomena (Hirsjärvi & Hurme, 2022, p. 191). Reliability reflects consistency, if the results collected would stay the same depending on the researcher or research method (Hirsjärvi & Hurme, 2022, p.

191). However, during qualitative research reliability and validity are not as applicable as in quantitative research, where the data collection and assessment can be more concretely evaluated (Puusa et al., 2020, p. 170). In qualitative research to show reliability and validity, there should be proper and detailed documentation of different stages of the research as well as recognition of possible subjective approach (Puusa et al., 2020, pp. 172 & 182). Objectivity might be impossible, hence in addition to reliability, impartiality should be addressed (Tuomi & Sarajärvi, 2018, p. 118). In qualitative research, it should be addressed that although objectivity and neutrality is the goal, the possibility of slight subjectivity might affect the research as the researcher conducts the interview as well as interprets the results (Tuomi & Sarajärvi, 2018, p. 118). According to Lincoln and Guba's (1985, as cited in Eriksson & Kovalainen, 2016, p. 307) trustworthiness should be assessed when doing qualitative research, it includes credibility, dependability, transferability and confirmability as key factors.

Credibility should ensure that the research findings are plausible and trustworthy, to ensure credibility the methodology and data collection method chosen for the research should be justified as well (Stenfors et al., 2020, p 598). Another aspect to consider while assessing credibility, is to understand the researchers' familiarity with the topic, which should provide understanding whether the data collected is sufficient (Eriksson & Kovalainen, 2016, p. 307). This thesis aims to be credible by creating a sufficient theoretical framework, based on previous studies and literature, ensuring the quality and merit of the research. In the methodology chapter the research method is established and justified.

Dependability concerns the extent to which in similar conditions the study could be replicated (Stenfors et al., 2020, p 598). Thus, dependability is responsible for giving the needed information to the reader, which ensures the process of the research has been logical, traceable and documented (Eriksson & Kovalainen, 2016, p. 307). In this thesis dependability has been ensured by offering documentation of the research process by presenting the literature review, research structure and conclusions.

Transferability ensures the similarity between previous studies and the current one (Eriksson & Kovalainen, 2016, p. 307), ensuring the results could be found among a different setting, context or participants (Stenfors et al., 2020, p 598). The literary review of this thesis informs the reader of similar studies conducted and the results found. In addition, the conclusion of the results will provide reflections to the studies conducted before, hence providing transferability for this thesis.

Confirmability establishes the connection between the collected data and findings (Stenfors et al., 2020, p 598), these should be presented in an understandable manner to the reader (Eriksson & Kovalainen, 2016, p. 307). The results in qualitative research should be coherent and consistent, as well as plausible and useful (Eriksson & Kovalainen, 2016, p. 307). In this thesis, the findings from the interview were presented via quotations, which provides authenticity and helps the reader to comprehend the thought pattern, which has led to certain conclusions (Puusa et al., 2020, p. 150). The aim is to provide a comprehensive view of the interviewees answers, which should lead other researcher into same conclusions.

5.4 Limitations and Further Research

The limitations of this study, include few main factors. Firstly, due to nature of the research being master's thesis, as well as budgeted and time restrictions the number of participants in this study was quite low. Hence, there is a lack of variety in experiences, which could otherwise provide more broad conclusions. For example, the interviewees were from two different areas in Finland, one being Ostrobothnia and one being the capital region. Although, the participants in Vantaa considered themselves more digitally savvy and had better attitudes regarding online banking, there cannot be made broad assumptions that this would be due to geographical reasons due to the sample size.

Second limitation comes from the geographical simplicity, which is due to similar reasons as the first one. This study was only based in Finland, where the elderly participate quite

well in online services, such as online banking. These results are therefore not applicable world-wide or even Europe wide, as the digital familiarization might vary between areas. As seen in the literature review, similar studies have been conducted in different countries and the results vary.

In the future the boomers are getting older and might require special assistance to deal with online banking, especially as strong authentication is required in health services as well. Moreover, it should be studied, how do the people without online bank account manage to use these services and how they could be helped in the future. This study did not include accessibility as a factor, however it should be research in future studies as many elder people might suffer from different disabilities.

Additionally, banks are increasing the amount of AI being used, with providing services, hence it is still important to keep services to people with different technological or digital skills. In this research the use of chatbots was addressed briefly and only one of the participants had experience with it, therefore this research does not address the possible issues or recommendations regarding the use of AI and chatbots, this should be studied in future studies.

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Appendices

Appendix 1. Thematic interview

Theme 1: User experience in online banking

1. Do you utilize online banking and how?
2. Why did you start using online banking in the first place?
3. What is your experience with using online banking?
 - a. Have you had specific positive experiences?
 - b. Have you had specific negative experiences?
 - c. How do these make you feel?
4. How important do you consider online banking in your everyday life?

Theme 2: Performance and effort expectancy, ease of use and perceived usefulness

1. How easy or hard do you consider using online banking is?
2. How useful do you perceive online banking?
3. What factors influence you to keep using online banking, for example ease of use, usefulness, speed, convenience, necessity?
4. Is there a specific feature you consider difficult or easy to use?

Theme 3: Social influences and support

1. Have you received outside assistance for using online banking?
 - a. Who has assisted you?
 - b. How have you been assisted?
2. Have you utilized assistance offered by the bank?
 - a. Chat, call service, office/live assistance?
 - b. Has the support been effective?
 - c. OPTIONAL: Can you compare the helpfulness or ease between f2f assistance versus via call or a chat?
3. Do you feel supported if you encounter an issue or a problem?

Theme 4: Perceived risk, trust and security

1. What do you think of cyber security and privacy in online banking?
2. Have you or do you fear making errors?
3. Have you or do you fear any cyber security threats?
4. How much do you trust in your bank as a secure service?
5. Do you think you have received enough education regarding safety in your bank, for example noticing phishing attempts or scams?
6. What's your preferred choice of authentication method?
7. How do you feel about this method, while using it?

Theme 5: Attitudes and future

1. Would you like to use more digital services or f2f services in the future?
2. How do you feel regarding the popularization of technology and the lessening f2f opportunities offered by the bank?
3. Are you happy with the current service level of your bank?
 - a. Why yes, why not?
4. How do you think online banking services could be better from your point of view?