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How downside aspects of new e-banking technology can influence consumers

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How downside aspect of new e-banking technology can influence consumers
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Abstract

The purpose of this study is to investigate whether consumers' negative emotions (loss and deterrence emotions) toward new e-banking technology influence their behavioral intention to adopt new emerging e-banking technology. This thesis tries to integrate the unified theory of acceptance and use of technology (UTAUT) with emotion as a non-cognitive factor and perceived risk as a well-known influential factor in the banking context. The Partial Least Square Structural Equation Modeling (PLS-SEM) was used for analyzing its conceptual model and hypotheses. To test the hypotheses and model of this paper, a sample of 109 students as young consumers of new emerging e-banking technology was collected in Sweden. The findings support the negative relationship between loss emotions and effort expectancy as one of the cognitive factors of the UTAUT. Loss emotions could impact consumers' behavioral intentions through consumers' effort expectancy and performance expectancy. Moreover, the results show that perceived risk and performance expectancy are the strongest predictors of consumers' behavioral intention to adopt new emerging e-banking technology respectively while social influence and hedonic motivation do not show a statistically significant impact on consumers' behavioral intention. The present study contributes to previous research by examining the influence of a broad range of negative emotions on consumers' behavioral intention to adopt new e-banking technology. To the best of the author's knowledge, there exists no other study referring to this issue neither in the banking industry nor with the Swedish environment.

Keywords: new e-banking technology, UTAUT, negative emotions, perceived risk

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List of Abbreviations

IT………………………. Information Technology
IS……………………….Information System
IB…………………….... Internet Banking
MB………………..….. Mobile Banking
ATM……………………Automatic Teller Machine
TAM…………………… Technology Acceptance Model
MM…………………….. The Motivational Model of computer
IDT……………………...Innovation Diffusion Theory
UTAUT…………………The Unified Theory of Acceptance and Use of Technology model
TRA……………………..The theory of Reasoned Action
TPB……………………...Planned Behavior
CTPB……………………The Decomposed Theory of Planned Behavior
C-TAM-TPB…………….Combination of TAM and TPB
MPCU…………………...The Model of PC Utilization
SCT………………………Social Cognitive Theory
PE………………………...Performance Expectancy
EE………………………...Effort Expectancy
SI…………………………Social Influence
HM……………………….Hedonic Motivation
PCR………………………Perceived Risk
FR………………………..Financial Risk
PFR………………………Performance Risk
TR………………………. Time Risk
PR………………………..Privacy Risk
PLS-SEM………………..Partial Least Square Structural Equation Modeling
R^2 ………………………..The coefficient of determination (R^2).

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Chapter 1. Point of departure

1.1. Introduction

The banking industry is one of the influential economic industries that has gradually accompanied by changes in the market and has tried to respond to them constantly (Liao, et al., 1999; Yaseen & Qirem, 2018). These changes have varied from time to time and included different ranges such as new regulation or deregulation for the banking industry as consequences of a new government decision, alteration of consumers' preference because of changes in social trends, and different alterations because of information technology (IT) development (Gan , et al., 2006). One of the main alterations because of IT development in the banking industry is employing technology as a connection between banks' employees and consumers to deliver financial services. IT has changed person to person interaction to technology to person interaction where employees and consumers use technology to deliver and receive financial services (Joseph, et al., 1999). Therefore, IT advancement has considered one of the remarkable changes that have impacted the banking industry (Thornton & White, 2001; Gan , et al., 2006).

Different electronic financial service channels have been evolved as a consequence of IT advancement (Gan , et al., 2006). The presentation of new electronic financial services channels started in the early 1970s by introducing the Automatic Teller Machine (ATM) and followed by Telephone banking, Personal Computers, Internet Banking (IB), and Mobile Banking (MB) (Gan , et al., 2006). An umbrella term called electronic banking or e-banking has been applied to lump together all of these banking electronic services. Generally, e-banking has been defined as the automated delivery of bank products or services over electronic networks and internet technology (Daniel , 1999; Abbad, 2013). Since e-banking technology has progressed, the issue of consumers' behavioral intention to adopt new e-banking technology attract the managers, marketers, and researchers' attention in the banking industry. Investigation and determination of different influential factors that can encourage consumers to adopt new e-banking technology have provided a practical view for managers and marketers to predict consumers' behavioral intentions to adopt new emerging e-banking technology.

In order to determine influential factors on the adoption of new e-banking services, different studies in the financial and banking scope (Kolodinsky, et al., 2004; Kaabachi, et al., 2019; Arora & Sandhu, 2018; Raza, et al., 2019; Yaseen & Qirem, 2018; Yousafzai , et al., 2009) have applied different models of technology adoption such as Technology Acceptance Model (TAM) (Davis, 1989; Davis, et al., 1992), the Motivational Model of computer (MM) (Davis, et al., 1992), the Innovation Diffusion Theory (IDT) (Rogers, 1995), and the Unified Theory of Acceptance and Use of Technology model (UTAUT$_{1\&2}$) (Venkatesh, et al., 2003; Venkatesh, et al., 2012; Beaudry & Pinsonneault, 2010). These theories/models of technology adoption have been developed over the years in the IT context and provide a framework to investigate technology adoption in different contexts such as the banking industry (Kolodinsky, et al., 2004). Hence, different models of e-banking technology adoption have been extended by applying different models of technology adoption.

Models of technology adoption in the e-banking context determine some influential cognitive and non-cognitive factors such as relative advantages (Liao, et al., 1999; Kolodinsky, et al., 2004; Ayo , et al., 2016), perceived usefulness and ease of use (Wan, et al., 2005; Jahangir & Begum, 2008; Arora & Sandhu , 2018), effort expectancy and performance expectancy (Yaseen & Qirem, 2018; Raza, et al., 2019; Kaabachi, et al., 2019) perceived risk (Liao, et al., 1999; Odumeru , 2012; Takele & Sira, 2013; Simiyu, et al., 2018), trust (Alalwan, et al., 2015; Sánchez-Torres, et al., 2018; Alalwan, et al., 2014), self-efficacy, awareness, (Anouze & Alamro , 2019; Alalwan, et al., 2015), and government support (Sánchez-Torres, et al., 2018). Some others (Lee & Lee, 2000; Kolodinsky, et al., 2004; Wan, et al., 2005; Odumeru , 2012) have also suggested some influential personal characteristic factors such as age, gender, income, and education.

Although some of these studies consider the role of non-cognitive factors such as consumers' self-efficacy (Anouze & Alamro , 2019), many of them have focused on the impact of utilitarian and functional aspects of technology on consumers' behavioral intention to adopt new e-banking technology. For example, they have tried to examine whether the degree of consumers perception about the ease of use of a new e-banking technology can impact their adoption behavior (Wan, et al., 2005; Jahangir & Begum, 2008; Alalwan, et al., 2015; Sánchez-Torres, et al., 2018; Simiyu, et al., 2018; Yaseen & Qirem, 2018; Raza, et al., 2019). It is important to consider technology adoption behavior is a complex process, especially in the banking sector (Yousafzai, 2012). This complexity is because of the constant interaction between consumers' personal, social, and psychological aspects and functional, utilitarian and instrumental aspects of banking technology that eventually make consumers reach a final decision (Yousafzai, 2012). Therefore, there is a need for more investigation about the influence of non-cognitive factors on consumers' behavioral intention to adopt a new e-banking technology.

One of the validated influential non-cognitive factors is emotion. Beaudry and Pinsonneault (2010) in the IT context highlight the role of emotions as a non-cognitive factor in the adoption of new technology. They argue that cognitive factors do not take hold of all the antecedents of behavior and apart from cognitive factors, non-cognitive factors such as emotion can have a significant impact on the adoption of new technology (Russell, 2003; Beaudry & Pinsonneault, 2010). Emotion plays a significant role in an individual's thinking, attitude, decision making, and action (Mehrabian & Russell, 1974).

Most of the studies in e-banking scope have looked at how using e-banking technologies (IB and MB) can trigger consumers' positive emotions such as enjoyment, fun, and pleasure and how these emotions impact subsequent consumers' attitude, behavioral intention, and usage behavior (Salhieh , et al., 2011; Odumeru , 2012; Abbad, 2013). Although a few research pays attention to particular negative emotions like consumers' level of technology anxiety in the e-banking context (Yuen, et al., 2010; Yang & Forney, 2013), there is a need for examining how a broad range of negative emotions towards new e-banking technology can influence consumers' behavioral intention to adopt new e-banking technology. Cenfetelli (2004) applied a broad range of negative and positive emotions in e-business context and show that negative

emotions involved in technology have a stronger influence than positive emotions on consumers' behavioral intention.

Hence, it seems that consumers' negative emotions towards new technology may also have influence on their behavioral intention to adopt new emerging e-banking technology. Therefore, the target of this paper has been structured to examine the influence of consumers' negative emotions as a barrier to the adoption of new emerging trends in e-banking technology such as digital currency, mobile wallet, and website customization.

1.2. Problem background

While the gravity of positive emotions has been identified in former researches of financial and banking technology adoption (e.g., enjoyment) (Pikkarainen , et al., 2004; Salhieh, et al., 2011; Odumeru , 2012; Abbad, 2013; Rodrigues, et al., 2016; Santini , et al., 2019), the role of negative emotions has partially neglected in this area (Yousafzai, 2012). According to Shaikh and Karjaluoto (2015), around 36 studies from January 2005 to March 2014 tried to determine the role of perceived enjoyment as a kind of positive emotion in mobile banking adoption scope (Shaikh & Karjaluoto, 2015) whereas there is not any reported about negative emotions and their influence on the context of new emerging banking technology.

In the IT context, the impact of emotions on individual behavioral intention to adopt new technology has been investigated with different terms and aspects like affective variables (include individual's positive and negative feeling such as joy, elation, pleasure, depression, distance, and discontentment) (Venkatesh, 2000), computer or technological anxiety (Venkatesh, 2000; Saadé & Kira, 2006), the stimulus-organism-response framework (Lee, et al., 2011), PAD (pleasure, arousal, dominance) (Kulviwat, et al., 2007), and anxiety to use (Yang & Forney, 2013). Cenfetelli (2004) shows that in comparison with positive emotions, negative emotions have a more powerful impact on consumers' intentions to use new technology in e-business context (Cenfetelli, 2004). A relatively comprehensive framework (an appraisal tendency framework) is developed by Beaudry and Pinsonneault (2010) that categorize emotions towards new technology into four quarters namely Achievement Emotion (e.g., happiness), Challenge Emotion (e.g., excitement), Loss Emotion (e.g., anger), and Deterrence Emotion (e.g., anxiety).

Apart from hedonic motivation (like enjoyment) that already have been used in the previous models of banking technology adoption (Shaikh & Karjaluoto, 2015), based on this study it can be assumed that other emotions like loss emotions and deterrence emotions can possibly impact on consumers' intention to the adoption and usage of new emerging e-banking technology. However, this issue has hardly ever investigated.

1.3. Purpose of the study

The purpose of this study is to investigate whether consumers' negative emotions (e.g. anger, anxiety, frustration, worried, and stressed) toward new e-banking technology influence their behavioral intention to adopt new emerging e-banking technology. A conceptual model has been outlined in order to determine consumers' behavioral intention to adopt new emerging

banking technology with the help of the UTAUT model and the concept of Loss Emotion and Deterrence Emotion extracted from the study of Beaudry and Pinsonneault (2010).

1.4. Division of this thesis

In the following, in the theoretical background (chapter 2), I first try to provide a relatively comprehensive view of the technology adoption models in the IT context and the role of emotion in these models. In this part, emotion definition in the IT context and its difference with some similar concepts such as mood and attitude are explained. At the end of this part, the direction of technology adoption models and emotion in this paper are determined with the help of the theoretical background. In the third chapter, I discuss different research in the e-banking scope which has investigated the role of emotion. The conceptual model of this paper and the hypothesis are described in the end of this chapter. Chapter 4 includes the research method, and chapter 5 presents the discussion, conclusion, managerial aspect, and research limitation, and future research.

Chapter 2. Theoretical background

2.1. The history of technology adoption models

2.1.1. Definition of technology
The definition of technology as a word is difficult because technology can have a broad concept from tangible products that human use like machines to different concepts like systems or techniques. Generally, human alters nature to satisfy their need with the help of technology and also use it as a means of diffusion of knowledge and information (Oye, et al., 2014).

2.1.2. Alternative models of technology adoption in IT context
The theories/models of technology adoption have progressed over the years. This progress is based on the theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975) which is one of the forerunners and mostly-used theory of human behavior in developing the process of technology adoption models (Dwivedi, et al., 2019). The TRA describes the individual behavior intention that is influenced by *individuals' attitudes toward behavior* and *surrounding subjective norms* (Oye, et al., 2014; Dwivedi, et al., 2019). This theory was the basis for developing two Theories of Planned Behavior (TPB) (Ajzen, 1991) and Technology Acceptance Model (TAM) (Davis, 1989; Davis, et al., 1989; Dwivedi, et al., 2019).

The TPB model explains that the user's behavioral intention that is impacted by the user's attitude, subjective norms, and perceptions of behavioral control determines the user's action. This theory provided a useful theoretical structure that helps to understand and forecast the adoption of new technology in the context of information system (IS) and information technology (IT) (Dwivedi, et al., 2019).

The TAM model describes users' behavioral attitudes toward using new technology by three predictor variables named perceived ease of use, perceived usefulness, and external variables. Behavioral intention to use and consequently actual system use can be predicted by attitude toward using a system based on this model (Figure 1) (Davis, et al., 1989). Perceived ease of use and usefulness as two powerful predictors of users' attitudes in this model defined as the level that using a new particular technology is free of effort and the level that using a new particular technology would enhance users' performance respectively. This model is also one of the most frequent technology adoption models that are applied and extended in the e-banking technology context.

Figure 1: Technology acceptance model (TAM) (Davis, 1989)
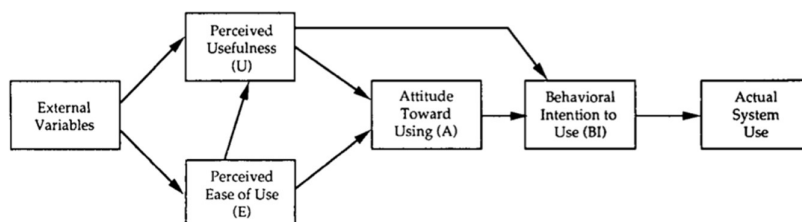
In order to provide a more comprehensive framework of technology adaption, the Decomposed Theory of Planned Behavior (CTPB) which is a kind of combination of TAM and TPB theories (Taylor & Todd, 1995) was presented. The other combination of TAM and TPB theories is C-TAM-TPB model (Taylor & Todd, 1995) that applied *perceived usefulness* from TAM models. Furthermore, the TAM model was extended by removing the external variable and replacing it with some new external tangible variables named subjective norms, image, job relevance, output quality, result demonstrability (Venkatesh & Davis, 2000).

A competing direction to TRA and TPB models derived from the theory of human behavior presented by Triandis (1997). The model of PC utilization (MPCU) was updated and derived by Thompson et al. (1991) from Triandis's model in the IS/IT context with the respect to usage behavior instead of intention (Dwivedi, et al., 2019). Other theories related to the technology adoption concept are the motivational model (MM) of computer (Davis, et al., 1992), the innovation diffusion theory (IDT) (Rogers, 1995), and Social cognitive theory (SCT) (Bandura, 1986). The characteristic of innovation in the IDT model was tailored and refined to apply for individual technology adoption (Moore & Benbasat, 1991) and the theory of SCT also was extended from the perspective of computer utilization (Compeau & Higgins, 1995; Dwivedi, et al., 2019). All these models were considered to conceptualize a new model of technology adoption named the unified theory of acceptance and use of technology model (UTAUT).

2.1.3. The unified theory of acceptance and use of technology model (UTAUT)

The UTAUT model is the consequence of other theories and models of technology adoption. It compressed the 32 variables of TRA, TAM, TPB, C-TAM-TPB, MM, MPCU, SCT, and IDT models into four main influential factors as well as four mediated variables to relatively cover all important aspects of them (Oye, et al., 2014; Tak & Panwar, 2017; Dwivedi, et al., 2019). The first model of the UTAUT was created by Venkatesh, Morris, Davis, and Davis in 2003 which can predict around 70% of individual's behavioral intention to use technology and 50% of technology use in the organizational context. These percentages of variance show a significant improvement over previous models, especially TAM model rates (TAM model forecast these variables between 30% and 40% respectively) (Oye, et al., 2014; Dwivedi, et al., 2019). Four main determination of usage and intention namely *performance expectancy*, *effort expectancy*, *social influence*, and *facilitating conditions* were applied in the first model of UTAUT. Moreover, four factors of *age*, *gender*, *experience*, and *voluntariness of use* were employed as mediated variables (Figure 2) (Venkatesh, et al., 2003).

Performance expectancy points out the level of individual perception about the *usefulness* of new innovation and its function in improving her/his performance. It pertains to five variables namely perceived usefulness ($TAM_{1,2}$) (Davis, 1989; Davis, et al., 1989), extrinsic motivation (MM) (Davis, 1993), job-fit (Thompson, et al., 1991) relative advantage (Moore & Benbasat, 1991), and outcome expectations (Compeau, et al., 1999). *Effort expectancy* refers to the degree of individual perception about the innovation and its *easiness to use*. Three variables of perceived ease of use (Davis, 1989; Davis, et al., 1989), complexity (Thompson, et al., 1991),

and ease of use (Moore & Benbasat, 1991) are considered as roots of effort expectancy. *Social influence* points out the level of perception that an individual realizes that a significant person expects that he/she should use the innovation and ultimately, *facilitating condition* measure the level of individual perception about the degree of organizational and technical infrastructure that exist for assisting the use of the system (Rodriguesa, et al., 2016).

The first model of the UTAUT was initially developed to indicate employees' technology adoption and use, afterward the second model of the UTAUT was extended in the context of consumers' technology adoption to critically investigate how this model can be developed to other ground (Venkatesh, et al., 2012). The second model of the UTAUT added three new effect variables while dropped the voluntariness of use as the mediated variable (Figure 3). New variables involve *hedonic motivation*, *price value*, and *habit*. *Hedonic motivation*, which has been indicated to act significantly as a forecaster of consumers' behavioral intention, refers to the fun or pleasure that may come from using technology. *Price value* points out the level of consumer cognition about the degree of benefits that she/he perceive in comparison to the amount of money cost for using new technology. When the monetary cost is perceived lower than the benefits of using technology, the price value is positive and such price value will have a positive influence on consumers' behavioral intention. Finally, *habit* refers to behaviors that people perform automatically because of learning, therefore, there is a strong predictor of future technology use based on their previous use. In this case, habit measured based on self-reported perception (Venkatesh, et al., 2012).

Figure 2: The unified theory of acceptance and use of technology model (UTAUT$_1$) (Venkatesh, et al., 2003)
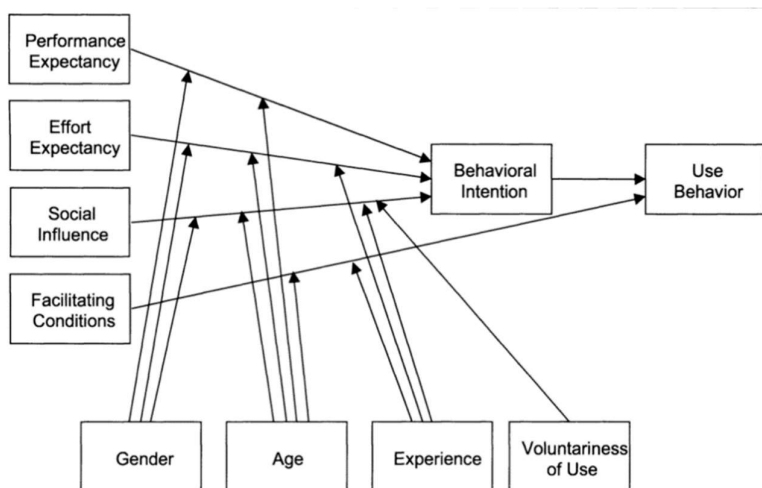
The UTAUT$_2$ model not only pays attention to the emotional variable namely *hedonic motivation* also, has exclusively applied the model in the prediction of consumers' behavioral intention to adopt new technology. Nevertheless, this model does not consider the negative emotions and mainly focuses on the hedonic motivation that generally refers to the fun or pleasure emotions that may come from using new technology and have a positive influence on consumers' behavioral intention (Venkatesh, et al., 2012). Since negative emotions may

simultaneously have a significant influence (negatively) on consumers' intention to adopt new technology, some studies in the IT/IS context have studied this concept.

2.2. Emotion and the models of technology adoption

In order to avoid confusion about various emotion-related concepts (affective, attitude, and mood) and their relations, the first step in this section is to clarify the meaning of emotion with the respect to new technology adoption context.
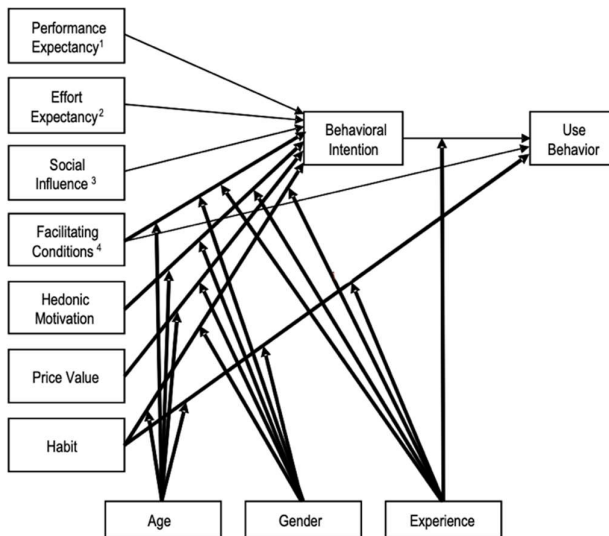
Figure 3: The unified theory of acceptance and use of technology model (UTAUT$_2$) (Venkatesh, et al., 2012)

2.2.1 Affective

Affective is an umbrella term that refers to a set of concepts related to emotion, moods, and feelings. Affective-related concepts such as attitude, satisfaction, emotional usability, computer playfulness, cognitive absorption, hedonic motivation, computer anxiety have been studied not only in the IT/IS context (Zhang, 2013), also have been applied in the e-banking context (Santini , et al., 2019). Thus, affective is broaden than emotion and points out a set of concepts that can be very different from each other (Russell, 2003; Zhang, 2013).

2.2.2 Attitude

In the TAM model, attitude is considered as a predictor of users' behavioral intention toward new technology. Some other revised models also applied attitude as an influential factor. Attitude in these models is often misinterpreted emotion while attitude and emotion are totally distinct concepts. Attitude is a kind of judgment that is the result of an individual's evaluation. Attitude points out readiness to respond while emotions are a response to a stimulus of a subject and are not as stable as attitude. For example, an individual may like or do not like something that refers to her/his attitude while emotions such as anxiety evoke to respond to a particular subject and its stimulus (Fishbein & Ajzen, 1975; Bagozzi, et al., 1999). Thus, different factors involving cognitive (Davis, 1989) and non-cognitive like emotion (Cenfetelli, 2004) factors can influence an individual's attitude.

2.2.3 Mood

The distinguish between emotion and mood can be explained by considering two characteristics of affect involving duration and object. Moods are measured in a longer period than emotion like hours or days while emotion is measured in seconds or minutes. In other words, the widespread mood is the common state of the individual and does not rely on the stimulus of an object (Bagozzi, et al., 1999).

2.2.4. Definition of emotion with the respect to technology adaption context

Generally, emotion is defined as a mental state of readiness that cultivates behavioral actions and aids individual to organize her/his behavior to the response of objects' stimulus. Hence, emotions impact an individual's behaviors and evoke in response to the appraisal of an event that individuals perceived it relevant or important (Bagozzi, et al., 1999). Emotions like anxiety, anger, and happiness are the result of the moment that individuals' routines are interrupted by new technological products or services. These emotions can be evoked before using new technological products or services (anticipation period), kind of consciousness of a future interruption, or after using them (impact period) (Beaudry & Pinsonneault, 2010). For example, the meaning of computer anxiety that Venkatesh (2000) explained it as the consequence of people's underlying assumptions about computer can be considered as the consciousness of a future interruption (Venkatesh, 2000).

2.2.5. The role of emotion in the technology adoption models

Emotion-related models in the context of technology adoption have a history that mostly related to computer use. Anxiety and enjoyment are the most frequent emotions that are applied to different models of technology adoption. Apart from positive emotions that are not the target of this paper, the impact of computer anxiety on users' usage is the most repetitive negative emotions that have been employed by scholars in the technology adoption context. As a general view, different research has approved the negative influence of computer anxiety on the usage of computers (Todman & Monaghan, 1994; Compeau & Higgin, 1995). Venkatesh (2000) shows that anxiety impact the perceived ease of use as one of the key predictors of users' attitude in the TAM model. Continuously, researches approved the influence of computer anxiety on users' behavioral intention through effort expectancy that refers to perceived ease of use in the TAM model (Venkatesh, et al., 2003).

They argue that computer anxiety is a kind of system-independent factor that can play an important role in forming perceived ease of use or effort expectancy. Some other research also tried to investigate the role of anxiety in the context of technology adoption (Table 1).

Table 1- Emotion in the IT context

Authors	Year	Country	Related significant relationships	Sample	Period of time
Todman et al.	1994	UK	computer anxiety >Usage behavior	180 first year psychology students	impact period
Compeau & Higgin	1995	Canada	Affect > Usage behavior Anxiety > Usage behavior	1020 knowledge workers	impact period
Compeau et.al	1999	Canada	Anxiety > Usage behavior	394 subscribers of a business periodical	impact period
Venkatesh et al.	2003	USA	Attitude >EE>BI Anxiety>EE >BI	54, 65, 58, 38, 80, 53 users in entertainment, telecomm service, banking, public administration, financial services, retail electronics organizations respectively	initial time
Cenfetelli	2004	Canada	Positive emotion >PEU Negative emotion >PEU Positive emotion >Usage intention	387 e-business consumers	impact period
Brown et al.	2004	USA	Compouter anxiety > CMC Anxiety CMC Anxiety > Usage behavior	193 university students	impact period
Beaudry & Pinsonneault	2010	Canada	Excitement >taks adoption >IT Use Exitement>seeking instrumental support Anger seeking >social support >IT use (positively both relations) Anger >venting Anxiety >seeking social support >IT use (positively both relation) Anxiety >social distancing (positively) >IT use (negatively)	249 account managers in two banks	annoncemet period
Read et al.	2011	Australia	Emotional attachment to paper books is found to be weakly and negatively associated with consumers' attitude toward using e-readers.	451 e-reader consumers	impact period
Donmez-Turan	2019	Turky	User anxiety >adoption readiness >attitude (both negatively)	262 administrative personnel working in a public university	impact period

Note: EE=Effort Expectancy; BI= Behavioral Intention; PEU= Perceived Ease of Use; CMC= Computer-Mediated Communication

Most studies in this concept are limited to anxiety and enjoyment emotions and there is a few research that have applied more emotion ranges (Partala & Saari, 2015). Cenfetelli (2004) tried to investigate the influence of a broad range of negative and positive emotions on the TAM model and found that not only negative emotions were negatively related to perceived ease of use in the TAM model, also the influence of negative emotions are stronger than positive emotions. Another attempt is the study of Beaudry and Pinsonneault (2010) which is a relatively comprehensive study in this context. They developed a framework of four class of emotions named Achievement emotions (happiness, satisfaction, pleasure, relief, enjoyment),

Challenge emotions (excitement, hope, anticipation, arousal, playfulness, flow), Loss emotions (anger, dissatisfaction, disappointment, annoyed, frustration, disgust), and Deterrence emotions (anxiety, fear, worry, distress).
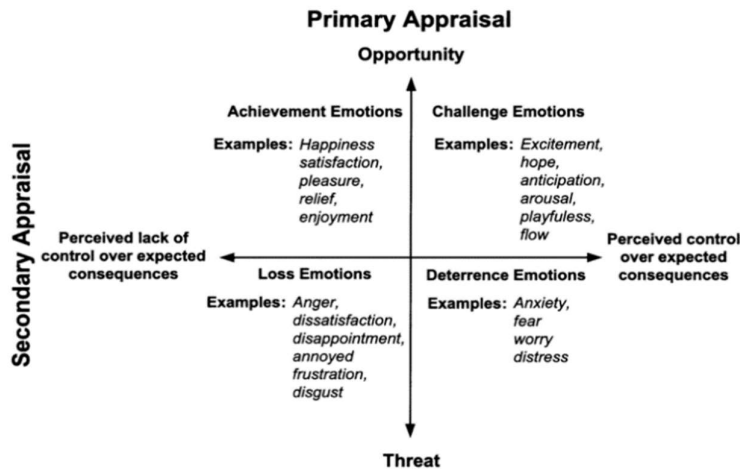
Figure 4: Emotional framework in the context of technology adoption (Beaudry & Pinsonneault, 2010)

This framework was conceptualized based on two dimensions of primary appraisal and secondary appraisal. Primary appraisal refers to whether an individual specifies a new information technology is an opportunity or threat. The meaning of opportunity in their view defined as the level an individual perceives a new technology as a possibility to help her/him to reach her/his target. Secondary appraisal points out an individual perception of control over expected outcomes of new given technology (Figure 4). This study investigated bank account managers' emotion in the anticipated period and indicates the direct and indirect influence of emotion on IT use.

2.3. The direction of technology adoption models in this paper

This paper aims to focus on the revised models of UTAUT$_{1\&2}$ in the e-banking context. This thesis will use the UTAUT$_{1\&2}$ models as the fundamental concept for characterizing its proposed model. The UTAUT$_{1\&2}$ models not only include the most variables of previous models of technology adoption but also in comparison to other technology adoption models, determine more precisely an individual's behavioral intention to adopt new technology (predict around 70% of an individual's behavioral intention to use technology).

Some research in the e-banking technology adoption try to extend the different models of technology adoption such as the TAM and the UTAUT$_{1\&2}$ models by adding new factors like perceived risk (Liao, et al., 1999; Odumeru , 2012; Takele & Sira, 2013; Simiyu, et al., 2018) and trust (Alalwan, et al., 2015; Sánchez-Torres, et al., 2018; Alalwan, et al., 2014). They argue that these new factors are important for consumers in the financial markets. Some others just focused on the main factors of the UTAUT$_{1\&2}$ models and try to show which factors are the most powerful predictor for the prediction of consumers' behavioral intention to adopt e-banking technology.

This paper tried to go further and dig especially in e-banking articles to find the role of different cognitive factors in the e-banking context. It is important to mention that because of the huge numbers of articles that have been used different models of technology adoption in the banking and financial context, the researcher tried to narrow articles in this scope with four main dimensions namely e-banking, MB, IB, and the UTAUT models. The results of this investigation (Appendix 1 and 2) illustrate that there is not a general agreement about the influence of different cognitive factors of the $UTAUT_{1\&2}$ on consumers' behavioral intention in the e-banking context.

By considering the fluctuation in the results of different researches in this context (Appendix 1 and 2), this paper concentrates on the four independent variables of the $UTAUT_{1\&2}$ models namely performance expectancy, effort expectancy, social influence, and hedonic motivation. In addition, one extra factor related to the e-banking concept namely perceived risk is considered to the model. It seems that apart from different variables of technology adoption models, perceived risk is one of the most approved variables that has been used in the revised models of the $UTAUT_{1\&2}$. This factor appears as one of the strongest predictors in the context of e-banking, MB, and IB. (Liao, et al., 1999; Kolodinsky, et al., 2004; Odumeru , 2012; Takele & Sira, 2013; Simiyu, et al., 2018; Alalwan, et al., 2014; Martinsa, et al., 2014; Tan & Lau, 2016; Makanyeza & Mutambayashata, 2018).

This consideration has been done to reach a more precise model based on analyzing previous researches (Appendix 1 and 2) as well as considering the target of this study. Most of the research has proved the influence of performance expectancy and effort expectancy on consumers' behavioral intention to adopt e-banking technology (include MB and IB) (AbuShanab & Pearson, 2007; Yuen, et al., 2010; Yang & Forney, 2013; Martinsa, et al., 2014). It is argued that the degree of usefulness and easiness of a new e-banking technology perceived by consumers can impact their intention to adopt new e-banking technology. Much research has also shown the influence of effort expectancy on behavioral intention to adopt new e-banking technology through performance expectancy (Yuen, et al., 2010; Zhou , et al., 2010; Tan & Lau, 2016; Wang, et al., 2017).These results show that consumers' perceptions about the usefulness of a new e-banking technology influenced by the degree that they perceive a new e-banking technology easy to use. Therefore, two variables of performance expectancy and effort expectancy have used in the conceptual model of this study since these variables are the most validated influential factors in the adoption of new e-banking technology according to analyzing the results of previous studies (Appendix 1 and 2).

Social influence has been investigated as another influential factor to show how an individual can be affected by the belief of her/his surrounding people about using a new technology. Although some research have not supported the impact of social influence on consumers' intention to adopt new e-banking technology (Yuen, et al., 2010; Alalwana, et al., 2017; Makanyeza & Mutambayashata, 2018), many others have proved it (AbuShanab & Pearson, 2007; Zhou , et al., 2010; Yu, 2012; Yang & Forney, 2013; Martinsa, et al., 2014; Tan & Lau, 2016; Yaseen & Qirem, 2018; Giovanis, et al., 2019). Hence, the researcher decided to consider this factor because not only more numbers of studies in the e-banking context have approved the influence of this factor on consumers' behavioral intention, also an influential relationship

between social influence and negative emotion has been reported in the information technology context. (Beaudry & Pinsonneault, 2010).

Researches have also shown the fluctuation results about the influence of hedonic motivation on consumers' intention to adopt e-banking technology (Alalwana, et al., 2017; Yaseen & Qirem, 2018; Raza, et al., 2019). They have not reached an agreement on whether consumers' perception of enjoyment and fun that may come from using a new e-banking technology can influence their behavioral intention to adopt it. However, examining this factor can provide a possibility to compare the influence of negative emotions to positive emotions. Thus, hedonic motivation has been considered in the proposed model.

Finally, it seems that research have not reached a consensus on the influence of facilitating condition on consumers' intention to adopt new e-banking technology (Zhou , et al., 2010; Yu, 2012; Yang & Forney, 2013; Alalwana, et al., 2017; Rahia, et al., 2018; Raza, et al., 2019). These studies aim to examine whether the level of individual perception about the degree of technical infrastructure existed for assisting the use of new e-banking technology influence consumers' behavioral intention to adopt a new e-banking technology. According to Appendix 1 and 2, studies have not shown a relationship between facilitating condition with consumers' negative or positive emotions. Similarly, studies in the e-banking context do not show a relationship between consumers' positive or negative emotions with two other main variables namely price value and habit.

Thus, this paper has followed other research in this context and dropped facilitating condition as well as two other independent variables of habit and price values and three moderated variables of age, gender, and experience (AbuShanab & Pearson, 2007; Yuen, et al., 2010; Zhou , et al., 2010; Yang & Forney, 2013; Martinsa, et al., 2014; Tan & Lau, 2016)

2.4. Emotion direction of this paper

This thesis will follow Beaudry and Pinsonneault's (2010) path and aims to examine the impact of consumers' negative emotions on their behavioral intention to adopt new emerging e-banking technology. The study of Beaudry and Pinsonneault (2010) was done in the organization context and its sample was employees. They tried to investigate employees' emotions in the anticipated period of using a new technology. It should be considered that employees have to adopt new technology whereas consumers have the decision-making power to either adopt new technology or refuse it. However, in the consumers context, emotions not only are possibly perceived by consumers after launching a new technology product or service in the market (impact period), also may be found by them in the prior time or before using new technological products or services (announcement time that can also be considered as advertisement time in the consumers context) (Venkatesh, et al., 2012).

In the context of e-banking technology, new emerging e-banking technology like digital currency, mobile wallet, and website customization have been already presented and advertised in the markets (Yusuf Dauda & Lee, 2015). Therefore, a vast majority of consumers can recognize these new emerging e-banking technologies because they may have used it or at least

heard about them. This recognition may play as a stimulus that likely evokes consumers' negative emotions. This condition provides a proper possibility to investigate their negative emotions towards new emerging e-banking technology.

Chapter 3. Literature review, conceptual model and hypotheses

3.1. Literature review

3.1.1. Emotion in e-banking technology adoption models

The result of the impact of emotion on consumers' e-banking adoption fluctuates in different researches. While some research has approved the role of emotion in the prediction of consumers' behavioral intention toward e-banking technology adoption, others have not approved this relation. Odumeru (2012) indicates the influence of perceived enjoyment on consumers' acceptance of e-banking. Abbad (2013) not only approved the direct influential role of enjoyment in the prediction of behavioral intention to use e-banking by testing an extended model of the TAM between 319 non-users of e-banking services, also indicates the indirect impact of enjoyment on consumers' behavioral intention to use e-banking through perceived ease of use and perceived usefulness. In the same way, Salhieh et al. (2011) indicate the influence of enjoyment as a part of their consumers' technology acceptance and readiness model on consumers' intention toward e-banking adoption and readiness. They argue when consumers find the usage of different channels of e-banking is an enjoyable experience, they probably accept using e-banking services. Santini et al. (2019) also have done a meta-analysis of a total of 142 articles in the banking context and shows perceived enjoyment have an impact on consumers' attitude and behavioral intention to use new banking technology.

The probable influential role of enjoyment has also been approved by applying the UTAUT model. Raza et al. (2019), Makanyeza and Mutambayashata (2018), and Alalwana et at. (2017) show that hedonic motivation as a part of the UTAUT model has an influence on consumers' intention to adopt and use e-banking technology like MB and IB. Whereas, Farah and et al. (2018) illustrate that hedonic motivation is the strongest predictor of consumers' behavioral intention toward adoption of MB, Gupta and Arora (2020) shows that this factor is the weak predictor of behavioral intention toward adoption of mobile payment systems. This contrasting result can also be found in other studies. Oliveira et al. (2016) and Kwateng et al. (2019) also show that hedonic motivation does not play an influential role in the prediction of behavioral intention to use MB. Similarly, Yaseen and Qirem (2018) applied a revised model of the UTAUT and illustrate that hedonic motivation does not influence behavioral intention to use e-banking. Moreover, Yuen et al. (2010) applied the extended version of the UTAUT model in both developed and developing countries and conclude that anxiety is not an influential factor of behavioral intention to use internet banking services. Table 2 shows a summary of some articles that investigate the role of emotion in the context of e-banking technology adoption.

Table 2- Emotion in the context of e-banking technology adoption

Authors	Year	Country	Related significant relationships	Sample
Yuen et al.	2010	USA Australia Malaysia	Both developing and Deveoped countries: Anxiety is not influential factors of behavioral intention to use internet banking services	766 IBS users
Salhieh et al.	2011	Jordan	Enjoyment influenceconsumers acceptance of e-banking cahnnels	60 managers in five departments in the banks 30 IT managers &150 bank customers
Odumeru	2012	Nigeria	Percived enjoyment influence the acceptance of e-banking	258 bank consumers
Abbad	2013	Jordan	Enjoymen influence Perceived usefulness Enjoymen influence Perceived ease of use Enjoyment influence intention to use e-banking directly Enjoyment influence intention to use e-banking through Perceived usefulness and Perceived ease of use	319 non-users of e- banking services
Oliveira et al.	2016	Portugal	Hedonic motivation is not influential factors of behavioral intention to use MB services	301 students and alumni from universities
Alalwan et al.	2016	Jordan	Hedonic motivation is an influential factors of behavioral intention to use MB services	323banking customers
Alalwana et al.	2017	Jordan	Hedonic motivation is an influential factors of behavioral intention to use MB services	343 banking customers.
Yaseen et al.	2018	Jordan	Hedonic motivation is not influential factors of behavioral intention to use MB services	348 customers who are using e-banking services
Makanyeza et al.	2018	Zimbabwe	Hedonic motivation is an influential factors of behavioral intention to adopt plastic money Usage behavior	528 consumers
Farah et al.	2018	pakistan	Hedonic motivation is the strongest predictor of behavioral intention to adopt plastic money Usage behavior	385 bank consumers
Oliveira et al.	2019	Brazil	Enjoyment perception is an influential factors of behavioral intention in banking services	a meta-analysis of a total of 142 articles
Raza et al.	2019	Pakistan	Hedonic motivation is an influential factors of behavioral intention to use MB services	299 users of Islamic banks
Kwateng et al.	2019	Ghana	Hedonic motivation is not influential factors of behavioral intention to use MB services	300 users of m-banking
Gupta& Arora	2020	India	Hedonic motivation is a weak predictor of behavioral intention to use mobile payment systems	267 mobile payment users

3.2. Conceptual model and hypotheses

3.2.1 Loss and deterrence emotions

Emotions such as anger, annoyed, dissatisfaction, frustration, and disgust are probably experienced when people confront an IT event (Beaudry & Pinsonneault, 2010). These kinds of emotions classified as Loss emotions reflect "*the perception of an IT event as a threat and the perception of a lack of control over its consequences*" (Beaudry & Pinsonneault, 2010, p. 694). In the context of a new technology event, the suggestion is that people who feel angry when confronted with a new technology normally try to overcome the new situation by seeking social support. These people usually look for understanding, advice, or support from their friends, family members, or colleagues (Bagozzi, et al., 1999). Anger as one emotion of Loss emotion class is positively relevant to looking for social support and indirectly influence the use of IT. This means that social support that can be considered similar to social influence in the UTAUT model plays a reversal role for an angry response. Social support can make angry respondents feel better and positively encourage them to use the new technology. Thus, it seems that the negative impact of loss emotions can be retaliated by social influence (Beaudry & Pinsonneault, 2010).

Emotion theories argue that different adoption and goal behaviors can be derived from different emotions from different classes (Bagozzi, et al., 1999; Han, et al., 2007) and as emotions are steered by the psychological and evaluative assessment of a new technology, different sets of emotions and emotional responses can be occurred by facing to a new technology (Beaudry & Pinsonneault, 2010). Therefore, this study for the coverage of other kinds of possible negative emotions considers Loss emotion as one main variable that measured with sub-variables of anger, annoyed, frustration, dissatisfaction, disappointment, and disgust and hypothesize that:

H_1: Loss Emotions have a significant effect on Social influence.

Emotions in the class of deterrence emotions such as anxiety, fear, worry, and distress are perceived when people assume a new technology as a threat but, in contrast to loss emotions, they feel some level of control over its consequences (Beaudry & Pinsonneault, 2010). Venkatesh (2000) shows that anxiety, one emotion of the deterrence emotions, is completely mediated by perceived ease of use in the technology acceptance model (TAM). The impact of anxiety on ease of use and perceived ease of use are examined and approved by different studies in the context of new technology (Venkatesh, 2000; Dickinson & Hill, 2007; Hackbarth, et al., 2003; Saadé & Kira, 2006; Cenfetelli, 2004). Similarly, the main study of the first version of the UTAUT model conjectured that anxiety is not a direct determinant of behavioral intention in the context of new technology and effort expectancy probably play a mediate role in the connection between anxiety and behavioral intention (Venkatesh, et al., 2003; Venkatesh, 2000). Moreover, Cenfetelli (2004) discusses the influence of a set of negative emotions involving unhappiness, worry, anger, nervousness, regret, disgust, fear, anxiety, and irritation (both loss and deterrence emotions) on perceived ease of use and shows that negative emotions have a stronger impact than the positive one. In addition, in the context of IT use, Beaudry & Pinsonneault (2010) discuss that the influence of anxiety (as one emotion of deterrence emotion

class) on IT use is positively associated with seeking social support. Therefore, this paper hypothesizes that:

H$_2$: Loss emotions have a significant influence on Effort expectancy.
H$_3$: Deterrence emotions have a significant influence on Effort expectancy.
H$_4$: Deterrence emotion have a significant influence on Social influence.

Figure 5: The proposed conceptual model
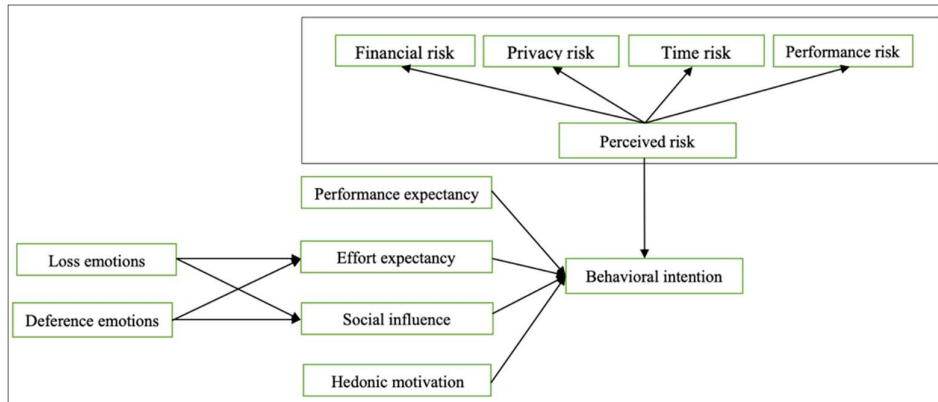
3.2.2. Performance expectancy
Performance expectancy points out the user's belief about the degree of benefits handed over by using a particular technology in carrying out certain activities (Venkatesh, et al., 2012; Venkatesh, et al., 2003). Although Yaseen and Qirem (2018) indicate that performance expectancy is not an influential factor in determining consumers' behavioral intention to use e-banking in Jordan, this variable as one the most approval and compatible concept in the acceptance technological innovation have been extensively verified regarding the e-banking and e-commerce field (AbuShanab & Pearson, 2007; Yuen, et al., 2010; Yang & Forney, 2013; Martinsa, et al., 2014; Sánchez-Torres, et al., 2018; Raza, et al., 2019).

H$_5$: The performance expectancy has a significant influence on consumers' behavioral intention to use a new emerging e-banking technology.

3.2.3. Effort expectancy
Effort expectancy refers to the level of ease associated with the usage of new technology (Venkatesh, et al., 2003). If a user finds technology easy to use, their willingness to use it will increase. In other words, the more easiness of technology, the more adoption rate (Lewis, et al., 2010). A positive attitude towards new financial application will be created, if consumers perceived it as an interface that is user friendly (Mazhar, et al., 2014; Raza, et al., 2019). In the same way, effort expectancy has also been identified as a significant predictor in the different revised models of UTAU in the context of e-banking adoption (Yaseen & Qirem, 2018; Sánchez-Torres, et al., 2018). Moreover, the influence of effort expectancy on behavioral intention to adopt new e-banking technology through performance expectancy has been

approved by many research (Yuen, et al., 2010; Zhou , et al., 2010; Tan & Lau, 2016; Wang, et al., 2017). Hence, the following hypothesizes are suggested:

H_6: The effort expectancy has a significant influence on consumers' behavioral intention to use a new emerging e-banking technology.

H_7: The effort expectancy has a significant influence on performance expectancy.

3.2.4. Social influence

Social influence refers to the level to which an individual perceives the importance of other's opinions or beliefs about her/his use of new technology (Venkatesh, et al., 2003). This concept has been extended to banking's consumers' beliefs that explains how an individual perceives other's belief importance about her/his acceptance and usage of e-banking services (Venkatesh, et al., 2012; Yaseen & Qirem, 2018). While some research did not approve the impact of social influence on consumer's behavioral intention (Yuen, et al., 2010; Alalwana, et al., 2017; Makanyeza & Mutambayashata, 2018), some other research point out social influence as a critical determinant in predicting or determining people's behavioral intention to use e-banking services (Zhou , et al., 2010; Yu, 2012; Yang & Forney, 2013; Alam, 2014; Martinsa, et al., 2014; Yaseen & Qirem, 2018). Although there is not a consensus for the influential role of social influence in the e-banking context, this study decided to consider this factor because of its probable mediated role between consumers' negative emotions and their behavioral intention. Thus, based on previous studies this paper posits that:

H_8: The social influence has a significant influence on people's behavioral intention to use a new emerging e-banking technology.

3.2.5. Hedonic motivation

Basically, Venkatesh et al. (2012) suggest the direct influential role of hedonic motivation in determining consumers' behavioral intention to use new technology. Hedonic motivation refers to the fun, pleasure, and enjoyment that may come from using technology. Over the IT/ IS context, Abbad (2013) also indicate the impact of this factor on consumers' behavioral intention to adopt new e-banking technology. Although Yaseen and Qiren (2018), Kwateng and et al. (2019), Gupta and Arora (2019) do not find a significant relationship between hedonic motivation and consumers' behavioral intention to use e-Banking and MB, Alalwana et al. (2017), Makanyeza and Mutambayashata (2018), Farah et al. (2018), show that hedonic motivation can encourage consumers to adopt and use MB. However, in order to re-examine the influential role of this factor in the e-banking context the following hypothesis is suggested:

H_9: The hedonic motivation has a significant influence on people's behavioral intention to adopt new emerging e-banking technology.

3.2.6. Perceived risk

Perceived risk is defined as the level of uncertainty that corresponds with the usage of new technology (Tan & Lau, 2016). The impact of perceived risk on consumers' behavioral intention in the e-banking context has been especially studied in two specific areas namely MB and IB (Alalwan, et al., 2014; Farah, et al., 2018; Giovanis, et al., 2019). Riquelme and Rios (2010) indicate that the consumers' willingness to adopt MB is negatively influenced by increasing the degree of perceived risk. Tan and Lau (2016) show that perceived risk is one of the strongest predictors of consumers' behavioral intention to adopt MB. Martins et al. (2014) indicate that considering the perceived risk in the UTAUT1 model can increase its predictive power in determining consumers' behavioral intention to adopt IB. They explain while performance expectancy, effort expectancy, and social influence are connected to consumers' behavioral intention, perceived risk is a stronger predictor of intention to adopt IB. Cunningham (1967) decomposed perceived risk into six dimensions named performance, financial, time/opportunity, safety, social, and psychological risk. Featherman and Pavlou (2003) used this category while dropped safely dimension from it and add privacy risk. They typified perceived risk as having seven facets named performance, financial, privacy, psychology, social, and overall risk and indicated how these factors can act as negative utilities to e-service adoption. They show collinearity between four dimensions of perceived risk namely financial, time, privacy, and performance, and conclude that the most salient concern for perceived risk is performance-related dimensions namely performance, financial, time, and privacy risk. Similarly, Martins et al. (2014) prove that performance, financial, time, and privacy risks are the most salient concern for perceived risk in the internet banking adoption context. Therefore, in order to investigate the role of perceived risk in determining consumers' behavioral intention to adopt new emerging e-banking, perceived risk can be hypothesized:

H_{10}: The second order factor of four salient risks is perceived risk.

H_{10a}: Perceived risk has a significant influence on performance risk.

H_{10b}: Perceived risk has a significant influence on financial risk.

H_{10c}: Perceived risk has a significant influence on privacy risk.

H_{10d}: Perceived risk has a significant influence on time risk.

H_{11}: The perceived risk has a significant influence on people's behavioral intention to adopt new emerging e-banking technology.

Chapter 4. Research method and empirical results

4.1. Research approach

As it was mentioned before in the body of this paper, the target of current research is to determine influential factors of customers' behavioral intention to adopt new emerging e-banking technology. Similar to other research in this context (Arias-Oliva, et al., 2019; Beaudry & Pinsonneault, 2010; Kolodinsky, et al., 2004), it seems that the questions of this paper characterized based on its target can be answered with the help of quantitative research methodology. Therefore, as a philosophical view, current research relatively aligned the positivism approach.

Generally, social scientists try to investigate social phenomena with the help of research methodologies (Holden & Lynch, 2004). Quantitative and qualitative methodologies are two main and most popular forms of research methodologies in the context of social science that are grounded on positivism and interpretivism paradigms respectively (Tuli, 2010). Description of positivism and interpretivism paradigms indicate how different philosophical assumptions about the nature of social reality (named ontology) and the nature of knowledge (named epistemology) are the underlying core of selecting quantitative and qualitative research methodology (Tuli, 2010).

Epistemology and Ontology are two philosophical approaches that underline two paradigms of positivism and interpretivism. Epistemology asks questions about the nature of knowledge. There are two main epistemological positions named empiricist and constructivism. Similarly, Ontology which points out the nature of reality has two broad and contrast positions named objectivism and constructionism (Braun & Clarke, 2013). Researchers who work from a positivism/empiricist/ objectivism perspective explain the social phenomena in quantitative terms. They assume that reality already exists in the world and needs to be discovered with the help of scientific methodology. They want to investigate how variables shape events and cause results. In contrast, researchers who work from the interpretivism/ constructivism/ constructionism perspective argue that human interaction constructs reality and people build their own social reality. They use qualitative research methodology to investigate and interpret social reality in the context and view of participants (Burrell & Morgan, 1979; Tuli, 2010).

According to the mentioned philosophical theories, this study selected the positivism/empiricist/ objectivism perspective. This selection is because of the nature of this study that wants to analyze the influence of some cognitive and non-cognitive factors on consumers' behavioral intention. It should be considered that there are different research methodologies that not only may choose because of a researcher's philosophical orientation, also they may be selected because of its fitness to the purpose of a given research question (Tuli, 2010). Based on the literature review of this paper, different cognitive and non-cognitive influential factors on consumers' behavior in the e-banking context have already explored and investigated by different research. Therefore, this study uses a quantitative approach to test the relationship between factors that have already existed and explored in the e-banking context.

4.1.1. Sample

The purpose of this article is to investigate the influence of consumers' negative emotions on consumers' behavioral intention to adopt new emerging e-banking technology in Sweden. When we want to determine the population of research, it is important to be clear about the target of the research (Oakshott, 2012). Regarding the target of this paper, the population of this research can be considered as every person in Sweden who not only use e-banking services, also have a minimum technological knowledge to understand the function of new emerging e-banking technology. Indeed, it is obvious many people use current e-banking services like mobile applications or online bank services and generally know about the meaning and function of these services. However, they would need more information to distinguish between new emerging e-banking technology and current e-banking technology (Arias-Oliva, et al., 2019). Moreover, research illustrates that young consumers recognized as group consumers who show the strongest preference for new banking technology (Bednar, et al., 1995; Rugimbana, 2007). Therefore, two mentioned limitations have been used as two criteria to narrow the population of this paper.

In order to be sure that the participants probably are young and have a reasonable perception and understanding of new emerging e-banking technology, this paper considered university student adults in Sweden as its main population. This paper used convenience sampling as its sampling procedure because of easy accessibility to students' email addresses for the researcher. Convenience sampling refers to a kind of nonprobability or nonrandom sampling in which some practical criteria like geographical proximity, availability at a given time, and easy accessibility are beringed up for selecting the member of the target population (Etikan, et al., 2016).

4.1.2. Measurement instrument development

In order to test the theoretical construct, a survey was conducted in Sweden. An online questionnaire was developed to contact data based on constructs and items of literature (Appendix 1&2). The questionnaire was designed in three parts. The first part included demographic questions namely gender, age, education, income, citizenship, and major. The second part of the questionnaire included general questions related to e-banking technology. These questions show how many responders had already heard about new emerging e-banking technology such as digital currency, mobile wallet, and website customization, and how many had already used them. The second part of the questionnaire included questions related to the main target of the current paper namely items relevant to consumers' negative emotions towards new emerging e-banking technology, models of technology adoption, and perceived risk respectively. The questionnaire was initially created in English and the final version was translated into Swedish. As most of the Swedish universities have a lot of international students, and as the given population of this paper is students in Sweden, both English and Swedish version of the questionnaire was sent to them. This attempt help the researcher to reduce biases and cover more variety. Moreover, A pilot survey with 30 responds was conducted in order to test the reliability and validity of items and the whole questionnaire. In the following, firstly, the measurement items for emotions, e-banking technology adoption, and perceived risk will be explained separately. Secondly, after a brief explanation about the

meaning of validity and reliability, the results of the pilot test and the changes in the initial version of the questionnaire will be presented.

4.1.3. Emotion items

The most frequently approaches to conduct data about emotions is using self-report approaches especially in the marketing sector (Bagozzi, et al., 1999). Therefore, to measure items related to the emotion part, this paper followed Beaudry and Pinsonneault (2010) and ask respondents to report the degree to which they feel each emotion by using the five-point Likert scale ranging from "not at all" to "extremely". Different range of positive and negative emotions have been reported by considering different stimuli such as advertisements or products/consumptions (Mehrabian & Russell, 1974; Edell & Burke , 1987; Westbrook, 1987). As the main stimulus in the current research is related to new e-banking technology, the range of negative emotions proposed in the emotional framework of Beaudry and Pinsonneault (2010) was considered. In sum, two ranges of negative emotions called Loss emotions (Anger, Dissatisfaction, Disappointment, Annoyed, Frustration, and Disgust) and Deterrence emotions (Anxiety, Fear, Worry, and Distress) was regarded in the questionnaire.

4.1.4. Technology adoption items

Similar to other research in the context of e-banking technology (Appendix 1&2), this paper also used influential factors of technology adoption in the context of IT in order to determine salient predictors of consumers' behavioral intention towards new emerging e-banking technology. All measurement items in this part were adopted from literature with slight modifications with respect to new e-banking technology. Four items of this part namely Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Hedonic Motivation (HM) were adopted from Venkatesh et al. (2012). The questions of technology adoption items were expressed in the statements scored on a five-point Likert-type scale, where ranged from 1= strongly disagree to 5= strongly agree.

4.1.5. Perceived risk items

This study intends to focus on four salient facets of perceived risk. Items related to four salient facets of perceived risk were adopted from Featherman and Pavlou (2003) with the respect to e-banking technology context. Similar to other items of the questionnaire, the questions of this part were expressed in the statements scored on a five-point Likert-type scale, where ranged from 1= strongly disagree to 5= strongly agree.

4.1.6. Reliability and validity of the instrument

Although, this study applies scales validated in previous researches (Table 3), the validity of the questionnaire also was determined by two experts who were knowledgeable in IT and e-banking context. Moreover, a pilot study was conducted to test the internal consistency of the questionnaire by the use of Cronbach's alpha (Table 4). The results confirm the reliability of the scale items. As measuring factors related to human behavior is the most important part of social science research, the validity and reliability of measurement instruments are vital (Drost, 2011). Validity is defined as the quantity to which an instrument measures what it wants to

measure (Kimberlin & Winterstein, 2008). Reliability refers to which a measurement is repeatable and consistent in different situations or conditions. In other words, reliability points out the stability of measurement over different conditions. One of the main ways of measuring the reliability of a questionnaire is to measure its' internal consistency. The most popular method to test the internal consistency in social science is Coefficient alpha which usually called Cronbach's alpha (Drost, 2011). The satisfactory rate of Cronbach's alpha is $\alpha > 0.7$ (Tavakol & Dennick, 2011).

Table 3- Measurement items

constructs	Items	sources
Loss and Deterrence emotions	Please rate the degree to which you felt each emotion when you encounter new emerging e-banking technology such as digital currency, mobile wallet, and website customization.	Beaudry and Pinsonneault (2010) Bagozzi, et al., 1999
Performance expectancy	PE1: I think using new e-banking technology such as digital currency, mobile wallet, and website customization would be useful in my daily life. PE2: New e-banking technology such as digital currency, mobile wallet, and website customization would help me to accomplish things more quickly. PE3: New e-banking technologies such as digital currency, mobile wallet, and website customization would increase my productivity.	(Venkatesh, et al., 2012)
Effort expectancy	EE1: It's easy for me to learn how to use new e-banking technology such as digital currency, mobile wallet, and website customization. EE2: Using new e-banking technology such as digital currency, mobile wallet, and website customization is clear and understandable for me. EE3: It is easy for me to become skillful at using new e-banking technology such as digital currency, mobile wallet, and website customization. EE4: Using new e-banking technology such as digital currency, mobile wallet, and website customization is easy.	(Venkatesh, et al., 2012)
Social influence	SI1: If people who influence my behavior think I should use new e-banking technology such as digital currency, mobile wallet, and website customization, I will use them. SI2: If people who are important to me think I should use new e-banking technology such as digital currency, mobile wallet, and website customization, I will use them. SI3: If people who I value their opinion think I should use new e-banking technology such as digital currency, mobile wallet, and website customization, I will use them.	(Venkatesh, et al., 2012)
Hedonic motivation	HM1: Using new e-banking technology such as digital currency, mobile wallet, and website customization is fun. HM2: Using new e-banking technology such as digital currency, mobile wallet, and website customization is enjoyable. HM3: Using new e-banking technology such as digital currency, mobile wallet, and website customization is entertaining.	(Venkatesh, et al., 2012)
Behavioral Intention	I intend to use new e-banking technology such as digital currency, mobile wallet, and website customization in the future. I plan to use new e-banking technology such as digital currency, mobile wallet, and website customization in the future. I predict to use new e-banking technology such as digital currency, mobile wallet, and website customization in the future.	(Venkatesh, et al., 2012)
Financial risk	FR3: Using new e-banking technology such as digital currency, mobile wallet, and website customization would lead to a financial loss for me. FR4: Using new e-banking technology such as digital currency, mobile wallet, and website customization subjects me to financial risk.	Feathermana & Pavlou, 2003 Martinsa, et al., 2014
Performance risk	PR1: New e-banking technology such as digital currency, mobile wallet, and website customization might not perform well and create problems with my credit. PR2: The security systems built into new e-banking technology such as digital currency, mobile wallet, and website customization are not strong enough to protect my money. PR3: The probability that something's wrong with the performance of new e-banking technology such as digital currency, mobile wallet, and website customization is high. PR4: Considering the expected level of service performance of new e-banking technology such as digital currency, mobile wallet, and website customization, for me to use, it would be risky. PR5: Servers of new e-banking technology such as digital currency, mobile wallet, and website customization may not perform well.	Feathermana & Pavlou, 2003 Martinsa, et al., 2014
Time risk	TR1: I think that if I use new e-banking technology such as digital currency, mobile wallet, and website customization then I will lose time due to having to switch to a different payment method. TR2: Using new e-banking technology such as digital currency, mobile wallet, and website customization would lead to a loss of convenience for me because I would have to waste a lot of time fixing payments errors. TR3: Considering the time that I should invest to switch to (and set up) new e-banking technology such as digital currency, mobile wallet, and website customization, it would be risky. TR4: The possible time loss from having to set up and learn how to use new e-banking technology such as digital currency, mobile wallet, and website customization is high.	Feathermana & Pavlou, 2003 Martinsa, et al., 2014
Privacy risk	PR1: The chances of using new e-banking technology such as digital currency, mobile wallet, and website customization and losing control over the privacy of my financial information is high. PR2: Using new e-banking technology such as digital currency, mobile wallet, and website customization would lead me to a loss of privacy because my personal information would be used without my knowledge. PR3: Internet hackers (criminals) might take control of my money if I use new e-banking technology such as digital currency, mobile wallet, and website customization.	Feathermana & Pavlou, 2003 Martinsa, et al., 2014

Table 4- The internal consistency of constructs /Cronbach's alpha is $\alpha > 0.7$

Constructs	Cronbach's alpha
Behavioral Intention (BI)	0.88
Deterrence and Loss emotions	0.90
Effort expectancy (EE)	0.90
Hedonic motivation (HM)	0.92
Performance expectancy (PE)	0.92
Social influence (SI)	0.93
Financial Risk (FR)	0.78
Performance risk (PFR)	0.78
Privacy risk (PR)	0.89
Time risk (TR)	0.83

4.1.7. Data

Online web surveys provided by Google forms and Survey Monkey are the most popular and admired sources of academic research data in the current era (Gupta & Arora, 2019). Data for this study was collected by an online survey sent to students who study in Sweden. A hyperlink of the Google survey form was sent to around 750 students with the help of email as well as posted into different social media channels and groups on Facebook, WhatsApp, Instagram, and Telegram which had students' members. In order to be sure that only students will participate in the online survey, an alarm message was designed to ask people to ignore the post if they are not a student in Sweden. Data were obtained during 6 months from 1 April 2020 to 15 September 2020. To obtain more response rate, a postcard reminder was emailed to participants after one month, also a message reminder was sent every month to all online social medial groups and channels. Due to exclude students who have never heard about new emerging e-banking technology, two questions were considered in the survey. In total, 120 respondents filled out the online survey which shows a 16 percent return rate. Seven of 120 participants were those who had never heard about new e-banking technology such as digital currency (e.g. bitcoin), mobile wallet, and website customization. As this study concentrates on consumers' negative emotions towards new e-banking technology and emotions would be evoked during the anticipation period or impact period (Beaudry & Pinsonneault, 2010), it was decided to drop the seven responses for the analysis. Moreover, among the 120 responses, 4 cases were discarded because the responses did not answer all questions. Eventually, 109 valid questionnaires were considered for further data analysis.

4.1.8. Sample profile

The demographic profile of this study comprises 50.45 percent female and 49.54 percent males. The majority of the participants were age 25-35 (47.70 percent) and 18-25 (42.20 percent) years old while the percentage of the participants who were older than 35 years old was only 10.8 percent. So, the sample of this study relatively represents a young population who are familiar with new emerging e-banking technology. The 52.29 and 32.11 percent of respondents were studying master and bachelor respectively whereas 15.59 percent of them were PhD students. Furthermore, the highest percentage of respondents (65.13 percent) had income between 1000 to 10000 Swedish krona [1](SEK or Kr). Other respondents include 8.25 percent

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[1] The official currency of Sweden

who had income between 10000 and 20000, 20.18 percent earned between 20000 to 30000 and remaining (6.42 percent) had an income of 30000 or more. Out of 109 respondents, 95 (77.98 percent) were international students whereas the remaining 24 (22.01percent) were domestic students. In order to distinguish the awareness level among participants about new emerging e-banking technology such as digital currency (e.g. bitcoin), mobile wallet, and website customization, two questions were applied. The questions intended to identify whether the consumer had ever heard about or used new emerging e-banking technology. The finding of these questions indicates that 94.7 percent of participants had heard about new emerging e-banking technology and 50.4 percent of them had the experience to use new emerging e-banking technology. Only 5.3 percent of respondents had never heard about new e-banking technology which was omitted from the sample for further analysis.

Table 5- Profile of responds

Demographic characteristic	Frequency percentage	percentage
Gender		
Female	55	50.45
Male	54	49.54
age		
18-25 years	46	42.20
25-35 years	52	47.70
35-45 years	10	9.17
45 years and over	1	0.91
Education		
Bachelor	35	32.11
Master	57	52.29
PhD	17	15.59
Citizenship		
International	95	77.98
Domestic	24	22.01
Income (SEK)		
1000-10000	71	65.13
10000-20000	9	8.25
20000-30000	22	20.18
30000	7	6.42
Note: n= 109		

4.1.9. Statistical method

This paper used the Partial Least Square Structural Equation Modeling (PLS-SEM) for analyzing its conceptual model and hypotheses. SEM provides the possibility to simultaneously examine a series of interrelated dependence relationships incorporated into an integrated model. There are two primary techniques for SEM named covariance-based SEM (CB-SEM) and variance-based SEM (PLS-SEM). The variance-based approach of SEM (PLS-SEM) was considered suitable for this paper. Generally, the CB-SEM approach is suitable for testing a set of relationships between multiple variables to reject or confirm theories while the PLS-SEM approach is primarily suitable for developing theories. PLS-SEM approach concentrates on explaining the variance in the dependent variables when examining a model (Sarstedt, et al., 2015). The conceptual model of this paper has not been tested in earlier literature and is trying to investigate the variance of consumer behavioral intention to use new emerging e-banking technology with the help of different cognitive and non-cognitive independent variables.

Hair et al (2014) discuss the most prominent justifications as additional requirements to use the PLS-SEM approach. They argue that the PLS-SEM approach is a suitable approach to evaluate non-normal data whereas the CB-SEM approach with non-normal data can lead to inflated goodness-of-fit measures. In line with many social sciences of research, this study also has a non-normal distribution (Hair Jr, et al., 2016; Hair Jr, et al., 2014). Thus, the researcher decided to use the PLS-SEM approach because it does not require a distributional assumption. Secondly, Hair Jr and et al (2014) argue that sample size can influence some aspects of SEM involving parameter estimates, model fit, and statistical power. Both PLS-SEM and CB-SEM approaches can take advantage of a much smaller sample size. However, the PLS-SEM generally attains a higher level of statistical power in small sample sizes (Hair Jr, et al., 2014). Moreover, PLS-SEM is suitable for predictive purposes and appropriate for examining path models with typically more than five constructs when small samples are used. (Sarstedt, et al., 2015; Reinartz, et al., 2009). The current research model is also a relatively complex model with more than five constructs. Smart PLS V 3.3.2 software is applied to evaluate the research model (Ringle, et al., 2015). The conceptual model is examined to assess reliability and validity, and then the structural model is tested.

4.2. Estimation of measurement and structural model

The construct reliability, indicator reliability, convergent validity, and discriminate validity of the measurement model was assessed using composite reliability, Cronbach's α, CFA, and AVE.

4.2.1. Reliability

Composite reliability and Cronbach's α were used to test the construct reliability of the measurement model. As shown in table 6, composite reliability and Cronbach's α for all constructs are above 0.7 which indicates that the constructs are reliable (Hair, et al., 2011). The factor loading is considered to estimate indicator reliability. The loading of each item should be greater than 0.70 and every loading for less than 0.4 should be omitted (Hair, et al., 2011). Three emotions of loss and deterrence emotions namely "disappointed", "disgust", "dissatisfaction", and "distressed" were dropped because of their low factor loading. The remaining loadings are higher than 0.7, and all items of constructs are statically significant at 0.05. Therefore, the instrument illustrates good indicator reliability.

Table 6- Evidence of constructs reliability and validity

Construct	Item	Loading	Composite reliability	Cronbach's alpha	AVE	R^2
Behavioral Intention (BI)	BI1	0.946	0.932	0.892	0.821	0.40
	BI2	0.885				
	BI3	0.886				
Performance expectancy (PE)	PE1	0.923	0.924	0.880	0.804	0.25
	PE2	0.931				
	PE3	0.832				
Effort expectancy (EE)	EE1	0.883	0.947	0.925	0.816	0.10
	EE2	0.916				
	EE3	0.922				
	EE4	0.899				
Social influence (SI)	SI1	0.815	0.937	0.907	0.833	0.01
	SI2	0.954				
	SI3	0.963				
Hedonic motivation (HM)	HM1	0.880	0.936	0.899	0.830	
	HM2	0.926				
	HM3	0.926				
Loss Emotions (LE)	Angry	0.912	0.892	0.831	0.736	
	Annoyed	0.721				
	Frustration	0.919				
Deterrence emotions (DE)	Anxiety	0.819	0.896	0.834	0.743	
	Worried	0.824				
	Fear	0.931				
Perceived Risk (PCR)						
Financial Risk (FR)	FR1	0.824	0.886	0.808	0.723	0.69
	FR2	0.866				
	FR3	0.860				
Performance risk (PFR)	PFR1	0.829	0.939	0.875	0.667	0.85
	PFR2	0.790				
	PFR3	0.828				
	PFR4	0.803				
	PFR5	0.831				
Privacy risk (PR)	PR1	0.851	0.908	0.848	0.767	0.65
	PR2	0.887				
	PR3	0.888				
Time risk (TR)	TR1	0.813	0.883	0.824	0.653	0.55
	TR2	0.829				
	TR3	0.806				
	TR4	0.784				

4.2.2. Validity

The convergent validity indicated that the latent variable describes more than half of the variance of its indicators. The common criterion to estimate convergent validity is Average Variance Extracted (AVE). The AVE should be greater than 0.5 for all constructs to conclude a measurement model indicates a good convergent validity (Fornell & Larcker, 1981; Hair, et al., 2011). Table 6 shows that all constructs of the measurement model of this study have the AVE higher than 0.5.

Table 7- Evidence of discriminate validity

Constructs	BI	DE	EE	HM	LE	PE	SI	FR	PFR	PR	TR
Behavioral Intention (BI)	**0.906**										
Deterrence emotions (DE)	_0.233	**0.862**									
Effort expectancy (EE)	0.457	_0.210	**0.904**								
Hedonic motivation (HM)	0.388	_0.197	0.586	**0.911**							
Loss Emotions (LE)	_0.305	0.531	_0.298	_0.221	**0.858**						
Performance expectancy (PE)	0.444	_0.054	0.452	0.496	_0.237	**0.896**					
Social influence (SI)	0.212	0.101	0.156	0.347	_0.015	0.407	**0.913**				
Financial Risk (FR)	_0.403	0.457	_0.199	_0.137	0.305	0.194	_0.059	**0.850**			
Performance risk (PFR)	_0.445	0.529	_0.339	_0.216	0.328	_0.232	_0.109	0.833	**0.817**		
Privacy risk (PR)	_0.389	0.380	_0.142	_0.044	0.156	_0.174	_0.051	0.562	0.642	**0.876**	
Time risk (TR)	_0.464	0.338	_0.493	_0.263	0.262	_0.262	_0.231	0.444	0.608	0.567	**0.808**

The other validity of the constructs that should be tested is discriminant validity. Two criteria of Fornell-Larcker and cross-loading are used to evaluate this validity. Fornell-Larcker shows that the square root of AVE would be higher than all correlations coefficient between each pair of constructs if the discriminant validity was fulfilled (Fornell & Larcker, 1981). The diagonal values in table 7 indicated the square root of AVE and the off-diagonal values are the correlation between the corresponding constructs. The second element for verifying discriminant validity is the cross-loading criterion (Table 6). The discriminant validity of a scale would be satisfied if the loading of each indicator was greater than all other cross-loadings (Chin, 1998). Overall, the measurement model results demonstrate that the reliability and validity of the constructs in this study are satisfactory. Therefore, the structural model can be tested by using constructs.

4.2.3. Structural model

The research hypotheses were tested using PLS-SEM bootstrapping approach. The value of the t-statistic was considered to evaluate the hypotheses formulated and determine whether they were supported or not. The research hypothesis would be validated if the value of t-statistic is higher than or equal to 1.96. As the results of the PLS estimation shown in Table 8, the value of t-statistic for four hypotheses namely H2, H5, H7, and H11 is superior to 1.96 which shows these hypotheses are confirmed.

Table 8-Structural model result

Hypotheses	Relationship	Original sample	Sample mean	SD	path coefficients (β)	t-statistic	p −values	Remarks
H1	LE → SI	_0.096	_0.083	0.171	_0.096	0.562	0.575	Rejected
H2	LE → EE	_0.258	_0.254	0.119	_0.258	2.160	0.031	Supported
H3	DE → EE	_0.077	_0.093	0.129	_0.077	0.592	0.554	Rejected
H4	DE → SI	0.152	0.142	0.158	0.152	0.964	0.336	Rejected
H5	PE → BI	0.227	0.234	0.115	0.227	1.978	0.048	Supported
H6	EE → BI	0.176	0.166	0.119	0.176	1.484	0.139	Rejected
H7	EE → PE	0.452	0.456	0.097	0.452	4.640	0.000	Supported
H8	SI → BI	0.022	0.020	0.109	0.022	0.202	0.840	Rejected
H9	HM → BI	0.085	0.101	0.096	0.085	0.884	0.337	Rejected
H11	PCR → BI	_0.0367	_0.358	_0.084	_0.367	4.375	0.000	Supported

Note: p-values< 0.05; LE: loss emotion; DE: deterrence emotion; PE: performance expectancy; EE: effort expectancy; SI: social influence; HM: hedonic motivation; PR: perceived risk

Moreover, the values of the t-statistic, R^2, and path confidence of four sub-facets of perceived risk (Figure 6) show a significant and strong relationship between four salient risk elements and perceived risk as the second order factor of these risks (H_{10a}: t-value= 66.823, β = 0.925; P < 0.05), (H_{10b}: t-value= 24.427, β = 0.833; P < 0.05), (H_{10c}: t-value= 22.871, β = 0.808; P < 0.05), (H_{10d}: t-value= 13.636, β = 0.747; P < 0.05). Thus, the results support the acceptance of hypotheses H10.

The approved hypotheses are related to the relationship between loss emotion and effort expectancy, effort expectancy and performance expectancy, performance expectancy and behavioral intention, and risk perceived and behavioral intention. The results also indicate that the hypotheses related to the influence of deterrence emotion on effort expectancy and social influence (H3 and H4) are not approved. Similarly, hypotheses evaluated the relationship

between effort expectancy (H6), social influence (H8), hedonic motivation (H9), and behavioral intention are not supported.

Figure 6: Structural model with path confidence and r-square
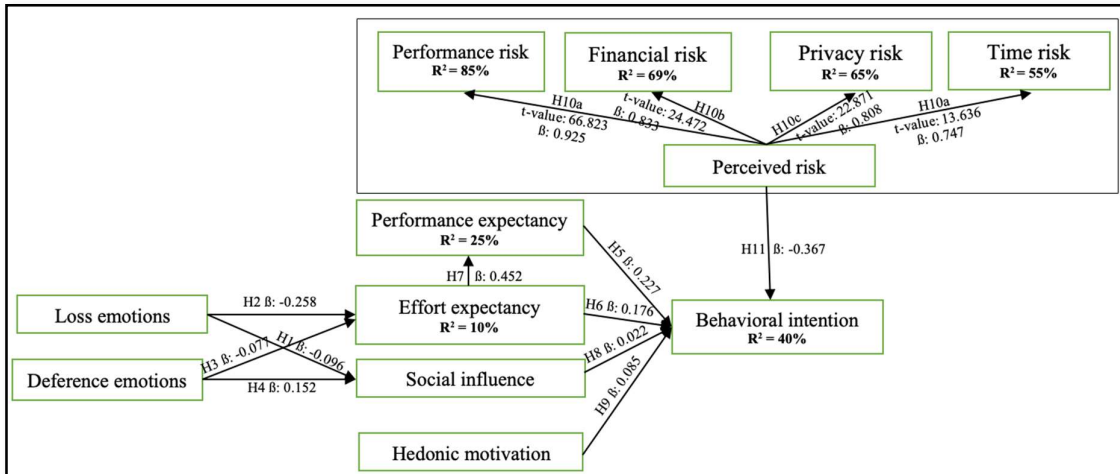
The final step is to evaluate the model's predictive accuracy with the help of the coefficient of determination (R^2). The R^2 value indicates the variance explained in each of the endogenous constructs (Hair, et al., 2011). Overall, reviewing the R^2 value of each endogenous constructs in the proposed model elaborates that the model explains 40% of behavioral intention to adopt new emerging e-banking technology. The model also shows that loss emotions explain around 10% of the variation in effort expectancy while effort expectancy explains 25% of performance expectancy. Among significant constructs explained the behavioral intention to adopt new emerging e-banking technology, perceived risk is the most important construct (β = -0.36; P < 0.05), followed by performance expectancy (β = 0.22; P < 0.05). The model illustrates whereas loss emotion can influence effort expectancy negatively (β = -0.25; P < 0.05), effort expectancy impact positively on performance expectancy (β = 0.22; P < 0.05).

4.3. Ethical consideration
Considering ethics as an integral part of all phases and aspects of research is necessary. In both qualitative and quantitative researches, respect for participation such as informed consent, the welfare of the participants, social responsibility, confidentiality as ethical principles should be considered (Braun & Clarke, 2013). Consequently, these principles plus other ethical principles including the confidentiality of the information collected and the data-strong issue (Bell, et al., 2018) took into account in this study. Particularly, a vivid message that was attached to the online questionnaire indicated that participating in the survey is voluntariness. Moreover, the questionnaire was designed in a way to avoid asking any questions that may reveal the participants' personal identity.

Chapter 5. Discussion, conclusions, implications, limitations and future research

5.1. Discussion

The results of this study support five of its eleven hypotheses related to consumers' behavioral intention to adopt new emerging e-banking technology. Supported hypotheses suggest that between two range of negative emotions namely loss emotions (anger, annoyed, frustration) and deterrence emotions (anxiety, worried, fear), the earlier impacts on consumers' effort expectancy negatively. Loss emotions explain 10 percent of the variation of effort expectancy. There is also an influential relationship between consumers' effort expectancy and performance expectancy. The findings propound that consumers' effort expectancy explains 25 percent of the variation of consumers' performance expectancy. It can be concluded that loss emotions can have a negative and indirect influence on consumers' performance expectancy. This result follows the prior research findings and shows that loss emotions like anger are not directly related to behavioral intention and usage behavior (Cenfetelli, 2004; Beaudry & Pinsonneault, 2010).

People would feel loss and deterrence emotions when confronted with a new IT event. These emotions evoke because they probably perceive the new IT event as a threat. Also, they may feel negative emotions because they feel that they have a lack of control over its expected consequences of a new IT event (loss emotions) or have some control over its expected consequences of it (deterrence emotion) (Beaudry & Pinsonneault, 2010). Thus, regarding the finding of this paper, it can be discussed that consumers in the e-banking context feel loss emotions such as anger, frustration, and annoyed because they not only perceive the new emerging e-banking technology as a threat, also they comprehend lack of control over the consequence of them. Beaudry & Pinsonneault (2010) define threat in contrast to opportunity which means how an individual thinks a new IT event can help her/him to reach her/his goal. Therefore, when consumers meet a new e-banking technology they feel loss emotions because of two reasons. Firstly, they may perceive the new e-banking technology as a threat that prevents them to reach their financial goal such as transferring money. Secondly, they perceive a lack of control over the expected consequences of the new e-banking technology. Finally, these emotions can reduce their effort expectancy, performance expectancy, and consequently consumers' behavioral intention to adopt new emerging e-banking technology.

Venkatesh (2000) shows that computer anxiety (sample of deterrence emotions) is one of the general anchors for the formation of perceived ease of use (effort expectancy). He argued that when people face a possibility to use a computer, feeling anxiety or fear is their spontaneous reaction. This spontaneous reaction related to user general perception of computer use. Beaudry & Pinsonneault (2010) discuss when people feel deterrence emotion like anxiety, although they still perceive new technology as threat, they feel that they have some control over the expected consequences of it. However, the finding of the current study does not support the hypotheses of the impact of deterrence emotion (e.g., anxiety) on users' behavioral intention through the effort expectancy in the e-banking context. This finding is in line with Yuen et al (2010) which

concluded anxiety is not an influential factor of behavioral intention to use internet banking services.

The main point in this part is the difference between the loss emotions and deterrence emotions. Approving the influence of loss emotions in contrast to deterrence emotions in this study could be explained better by considering two mentioned criteria: 1- the technology perception as a threat and 2- the spectrum of "lack of control over the expected consequences" to "control over the expected consequences". The finding of this paper show when consumers report their negative emotions about new emerging e-banking technology, they generally report loss emotions as their main emotions. This means that consumers in the e-banking context may not only perceive new e-banking technology as a threat, also may feel a lack of control over the consequences of new e-banking technology.

When people feel deterrence and loss emotions, they seek social support to decrease these negative emotions. In other words, their usage behavior is positively associated with their social expectancy (Beaudry & Pinsonneault, 2010). These relationships do not support in this study. Participants in this study feel loss emotions when face with the new emerging e-banking technology. Nevertheless, it seems that they did not consider social support to reduce their negative emotions. Therefore, consumesrs' behavioral intention to adopt a new e-banking technology do not be influenced indirectly by consumers' negative emotion through social influence.

The results also indicate that perceived risk has a direct and negative influence on consumers 'behavioral intention. Perceived risk and performance expectancy explain 40 percent of consumers' behavioral intention to adopt new emerging e-banking technology. Four salient risks namely performance risk, financial risk, privacy risk, and time risk are the most salient concerns for perceived risk respectively. Moreover, perceived risk is the strongest predictor of consumers' behavioral intention in the adoption of new emerging e-banking technology. These results support Martins et al. (2014) findings.

On the one hand, the results of the current proposed model indicate that the effect of effort expectancy and social influence on consumers' behavioral intention is not significant. This means that the participants in this study do not find the new emerging e-banking technology difficult to use. They do not also worry about their surrounding people's beliefs when they want to decide whether to adopt a new e-banking technology or not. These results have been observed in some other research (Yuen, et al., 2010; Alalwana, et al., 2017; Makanyeza & Mutambayashata, 2018; Kwateng, et al., 2019; Raza, et al., 2019; Gupta & Arora, 2019).

On the other hand, although the finding of this study does not approve the influence of effort expectancy on consumers' behavioral intention to adopt new e-banking technology, the indirect influence of effort expectancy on consumers' behavioral intention through performance expectancy is supported. Thus, consumers consider new e-banking technology as a useful technology that can improve their financial performance. This perception also is supported by the help of their effort expectancy.

Moreover, participants in this study do not find new emerging e-banking technology pleasure or enjoyable. In other words, hedonic motivation does not affect consumers' behavioral intention to adopt new e-banking technology in this paper. This finding also approved in the previous studies such as Oliveira et al. (2016), Yaseen and Qirem (2018), and Kwateng et al. (2019). This consequence can be developed by the comparison between positive emotions and negative emotions. This study, in line with Cenfetelli (2004), illustrates that negative emotions have a significant impact (indirectly and negatively) on consumers' behavioral intention to use new e-banking technology whereas positive emotions, namely hedonic motivation such as enjoyment, do not show a statistically significant influence on them.

5.2. Conclusions

Overall, this study aims to determine whether consumers' negative emotions toward new e-banking technology impact their behavioral intention to adopt new emerging technology. The results of this study show that consumers' negative emotions influence negatively consumers' behavioral intention to adopt new emerging e-banking through two factors of effort expectancy and performance expectancy. This study also compares the influence of negative emotions and positive emotions on consumers' behavioral intentions in the e-banking context. The results illustrate that consumers 'negative emotions have probably more influence than positive emotions in the e-banking technology adoption context. Moreover, the findings indicate that perceived risk is one of the most influential factors in the prediction of consumer's behavioral intention to adopt new emerging e-banking technology.

5.3. Managerial implications
This study shows that not only, consumers find new e-banking technology as a threat but they feel a lack of control over the consequences of using new emerging e-banking technology. These kinds of emotions influence negatively their effort expectancy which means that consumers who feel loss emotion probably find difficult a new emerging e-banking technology to use. In other words, consumers who felt angry, frustration, and annoyed when faced with a new e-banking technology, would perceive difficult it to use them. Loss emotion could also impact consumers' performance expectancy indirectly which means consumers may find the new emerging e-banking technology unfunctional or at least less useful. Eventually, these emotions could indirectly and negatively influence consumers' behavioral intention through their effort and performance expectancy. Considering these factors can help managers in the banking context to show consumers by advertisements how they can easily manage and control their financial activity with the help of new emerging e-banking technology. Also, they can consider the meaning of threat and opportunity in their advertisement to indicate to consumers how they can reach their financial goal like transferring money with the help of new emerging e-banking technology.

Furthermore, managers should consider that positive emotions have not been considered by consumers as influential as negative emotions in the e-banking context. In contrast, consumers' negative emotion can impact their behavioral intention to adopt new e-banking technology indirectly and negatively through their effort expectancy and performance expectancy. Thus,

it seems practical that managers try to avoid everything that may evoke consumers' negative emotions because the influence of negative emotions appears more than positive emotions.

Moreover, the results show that perceived risk and performance expectancy are the most important predictors of consumers' behavioral intention to adopt new emerging e-banking technology. Perceived risk that is come from four salient risks namely financial, privacy, performance, and time risk should be considered as an important factor in the e-banking context. Managers firstly should minimize the technical, privacy, and performance risk of new emerging e-banking technology such as digital currency, mobile wallet, and website customization and then, try to show consumers that the usage of new e-banking technology is not risky.

5.4. Limitations and future research

While this study tries to enhance the body of knowledge in the bank industry, it also has some limitations mainly concerning sampling. The responds in this study were mostly the young and educated people. This sample might have different negative emotion from the population average. They are usually innovative and eager to adopt new technology. It is possible that people who are old or less educated possess fewer technical skills and thus, feel different emotions and perceive the new e-banking technology difficult and riskier. Future research can be construct base on the model of this study regarding different ages with different educations. also, the results of this study could be different in different societies with different cultures as well as different levels of technology usage. The data for this study was gathered in Sweden as a developed country that has a high level of technology adoption and usage. Consumers' perception and emotion towards new emerging e-banking technology in other countries, especially developing countries, could provide different results.

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Appendix

Appendix 1 - Literature Overview/ e-banking articles

	name article	authors	year	country	main theory	main variables	dependent variables	significant relationships	sample
1	The adoption of virtual banking: an empirical study	Shaoyi Liao Yuan Pu Shao Huaiqing Wang Ada Chen	1999	Hong Kong	TPB	**Attitude towards the use of virtual banking:** behavioral beliefs of relative advantage, ease of use, compatibility, results demonstrability, perceived risk **Subjective norms about the UOVB** normative beliefs of image, visibility, critical mass **Perceived behavioral control about UOVB:** control beliefs of voluntariness, trialability, support and learning	Intention to use virtual banking (IUVB) which are forms of ATM, phone banking, home banking and Internet banking	Behavioral beliefs of relative advantage, ease of use, compatibility, results demonstrability ------>**Attitude towards the use of virtual banking** (ease of use played a dominated role in these relationship) attitudes towards the use of virtual banking and perceived behavioral control about the use of virtual banking ------>**Intention to use virtual banking (IUVB)**	118 staff in several companies
2	Haven't Adopted Electronic Financial Services Yet? The Acceptance And Diffusion Of Electronic Banking Technologies	Eun-Ju Lee Jinkook Lee	2000	U.S.	DOI	education communication age Income Race/ethnicity marital status	the adoption of financial innovations involve: ATM, Debit Direct Deposit,Direct Payment, Smart Card, any technology	Education—>adoption of financial innovation communication—>adoption of financial innovation age —>adoption of deposit Income—>adoption of direct payment Race/ethnicity—>adoption of debit cards& direct payment marital status—>adoption of ATMs&direct payment	4,299 households
3	Electronic banking in Finland: Consumer beliefs and reactions to a new delivery channel	Heikki Karjaluoto Minna Mattila Tapio Pento	2002	Finland		security time price convenient	use or not using e-banking	Non-users' belief --->no personal service but is quite secure New user beliefs----->cheap, save time, free from constraints of time&place Old users---> faster, cheaper, free from constraints of time&place	1,167 individual bank consumers (474users, 344 new users and 349 non-users)
4	The adoption of electronic banking technologies by US consumers	Jane M. Kolodinsky Jeanne M. Hogarth and Marianne A. Hilgert	2004	USA	TAM DOI = diffusion of innovation theory	**Personal characteristics:** income age, married or not, education, gender (minoteries) **E-banking characteristics:**Trialability relative advantage, compatibility, Complexity/simplicity Observability, Risk, involvement respondents with experience with other electronic banking technologie	adopt e-banking	**personal characteristic: income ----> adopt e-banking** age-----> adopr e-banking **E-banking characteristic: relative advantage-----> adopt e-banking, compatibility-----> adopt e-banking Simplicity-----> adopt e-banking observability-----> adopt e-banking risk-----> adopt e-banking respondents who were involved with other electronic banking technologies---> adopt e-banking**	telephone survey of 500 households data from 1,000 respondents in 1999 and 1,002 respondents in 2003
5	Customers' adoption of banking channels in Hong Kong	Wendy W.N. Wan Chung-Leung Luk Cheris W.C. Chow	2005	Hong Kong	TPB & TRA	**beliefs about the banking channels : Convenience**(efficiency of the services delivered by the channel, convenience of the location of the channel, convenience of the operating time of the channel, speed of the service provider) **Informativeness** (provision of financial services, provision of financial information, provision of professional financial consultation) **User-friendliness** (ease of use, clarity of service instructions) **Assurance** (security of customer information accuracy of transaction information) Gende age income educational level occupation	adopt banking channels	For ATM & Internet banking adoption based on the theory of reasoned action: beliefs about the banking channels------> adopt banking channels while For branch banking and telephone banking, beliefs were not related to adoption behaviors at all	314 bank consumers
6	Users' adoption of e-banking services: the Malaysian perspective	Wai-Ching Poon	2008	Malaysia	TAM	Convenience Accessibility Features availability Bank management and image Fees and charges Privacy Security Design Content Speed	the adoption of e-banking	C---> adoption of e-banking EA-----> adoption of e-banking FA------> adoption of e-banking BM&image----> adoption of e-banking fees& charges------>adoption of e-banking privacy&security------> adoption of e-banking design----->adoption of e-banking content ------> adoption of e-banking speed------> adoption of e-banking	359 bank consumers
7	The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking	Nadim Jahangir, Noorjahan Begum	2008	Bangladesh	TAM	perceived usefulness, ease of use, security privacy customer attitude	stomer adaptation of e-banki	perceived usefulness---->adaptation of e-banking ease of use ------>adaptation of e-banking security---->adaptation of e-banking privacy---->adaptation of e-banking customer attitude ----->adaptation of e-banking	227 customers of private commercial banks
8	An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria	Adesina Aderonke Ayo Charles K	2010	Nigeria	TAM	Perceived credibility(PC) Perceived usefulness (PU) Perceived ease of use (PE) Computer self efficacy (CSE)	Customer Attitude ntention to use Electronic banking(BI)	CSE---> PEOU CSE---->PU PC---->PEOU PC--->PU CSE---> Customer Attitude Customer Attitude----> PC PEOU---->Customer Attitude PU----->Customer Attitude Customer Attitude----> BI	292 civil service, trading, education, manufacturing and IT and Telecommunication.

#	Title	Authors	Year	Country	Model	Factors / Variables	Dependent variable	Relationships	Sample
10	The assessment of e-banking readiness in Jordan	Loay Salhieh Jamal Abu-Doleh Nada Hijazi	2011	Jordan	TAM	**Banker Perception:** Strategic aspects, Operational aspects, Banks customers, Technology consideration **Customer Acceptance:** Usefulness, Ease of use, Enjoyment Security and Privacy **IT Infrastructure in the Bank:** Personnel, Connectivity, Functionality	E-Banking Readiness	Banker Perception----->E-Banking Readiness Customer Acceptance---->E-Banking Readiness IT Infrastructure in the Bank----->E-Banking Readiness	60 managers in five departments in the banks 30 IT managers in the bank 150 bank customers in Amman
11	The Acceptance of E-banking by Customers in Nigeria	James A. Odumeru	2012	Nigeria	TAM	Perceived Benefits Perceived ease of use Perceived Enjoyment Perceived Risk Age Educational background	acceptance of e-banking	PB---->acceptance of e-banking PEOU---->acceptance of e-banking PE---->acceptance of e-banking PR---->acceptance of e-banking Age---->acceptance of e-banking EB---->acceptance of e-banking	258 bank consumers
12	Factors influencing the intendancy of E-Banking: An integration of TAM & TPB with e-service quality	Hosein Khanifar Mohammad Javad Mohaghegh Niya Gholam Reza Jandaghi Zeinab Molavi Mostafa Emami	2012	Iran	TAM TPB	Perceived ease of use perceived usefulness attitude towards the use of e-banking Perceived behavior control subjective norm perceived e-service quality	intention to use e-banking	perceived e-service quality--->intention to use SN----->intention to use PBC---->intention to use PEOU---> pU PU---> Attitude to use SN----> Attitude to use PBC--->SN	353 bank consumers
13	E-banking in Jordan	Muneer M. Abbad	2013	Jordan	TAM	Subjective norms Security Internet experience Enjoyment Perceived usefulness Perceived ease of use	behavioral intention to use E-Banking	SN---->Intention use e-banking. IE----> PEOU Enjoyment------>PU Enjoyment----> PEOU PU----->intention to use e-banking Enjoyment----->intention to use e-banking. PEOU----->PU	319 non-users of e-banking services
14	Analysis of factors influensing customers' intention to the adoption of e-banking service channels in Bahir Dar city: an integration of TAM, TPB and PR	Yitbarek Takele Zeleke Sira	2013	Ethiopia	TAM	perceived usefulness perceived ease of use perceived risk perceived behavioral control attitude subjective norms	intention to use e-banking attitude	attitude----->intention to use e-banking subjective norms----->intention to use e-banking PBC-->intention to use e-banking PU----->intention to use e-banking PEOU----->intention to use e-banking PR----->intention to use e-banking	211 bank consumers
15	An Investigation of Users' Acceptance and Satisfaction of E-Banking System as a Panacea towards a Cashless Economy in Nigeria	I. O. Akinyemi E. O. Asani A. A. Adigun	2013	Nigeria	TAM	perceived usefulness, perceived ease of use perceived credibility Intention to use Attitude nformation quality Convenience Navigation Service Quality trust	e-banking adoption	PU--->intention PU----> attitude PEOU---->PU PEOU-----> trust PEOU---->attitude Trust----> attitude trust-----> PU	310 bank consumers
16	Consumers' attitude towards e-banking services in Islamic banks: the case of Sudan	Ilham Hassan Fathelrahman Mansour Abuzar M.A. Eljelly Abdelgadir M.A. Abdullah	2014	Sudan	TAM	convenience ease of use service quality credibility perceived usefulness (PU)	attitude towards e-banking behavioral intention	Internet Banking: PU and EOU--->attitude----> BI C--->attitude----> BI ATM: C---->attitude----> BI EOU---->attitude----> BI SQ-----> attitude-----> BI Mobile banking: PU and EOU---> attitude-->BI SQ--->attitude-->BI	194 bank customers in Sudan
17	-banking users' behaviour: e-service quality, attitude, and customer satisfaction	Charles k. Ayo , Aderonke Atinuke Oni , Oyerinde J. Adewoye , Ibukun O. Eweoya	2016	Nigeria	DOI	Perceived relative advantage Perceived compatibility Perceived complexity Computer self-efficacy E-service quality Reliability Responsiveness System availability Competence Privacy Service portfolio	attitude towards using e-banking. perceived e-service quality of e-banking actual use	C---> perceived e-service quality of e-banking SP--->perceived e-service quality of e-banking RA---->attitude towards using e-banking perceived e-service quality of e-banking---> attitude towards using e-banking perceived e-service quality of e-banking---> CS perceived e-service quality of e-banking---actual use CS----> actual use attitude towards using e-banking----> actual use	254 individuals with experience in at least one e-banking system
18	The mediating role of hedonic motivation on the relationship between adoption of e-banking and its determinants	Maruf Gbadebo Salimon Rushami Zien Bin Yusoff Sany Sanuri Mohd Mokhtar	2017	Nigeria	TAM	percieved usefulness perceived ease-of-use perceived security	e-banking adoption	PU ---> Hedonic emotion perceived ease of use--->Hedonic emotion perceived security ----->Hedonic emotion PU---->Hedonic emotion----->e-banking adoption (moderate role) perceived security --->Hedonic emotion--> e-banking adoption (moderate role)	382 users of e-banking in Nigeria.
19	The impact of personalization and compatibility with past experience on e-banking usage	May Wang, Stella Cho Trey Denton	2017	china	UTAUT	effort expectancy performance expectancy Compatibility personalization	users' intentions to continue using e-banking services	Personalization → PE Personalization → EE Effort Expectancy → P E Performance Expectancy → Intention Compatibility × Personalization → PE Compatibility × Personalization → EE	300 banking customers, e.g. VIP, premium customers, etc
20	Intention to use e-banking services in the Jordanian commercial banks	Saad Ghaleb Yaseen and Ihab Ali El Qirem	2018	Jordan	UTAUT2	social influence Effort expectancy Perceived e-banking services quality Performance expectancy Hedonic motivation	Behavioral Intention to use E-Banking	social influence----> Behavioral Intention to use E-Banking Effort expectancy-----> Behavioral Intention to use E-Banking Perceived e-banking services quality--->Behavioral Intention to use E-Banking	348 customers who are using e-banking services
21	E-banking in Colombia: factors favouring its acceptance, online trust and government support	Javier A. Sánchez-Torres Francisco-Javier Arroyo Canada	2018	Colombia	UTAUT1	Performance expectancy Effort expectancy Government support trust	the use of financial websites	Performance expectancy ---->the use of financial websites Effort expectancy---->the use of financial websites trust ---->the use of financial websites	600 e-banking users in Colombia
22	Usage based upon reasons: the case of electronic banking services in India	Sangeeta Arora and Supreet Sandhu	2018	Indea	UTAUT 1 & TAM	perceived usefulness Effort expectancy social influence Performance Functionality Self-interest Information Service content Credibility. Overall service quality Prior satisfaction level	consumer intention to use e-banking	PU---> intention to use e-banking F--->intention to use e-banking Information---> intention to use e-banking Credibility--->intention to use e-banking EX----->intention to use e-banking PS----->intention to use e-banking PE----->intention to use e-banking SI----->intention to use e-banking SC----->intention to use e-banking OSQ---->intention to use e-banking	
23	Factors Influencing the Adoption of Electronic Banking in Kenya: A Case of Commercial Banks in Nairobi County	Dennis N. Simiyu, Dr. James M. Gatauwa Prof. Felix G. Mwambia	2018	Nairobi	TAM DOI	organizational capability, perceived technological risk perceived usefulness perceived ease of use	adoption of e- banking	OC-----> adoption of e-banking PU----->adoption of e-banking	113 bank consumers
24	A meta-analytical study of technological acceptance in banking contexts	Fernando De Oliveira Santini Wagner Junior Ladeira Cláudio Hoffmann Sampaio Marcelo Gattermann Perin Pietro Cunha Dolci	2019	Brazil	TAM	Self-efficacy (SE) Compatibility (C) Perceived awareness(PA) Involvement(Inv) Social influences (SI) Innovativeness(Innt) Web design perceptions(WDP) Accessibility perceptions(AP) Credibility perceptions (CrP) Cost perceptions(CP) Enjoyment perceptions(EP) System quality(SQ) Infrastructure percepstions (IP) Responses TAM	Performance, Satisfaction, Behavioural intentions, Attitude, Device type	SE C PA Inv Performance SI Innt intentions → attitude WDP TAM Sarisfaction AP Behavioural CrP CP EP SQ IP R Device type	a meta-analysis of a total of 142 articles
25	Factors affecting intention to use e-banking in Jordan	Abdel Latef M. Anouze Ahmed S. Alamro	2020	Jordan	TAM TPB	Ease of use Usefulness Security Awareness Perceptions of price Resistance to change Self efficacy Availability of PC	intention to use actual use	PUSE → ATTD PEOU → ATTD PSEC → ATTD ATTD → AINTN SELF → AINTN POPR → AINTN AWAR → AINTN AINTN → AUSE	480 e-banking service users

name article	authors	year	country	main theory	main variable	dependent variables	related significant relationships	sample
Internet banking in Jordan The unified theory of acceptance and use of technology (UTAUT) perspective	E. AbuShanab J.M. Pearson	2007	Jordan	UTAUT1	performance expectancy effort expectancy social influence	customer's intention to adopt internet banking	Performance expectancy---->intention to adopt internet banking Effort expectancy---->intention to adopt internet banking Social influence ---->intention to adopt internet banking	869 bank consumers
Internet Banking Adoption: Comparing Developed and Developing Countries	Y. Y. Yuen Paul H. P. Yeow Nena Lim Najib Saylani	2010	USA, Australia Malaysia	UTAUT1	Performance Expectancy (PE) Effort Expectancy (EE) Social Influence (SI) Perceived Credibility (PC) Facilitating Conditions (FC) self-efficacy anxiety attitude toward using internet banking services	Behavioral to use internet banking services	both developing and Deveoped countries:(the most important predictors) attitude---> BI PE----->BI PC----> BI / just for developed countries	766 IBS users
Integrating TTF and UTAUT to explain mobile banking user adoption	Tao Zhou Yaobin Lu b Bin Wang	2010	china	UTAUT1	Performance expectancy Effort expectancy Social influence Facilitating condition task technology fit: Task characteristics technology characteristics	Mobile user adoption	Task characteristics------>task technology fit Technology characteristics------>task technology fit Performance expectancy------>Mobile user adoption Social influence------>Mobile user adoption Facilitating condition------>Mobile user adoption Effort expectancy------>Performance expectancy Technology characteristics ----->performance expectancy task technology fit------>performance expectancy technology characteristics-----> effort expectancy	250 mobile users
Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model	Chian-Son Yu	2012	Taiwan	UTAUT1	Performance expectancy Effort expectancy Social influence Perceived Credibility Financial Cost Facilitating Conditions Perceived Self-Efficacy	behavioral intention actual behavior	social influence------>behavioral intention perceived financial cost------>behavioral intention performance expectancy------>behavioral intention perceived credibility------>behavioral intention individual intention------>actual behavior facilitating conditions------->actual behavior	441 mobile users
The moderating role of consumer technology anxiety in mobile shopping adoption: Differential effects of facilitating conditions and social influences	Kiseol Yang Judith C. Forney	2013	USA	UTAUT1	Performance Expectancy : utilitarian performance expectancy (UPE) hedonic performance expectancy (HPE)Facilitating Conditions Effort Expectancy Social Influence anxiety	Intentions to use	facilitating conditions---> FC---> intention to use UPE---->intention to use HPE---->intention to use SI----intention to use FC----> UPE FC---->HPE consumers anxiety related to FC & SI	400 mobile services users
Examining factors affecting customer intention and adoption of internet banking in Jordan	Ali A Alalwan Yogesh K Dwivedi Micheal williams	2014	Jordan	UTAUT1	Performance expectancy Facilitating conditions Hedonic motivation perceived risk trust	behavioral intention	Performance expectancy---->behavioral intention Facilitating conditions---->behavioral intention Hedonic motivation---->behavioral intention perceived risk---->behavioral intention trust---->behavioral intention	348 banking customers
Factors Affecting Consumers' Adoption of Mobile Banking in Bangladesh: An Empirical Study	Mirza M. D. Alam	2014	Bangladesh	UTAUT2	Performance expectancy Effort expectancy Social influence Perceived Credibility Financial Cost Facilitating Conditions PerceivedSelf-Efficacy	Behavioral intention individual behavior of using mobile banking	social influence-------> BI effort expectancy-------> BI performance expectancy-------> BI perceived financial cost-------> BI BI----> individual behavior of using mobile banking	225 people who had cell phone
Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application	Carolina Martinsa Tiago Oliveiraa Ales" Popovic"	2014	Portugal	UTAUT1	Performance Expectancy (PE) Effort Expectancy (EE) Social Influence (SI) Facilitating Conditions (FC) Perceived Risk (PCR)	Behavioural Intention (BI) Usage Behaviour (UB)	performance expectancy (PE)-----> BI effort expectancy (EE)-----> BI social influence (SI)-----> BI perceived risk (PCR)-----> BI BI---> UB	249 students and ex-students
Extending the UTAUT model to understand the customers' acceptance and use of internet banking in Lebanon A structural equation modeling approach	Ali Tarhini Mazen El-Masri Maged Ali Alan Serrano	2016	Lebanon	UTAUT1	Performance Expectancy (PE) Effort Expectancy (EE) Social Influence (SI) Perceived Credibility (PC) Task Technology Fit (TTF) Facilitating Conditions (FC)	Behavior Intention (BI) Actual Usage (AU)	PE→BI SI→BI PC→BI TTF→BI FC→AU BI→AU	408 IB consumers
Behavioural intention to adopt mobile banking among the millennial generation	Evon Tan Jasmine Leby Lau	2016	Malaysia	UTAUT1	Performance expectancy Effort expectancy Social influence Perceived risk	intention to adopt mobile banking	EE----> PE PE----> BI EE----> BI SI------> BI PR----> BI (negative)	347 university student
Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology	Tiago Oliveira Manoj Thomas Goncalo Baptista Filipe Campos	2016	Portugal	UTAUT2	performance expectancy effort expectancy habit facilitating conditions social influence hedonic motivation Compatibility Innovativeness Perceived Technology Security	behavioral intention to use MB behavioral intention to recommend	PE----> BI to use MB EE----->PE SI---->BI to use MB Inv----->Com Inv----->EE Inv----> BI to use MB Com----> PE Com----> EE Com----> BI to use MB PTS-----> BI to us MB	301 students and alumni from universities
Customers' Intention and Adoption of Telebanking in Jordan	Ali Abdallah Alalwan, Yogesh K. Dwivedi Michael D. Williams	2016	Jordan	UTAUT2	Performance expectancy price value Effort expectancy Social influences Facilitating conditions Hedonic motivation Price value Perceived risk	customers' intention to adopt telebanking customers' adoption of telebanking	PE-----> intention to adopt telebanking HM----->intention to adopt telebanking PV----->intention to adopt telebanking FC----->intention to adopt telebanking PR----->intention to adopt telebanking BI----->customers' adoption of telebanking	323banking customers
The interplay of counter-conformity motivation, social influence, and trust in customers' intention to adopt Internet banking services: The case of an emerging country	Walid Chaouali Imene Ben Yahia Nizar Souiden	2016	Tunisia	UTAUT1	Performance expectancy effort expectancy Social influence customers' trust in the physical bank customers' trust in the Internet banking (TRIB) Counter-conformity motivation (CCM)	intention to adopt Internet banking (ITAIB)	TRIB----> ITAIB CCM----> ITAIB PE ----> ITAIB	245 non-users of IB (students)
The impact of personalization and compatibility with past experience on e-banking usage	May Wang, Stella Cho Trey Denton	2017	china	UTAUT1	effort expectancy performance expectancy Compatibility personalization	users' intentions to continue using e-banking e-banking services	Personalization → PE Personalization → EE Effort Expectancy → P E Performance Expectancy → Intention Compatibility × Personalization → PE Compatibility × Personalization → EE	300 banking customers, e.g. VIP, premium customers, etc
Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust	Ali Abdallah Alalwana Yogesh K. Dwivedib Nripendra P. Rana	2017	Jordan	UTAUT2	Performance expectancy Effort expectancy price value Social influences Facilitating conditions Hedonic motivation Price value Trust	customers' intention to adopt Mobile banking customers' adoption of Mobile banking.	PE-----> intention to adopt MB EE-----> intention to adopt MB HM-----> intention to adopt MB PV-----> intention to adopt MB Trust----> PE EE-----> PE intention to adopt MB----->customers' adoption of MB FC----->customers' adoption of MB	343 banking customers.
Intention to use e-banking services in the Jordanian commercial banks	Saad Ghaleb Yaseen Ihab Ali El Qirem	2018	Jordan	UTAUT2	social influence Effort expectancy Perceived e-banking services quality Performance expectancy Hedonic motivation	Behavioral Intention to use E-Banking	social influence----> Behavioral Intention to use E-Banking Effort expectancy-----> Behavioral Intention to use E-Banking Perceived e-banking services quality--->Behavioral Intention to use E-Banking	348 customers who are using e-banking services
E-banking in Colombia: factors favouring its acceptance, online trust and government support	Javier A. Sánchez-Torres Francisco-Javier Arroyo Canada	2018	Colombia	UTAUT1	Performance expectancy Effort expectancy Government support trust : quality of information, perceived security, perceived privecy	Behavioral intention the actual use of e-banking	PE----> BI trust----> BI Trust----> the actual use of e-banking quality of information----> trust perceived security----> trust perceived privecy----> trust BI----> the actual use of e-banking	600 e-banking users

#	Title	Authors	Year	Country	Model	Constructs	Dependent variable	Relationships	Sample
19	Usage based upon reasons: the case of electronic banking services in India	Sangeeta Arora and Supreet Sandhu	2018	Indea	UTAUT1 & TAM	perceived usefulness Effort expectancy social influence Performance Functionality Self-interest Information Service content Credibility. Overall service quality Prior satisfaction level	consumer intention to use e-banking	PU---> intention to use e-banking F---->intention to use e-banking Information---> intention to use e-banking Credibility---->intention to use e-banking EX---->intention to use e-banking PS---->intention to use e-banking PE---->intention to use e-banking SI----->intention to use e-banking SC---->intention to use e-banking OSQ---->intention to use e-banking	600 Bank customers
20	Adoption of mobile self-service retail banking technologies The role of technology, social, channel and personal factors	Apostolos Giovanis Costas Assimakopoulos Christos Sarmaniotis	2018	Greece	UTAUT1	Performance expectancy Effort expectancy Social influence Perceived risk Perceived trust Innovativeness	behavioral intention to use MB	Performance expectancy---> BI to us MB Effort expectancy ---> BI to us MB Social influence---> BI to us MB Perceived risk---> BI to us MB Perceived trust---> BI to us MB Innovativeness ---> BI to us MB	513 smart mobile devices' users
21	Consumers' acceptance and use of plastic money in Harare, Zimbabwe Application of the unified theory of acceptance and use of technology 2	Charles Makanyeza Simolini Mutambayashata	2018	Zimbabwe	UTAUT2	performance expectancy effort expectancy social influence facilitating conditions hedonic motivation perceived financial cost habit	intention to adopt plastic money Usage behavior	PE→BI EE→BI HM→BI HT→BI BI→UB	528 consumers
22	The role of UTAUT, DOI, perceived technology security and game elements in internet banking adoption	Samar Rahi Mazuri Abd. Ghani	2018	Pakistan	UTAUT1	Performance expectancy Effort Expectancy Innovativeness compatibility Perceived technology security gamification	User's intention to adopt internet banking customer's intention to recommend internet banking	PE----> Intention to adopt IB EE----->Intention to adopt IB innovativeness---->compatibility Innovativeness----->PE innovativeness-----> EE innovativeness---> Intention to adopt IB Compatibility------> PE Compatibility-------EE Compatibility-------->Intention to adopt IB perceived technology security---->Intention to adopt IB Intention to adopt IB----> intention to recommend internet banking Gamification=> moderate factor: the positive relationship between customer's intention to adopt and customer's intention to recommend will be stronger when gamification is higher	398 customers of commercial banks
23	Mobile-banking adoption: empirical evidence from the banking sector in Pakistan	Maya F. Farah Muhammad Junaid Shahid Hasni Abbas Khan Abbas	2018	pakistan	UTAUT2	performance expectancy, effort expectancy, habit facilitating conditions social influence hedonic motivation Perceived value (price) Perceived risk Trust	Adoption intention m-banking usage behavior	PE---> m-BI EE------>m-BI SI------>m-BI HM---->m-BI (the strongest predictor) Hbit--------->m-BI (negative) PV------>m-BI m-BI-----> usage behavior	385 bank consumers
24	Investigating the role of unified theory of acceptance and use of technology (UTAUT) in inter- net banking adoption context	Samar Rahia Mazuri Abd. Ghanib Feras MI Alnasera Abdul Hafaz Ngah	2018	*Pakistan*	UTAUT1	Performance expectancy Effort expectancy Social influence Facilitating condition	user's intention to adopt internet banking	Performance expectancy-----> intention to adopt internet banking Effort expectancy------> intention to adopt internet banking Social influence-----> intention to adopt internet banking Facilitating condition-----> intention to adopt internet banking	398 internet banking users
25	Acceptance of mobile banking in Islamic banks: evidence from modified UTAUT model	Syed Ali Raza, Nida Shah and Muhammad Ali	2019	Pakistan	UTAUT2	Performance expectancy Effort expectancy Social influence Facilitating conditions Hedonic motivation Price value Habit.	Behavioral intention actual usage of M-banking	Performance expectancy---> BI Effort expectancy ---> BI Facilitating conditions ---> BI Hedonic motivation---> BI Price value ---> BI Habit---> BI BI----> actual usage of M-banking	299 users of Islamic banks
26	Adoption of mobile self-service retail banking technologies The role of technology, social, channel and personal factors	Apostolos Giovanis Costas Assimakopoulos Christos Sarmaniotis	2019	Greece	UTAUT1	Performance expectancy Effort expectancy Social influence Perceived risk Perceived trust Innovativeness	behavioral intention to use MB	PE----> behavioral intention to use MB EE------>behavioral intention to use MB SI------>behavioral intention to use MB PR------->behavioral intention to use MB PT------->behavioral intention to use MB Inv------>behavioral intention to use MB	513 non-users of MB
27	Acceptance and use of mobile banking: an application of UTAUT2	Kwame Owusu Kwateng Kenneth Afo Osei Atiemo Charity Appiah	2019	Ghana	UTAUT2	Performance expectancy Effort expectancy Social influence Facilitating conditions Hedonic motivation Price value Habit Trust	behavioral intention to use MB	Habit------> Behavioral intention---> use behavior Price value ----> Behavioral intention---> use behavior Trust------> Behavioral intention---> use behavior	300 users of m-banking
28	Consumer attitude and intention to adopt mobile wallet in India – An empirical study	Deepak Chawla Himanshu Joshi	2019	India	TAM & UTAUT1	perceived ease of use (PEOU) perceived usefulness (PU) trust security facilitating conditions lifestyle compatibility	intention to use mobile wallet attitude toward using mobile wallet	PEOU → PU PEOU → TR PU→TR PU→INT PU→ATT SEC→TR SEC → ATT FC→PU FC→ATT FC→INT TR→ATT TR→INT LC→ATT LC→INT ATT → INT	744 participants who were aware of mobile wallets
29	Factors influencing adoption of payments banks by Indian customers: extending UTAUT with perceived credibility	Kriti Priya Gupta Rishi Manrai Utkarsh Goel	2019	India	UTAUT1	Perceived credibility performance expectancy Effort expectancy Facilitating conditions Social influence	intention to adopt payments banks services	PC-----> behavioral intention PE-----> behavioral intention EE------> behavioral intention FC-----> behavioral intention SI-----> behavioral intention	660 valid responses (including 366 responses from small business men and 294 responses from migrant laborers)
30	Integration of UTAUT model in internet banking adoption context The mediating role of performance expectancy and effort expectancy	Samar Rahi Majeed Mustafa Othman Mansour Mahmoud Alghizzawi Feras Mi Alnaser	2019	Pakistan	UTAUT1	**Unified theory of acceptance and use of technology:** Performance expectancy Effort expectancy Effort expectancy Social influence Facilitating condition **Electronic service quality in banking:** Assurance Reliability Customer service Website design	intention to adopt internet banking.	Performance expectancy---->intention to adopt internet banking Effort expectancy---->intention to adopt internet banking Effort expectancy---->intention to adopt internet banking Social influence ---->intention to adopt internet banking Facilitating condition---->intention to adopt internet banking website design---->intention to adopt internet banking customer service---->intention to adopt internet banking reliability---->intention to adopt internet banking assurance---->intention to adopt internet banking website design ----->performance expectancy customer service ----->performance expectancy effort expectancy----->performance expectancy ustomer service----> efforet expectancy website design----> efforet expectancy	395 customers of commercial banks
31	Does gamified elements influence on user's intention to adopt and intention to recommend internet banking?	Samar Rahi Mazuri Abd. Ghani	2019	*Pakistan*	UTAUT1	Performance expectancy effort expectancy Website design Webpages characteristics General self-confidence Gamification	customer's intention to adopt internet banking customer's intention to recommend	PE------> intention to adopt internet banking EE------> intention to adopt internet banking website design-----> PE website design-----> EE website characteristics------>PE website characteristics------>EE website characteristics----> website design website design-----> intention to adopt internet banking General self-confidence---->intention to adopt internet banking General self-confidence-----> PE intention to adopt internet banking---->intention to recommend	398 customers of commercial banks
32	Investigating consumer intention to accept mobile payment systems through unified theory of acceptance model An Indian perspective	Kanishk Gupta Nupur Arora	2020	India	UTAUT2	performance expectancy, effort expectancy, habit facilitating conditions social influence hedonic motivation	behavioral intention use behavior to use mobile payment systems	PE---> BI---> UB EE----BI---->UB habit----> BI---->UB FC---> BI----> UB SI----> BI----> UB HM----> BI----> UB / week predictors	267 mobile payment users

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