Financial Technology, Customer Experience, Behaviour and Banks Financial Performance: The Case of United Arab Emirates

التكنولوجيا المالية وتجربة و سلوك العملاء والأداء المالي للبنوك في دولة الإمارات العربية المتحدة

by

AMAL HAZEEM SAEED HAZEEM ALMASAFRI

A thesis submitted in partial fulfilment
of the requirements for the degree of
DOCTOR OF PHILOSOPHY IN BUSINESS MANAGEMENT

at

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November 2022

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**Thesis Supervisor
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ABSTRACT

The primary aim of this study is to investigate the influence of the experiences of users towards Fintech on the banks' financial performance, testing the intermediation role of confirmation, familiarity and customer satisfaction, in light of Expectation Confirmation Theory. In the study, a quantitative approach is used to study the hypothetical associations on the conceptual framework. This thesis collected data from primary and secondary sources, utilizing surveys and bank financial reports. The data was collected from 590 valid surveys and 11 banks' financial reports during Covid-19 pandemic.

The research shows how Fintech enhances banks' profitability. The results reveal that economic, perceived service quality, security risk, operational risk, financial risk are the main factors that met customer expectations after Fintech was experienced. Furthermore, confirmation also has a positive effect on customer satisfaction – moderated by familiarity - and customer satisfaction has a significant relationship with customer intentions and loyalty. In addition, customer loyalty has a positive relationship with a bank's financial performance. This research identifies the key factors based on customer evaluation of Fintech services in the banking sector and the moderating effect of user familiarity with Fintech. The results advance the area of knowledge on understanding customer perception of Fintech based on actual usage, which also has practical contributions and theoretical implications.

The results reveal that economic benefit and service quality are together positively associated with confirmation, while security, operational and financial risks are significantly associated with confirmation. Both convenience and seamless transaction processing results show that they are not significantly associated with confirmation. The positive effect that confirmation leads further to

user satisfaction, loyalty and continuous intention to use Fintech are confirmed, and user's familiarity is found to be a significant moderator in the relationship between confirmation and satisfaction. There is a significant relationship between confirmation, satisfaction and loyalty, which is related to bank financial performance.

This study focuses on the United Arab Emirates bank customers which limit its generalisability to other banks globally, however, banks adopt common standards in the application of financial instruments. The empirical study contributes to advancing the understanding of the benefit and risk factors that have useful implications in users' experience of Fintech. Based on the fact that bank managers, in general, can benefit from this study's finding to capitalize on the positive factors, to improve Fintech platforms to meet user's expectations and remove barriers arising from the risks that ultimately improve financial performance. The finding of not confirming convenience and seamless transaction processing as benefit factors on Fintech bank platform requires serious consideration by the bank managers to develop users' friendly Fintech platforms in the banks. The results inform the bank managers to develop marketing strategies to consider customers' level of familiarity with Fintech.

Keywords: *Fintech, Consumer behaviour, customer experience, Confirmation of Expectation, Financial performance*

الملخص

الهدف الأساسي من هذه الدراسة هو دراسة تأثير تجارب المستخدمين تجاه التكنولوجيا المالية على الأداء المالي للبنوك ، واختبار دور الوساطة للتأكيد ، والإلمام ، ورضا العملاء ، في ضوء نظرية تأكيد التوقعات. في الدراسة ، تم استخدام النهج الكمي لدراسة الارتباطات الافتراضية على الإطار المفاهيمي. قامت هذه الرسالة بجمع البيانات من المصادر الأولية والثانوية ، باستخدام التقارير المالية للبنوك. تم جمع البيانات من 590 مسحًا صحيحًا و 11 تقريرًا ماليًا للبنوك خلال فترة الإغلاق الناجمة عن تفشي وباء كورونا.

يحدد هذا البحث العوامل الرئيسية بناءً على تقييم العملاء لخدمات التكنولوجيا المالية في القطاع المصرفي والتأثير المعتدل لإلمام المستخدم بالتكنولوجيا المالية . يوضح البحث كيف تعزز التكنولوجيا المالية ربحية البنوك. تظهر النتائج أن جودة الخدمة ، والمخاطر الأمنية ، والمخاطر التشغيلية ، والمخاطر المالية هي العوامل الرئيسية التي تلبي توقعات العملاء بعد تجربة التكنولوجيا المالية. علاوة على ذلك ، فإن التأكيد له أيضًا تأثير إيجابي على رضا العملاء ـ معتدل من خلال الألفة ـ ورضا العملاء له علاقة كبيرة مع نوايا العملاء وولائهم. بالإضافة إلى ذلك ، فإن ولاء العملاء له علاقة إيجابية مع الأداء المالي للبنك. تقدم النتائج مجال المعرفة حول فهم تصور العملاء للتكنولوجيا المالية بناءً على الاستخدام الفعلي ، والذي له أيضًا مساهمات عملية وآثار نظرية.

تكشف النتائج أن الفوائد الاقتصادية وجودة الخدمة ترتبط معًا بشكل إيجابي بالتأكيد ، في حين ترتبط المخاطر الأمنية والتشغيلية والمالية بشكل كبير بالتأكيد. تظهر كل من نتائج معالجة المعاملات المريحة والسلسة أنها غير مرتبطة بشكل كبير بالتأكيد. تم تأكيد التأثير الإيجابي الذي يؤدي به التأكيد إلى إرضاء المستخدم والولاء والنية المستمرة لاستخدام التكنولوجيا المالية ، ووجد أن معرفة المستخدم التكنولوجيا المالية هي وسيط مهم في العلاقة بين التأكيد والرضا. هناك علاقة ذات دلالة إحصائية بين التأكيد والرضا والولاء ، والتي ترتبط بالأداء المالي للبنك.

تركز هذه الدراسة على عملاء بنوك الإمارات العربية المتحدة مما يقصر تعميمها على البنوك الأخرى على مستوى العالم ، ومع ذلك ، تتبنى البنوك معايير مشتركة في تطبيق الأدوات المالية. تساهم الدراسة التجريبية في تعزيز فهم عوامل الفائدة والمخاطر التي لها آثار مفيدة في تجربة المستخدمين في التكنولوجيا المالية. استنادًا إلى نتائج الدراسة أن مديري البنوك بشكل عام يمكنهم الاستفادة من هذه الدراسة للاستفادة من العوامل الإيجابية ، لتحسين منصات التكنولوجيا المالية لتلبية توقعات المستخدم وإزالة الحواجز الناشئة عن المخاطر

التي تؤدي في النهاية إلى تحسين الأداء المالي. يتطلب من مديري البنوك معالجة سلاسة المعاملات و مدى سهولةاستخدام منصات التكنولوجيا المالية باعتبارها من معززات استخدام التكنولوجيا لدى البنوك. تُطلع نتائج الدراسة أن مديري البنوك يجب العمل على تطوير استراتيجيات التسويق للنظر في مستوى معرفة العملاء بالتكنولوجيا المالية .

الكلمات المفتاحية: التكنولوجيا المالية ، سلوك المستهلك ، تجربة العملاء، تأكيد التوقعات ، الأداء المالي

DEDICATION

I would like to dedicate this thesis to my family members, especially to my mother for all the given care, love and support. My deepest gratitude goes to you, Mom, for all the encouragement you provided me throughout my Ph.D. journey especially when times got tough. Finally, I would also like to dedicate it to my work colleagues and friends.

IN THE NAME OF GOD, THE MERCIFUL, THE COMPASSIONATE
All praise and thanks be to God, the Most Gracious, the Most Merciful, for giving me the strength, patience to complete this doctoral thesis.

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LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structure
BSC	Balanced Score Card
Conf	Confirmation
Conv	Convenience
Eco	Economic
ECT	Expectancy Confirmation Theory
EDP	Expectancy-Disconfirmation Paradigm
Fam	Familiarity
FR	Financial Risk
GCC	The Gulf Cooperation Council
Loy	Loyalty
LR	Legal Risk
NIM	Net Interest Margin
NPM	Net Profit Margin
NPS	Net Promoter Score
OR	Operational Risk
PSQ	Perceived Service Quality
Rep	Repurchase
ROA	Return on Assets
ROE	Return on Equity
SaaS	Software as a service
Sat	Satisfaction
SPC	Service Profit Chain
SPSS	Statistical Package for Social Sciences
SR	Security Risk
STP	Seamless Transaction Processing
TAM	Technology Acceptance Model
TCE	Transaction Cost Economics
TRA	Theory of Reasoned Action

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

In recent years, researchers have exhibited an interest in studying the extent of customer willingness to adopt Financial Technology (referred to as Fintech hereafter), moving to online and digital banking channels. The advancement in Information Technology (IT) and the presence of the internet have become a fundamental channel in service delivery as it changed the way how firms communicate and conduct business. Yet, we have little understanding of what influences users' continuance intention of Fintech as well as loyalty to the service provider. Research to date regarding Fintech has focused on the consumer perception of Fintech on the basis that it is new in the market, and being studied from different theories. However, it is important that we expand the current knowledge of Fintech to explore the factors impacting customer behaviour after service experience and its outcomes towards the customers and firm financial performance. This research investigates users' experience of Fintech and its relation to financial performance in the banking sector in the context of an emerging economy. The pursuit of a balance between perceived benefits and risks is the fundamental concern for most organizations, including financial institutions. The common notion that underpins much of the management and finance research, is that the higher the risk the higher the expected return. However, for financial institutions, it is important to maintain acceptable returns and minimize risks to maintain transaction efficiency and establish loyal customers (Hempel, Coleman & Simonson 1986).

This study seeks to develop and empirically test a model that investigates the relationships of Fintech positive and negative factors during Covide-19 lockdown on customer satisfaction via confirmation and familiarity, customer intention and loyalty and its overall relation to the financial

performance of banks. The chapter begins with an overview of the study organized as follows: the background of the study that helps to identify the gaps in extant Fintech literature. Section 1.2 demonstrates the background of the study that helps to identify the gaps in extant Fintech literature. Section 1.3 elaborates on the problem statement. Section 1.4 introduces the research motivation. Section 1.5 discusses the research questions. Section 1.6 identifies research aims and objectives. Section 1.7 and 1.8 explain the research significance and contribution. Finally, the research approach is followed by a general outline of the thesis.

1.2 BACKGROUND OF THE STUDY

Over recent years, a shift was noticed in management thoughts to deliver a higher level of services across all channels moving from product to service-dominant logic by the growth of artificial intelligence and blockchain. In order for financial services sand banks to remain competitive and stakeholder – focused, interest – based digital technologies was adopted refers to Fintech. Fintech was adopted in new business models resulted in new banking products and services like; digital payments, digital cash collections, digital remittances, digital leasing, digital investments, digital insurances, digital lending, digital factoring (Gomber, Koch & Siering 2017).

The growth in IT systems and automated technology across industries are having a critical impact on the economics and social domains. More precisely, there is an increasing awareness from customers on the advanced automated channels to use and conduct transactions, leaving firms to progress their management practices and product offerings. Banks are an essential component of every society and economy. They impact the daily lives of people by supplying them with the opportunity to benefit financially whilst providing corporates with the capital required for operations. The development of technology has impacted traditional banking systems, most of the banks internationally are under intensive pressure from consumers, competitors and importantly

from the rapidly changing economic environment to digitalize financial services (Shim & Shin, 2016). Fintech has been described as the future era of the financial industry although it disrupts traditional financial systems. However, it is deemed to be the most innovative way of conducting banking (Milian, Spinola & Carvalho, 2019).

The phenomenon of unprecedented growth of Fintech products and services across industries is having a critical impact on the economic, social, employment domains and banks operation. According to Manatt (2016) that main risks and concerns facing banking industries in implementing Fintech are legal and regulatory issues with risk management, cybersecurity issues, high risk of investment, technical complexity of integrating Fintech functions and difficulty in hiring qualified personnel to make Fintech operation effective. However, due to the stiff competition by the fintech companies that impacted banks comfort zone underscores the importance of adoption of technological innovation for financial services to ensure sustainable growth of service providers (Oghuma et al. 2016).

With the development and growth of non-bank Fintech lending firms, banks are faced with decrease in their customer base (Milian et al. 2019). This decrease in customers is also accompanied with decrease in profits. As pointed by Thakor (2020) that the banking sector comes with its protocol in approving and transaction processing whereas Fintech companies can personalize and offer product customizations, however for banks it can be difficult to offer customized products and services because it lacks of flexibility Thakor (2020). Most banks and financial institutions have invested in automation bank products and services, integrated with information technology infrastructure, to enhance performance and meet client needs. However, return on investment remains a substantial risk for the majority of banks was low and challenged (Baba 2012). Nowadays, banks have extended their financial offerings by Fintech, as it promises

to generate new revenue streams, offers personalized products, provides cross-selling products, and in turn encourages long-lasting customer relationships. Furthermore, in today's digital banking, the bank has access to the choice of customers through broad offered services; from standard online transactions to advanced banking transactions involving video consultancy, credit brokerage, mobile payments, mobile remittance, P2P lending, and crowdfunding (Barberis, 2014). Kim et al. (2015) described Fintech as the development of existing electronic financial services that advance financial services offered to the public.

Chen, Wu & Yang (2019) conducted a study to understand the drivers of fintech innovation among financial firms. They found that Fintech innovation has been considered by 62.7% in non-financial companies rather than financial firms. As a result, these Fintech stat-ups may become a major danger for banks. They suggested that financial services leaders can mitigate the negative effect of Fintech offering by Fintech companies by investing heavily in the digital innovation of financial. Furthermore, Chen et al. (2019) suggested that the financial sector needs to consider the most Fintech innovative products and systems yielding a substantial value addition such as artificial intelligence (AI), blockchain and crowdfunding.

The adoption of AI, blockchain and crowdfunding have been considered intensively in inclusive finance research. Since the first introduction of AI was in 1956 by McCarthey (cited in Zhong,2008), the term has been widespread worldwide. AI has transformed traditional banking services in the process of handling transactions like consumer interaction, market research, fraud detection, credit scoring and Robo-advisory (Belanche et al. 2019; Acunto et al. 2018). Acunto, Prabhala and Rossi (2018) studied the impact of robo-advisors on investor's portfolio performance, and found that Robort-advisors positively impact investor's decisions and negatively decrease behavioral biases that raise from the employee-customer relationship.

It was evident from Fintech literature that blockchain development within the financial sector is gradually increasing due to its popularity among customers and securely by service providers. Blockchain is mainly used for money transfer, distributed computing and digitalizing assets (Goldstein et al. 2019). The benefits of blockchain systems on financial sectors have been highlighted in previous literature (Tapscott & Tapscott 2016; Chong et al. 2019). Chong et al. (2019) explored blockchain innovation within Fintech companies in China. They found that the ability to categorize five models determines the digital experiences that work on the blockchain, creating value for each business model is important to capture value. It was highlighted that the advanced development of blockchain technology enabled the widespread interest in Fintech companies to offer cryptocurrencies in mobile payments, international remittances and investments as they are known for business value addition and cost effectiveness. They are challenging financial institutes that offer Fintech products and services.

Furthermore, Sangwan et al. (2019) looked into the literature of Fintech and categorized the academic papers based on the purpose for which Fintech is developed. The authors find that there are three themes of Fintech in the studies (i.e. financial industry, innovation technology, and regulations). This study suggested that the impact of Fintech on stakeholders like industry analysts, competitors, regulators, banks and customers can be understood through consumers, market players and regulatory bodies. In this regard, Navaretti, Calzolari & Pozzolo (2017) raised the debate on whether Fintech and banking are friends or enemies. However, they reported that Fintech innovation can improve bank efficiencies although Fintech entrants increase competition among banks which stresses bank margins and returns. Consequentially, consumers will get many options of bank services to deal with. Hence, bank growth is required to be understood constantly (Financial institutions using social media – do consumers perceive value? 2019). Jagtiani and

Lemieux (2018) suggested that banks require to stay focused on the relationship between bank-customer relationships while adopting new technologies in order to retain competitiveness in the market. Hence, this study opted to mark the relationship of the experiences of users' attitude towards Fintech and how it is related to banks' financial performance.

There have been various studies in Fintech and digital banking, with authors studying the factors influencing user adoption of Fintech (Stewart & Jürjens 2018), getting customer perception on the benefits and risks of using Fintech (Ryu 2018) and stressing the importance of maintaining relationships between banks and customers while digitalizing bank services (Amin 2016; Ali & Raza 2017). Collectively, these studies enrich the current emerging literature of Fintech utilization. However, a comprehensive study was recommended by Ryu (2018) for future researchers to study Fintech based on customers' actual use of Fintech services and its impact on Fintech providers' financial performance.

Banks are among Fintech stakeholders that are service providers (Sangwan et al. 2019). Accordingly, it is worth looking into banks. Fintech requires to recognize the critical factors (positive and negative) that determine competitiveness and efficiencies for the bank. For banks to remain competitive, they need to constantly address consumer adoption and satisfaction since not all customers perceive Fintech as an equally beneficial tool (Stewart & Jürjens 2018). Hence, banks involved in Fintech can leverage their resources in choosing their target market in terms of potential customers and in which product this technology is needed. It is time to examine the Fintech effect on the financial performance of Banks. Although literature and empirical studies on Fintech are well established, they focused primarily on factors impacting customer willingness to adopt Fintech services (Sangwan et al. 2019; Milian et al. 2019; Abramova & Böhme 2016); giving

limited attention to understanding actual utilization of Fintech, customer satisfaction and its relationship to financial performance (Belanche et al. 2019; Ryu 2018).

According to KPMG's Fintech report (2021), the financial sector is increasingly looking to partner with Fintech companies for ease of digital transformation in order to improve offered products as well as to maintain market share. While the differences between the two companies are different in focus or approach, a common goal remains in improving customer experience. Hence, the financial service sector is using Fintech solutions to address the needs of the customers through offering Fintech solutions. Accordingly, a new standard of customer experience for today's consumers is needed since traditional financial institutions have historically maintained a service-oriented approach to attend to the customer banking needs, through face-to-face interactions and retain relationships. However, with digitalization in most of the banking products, there are more options for the bank to still connect with clients outside branch walls.

According to a survey conducted by Blumberg Capital, by 2022 88% of all banking interactions will be conducted using virtual banks through using a mobile app or the internet as a result of Fintech being at the forefront of most of the financial institutions (Blumbergcapital 2021). Belanche, Casaló & Flavián (2019) concluded that building a relationship with customers through a strong foundation of communication platforms is the main similarity between transaction financial institutions and disruptive Fintech banking applications. Customer confirmation of exceptions, satisfaction and loyalty are vitally important to financial institutions since they lost their monopoly (Biais et al. 2019). Fintech firms are likely to take bank customers over in case banks are not raising the level of digital banking services for customers (Leong 2018; Hua, Huang & Zheng 2019; Gelis & Woods 2014).

Although Fintech studies have been initiated in the last few years, according to the researcher's knowledge, no study based on the customer experience of using Fintech products and services was initiated. Moreover, measurement of overall customer satisfaction, loyalty and repurchase intention was not covered in prior Fintech studies. As well as, it's worth to study customer confirmation of experience of Fintech in banks during Covid-19 lockdown when most of banking transactions were conducted online due to the government preventive measures to protect people's live. The pandemic has changed consumer behaviour towards digitalized services, investment and payment methods.

In response to the lockdown, United Arab Emirates has started early to implement procedures to help its economy during the crisis, including supporting citizens to use Fintech applications in order to accomplish their financial transactions during the lockdown. The government of United Arab Emirates announced that mobile digital wallets should be used as the main method to transfer salaries for the private sector and the unbanked population, who depend heavily on cash (Sophia 2020). However, Fintech applications' success in most of countries faced numerous economic challenges, and issues associated with the low mobile wallet penetration rates, cultural barriers and digital literacy, and the most important is low user trust and familiarity (Panos & Wilson 2020). Furthermore, UAE Fintech report shown that UAE has high penetration rate of digital payments in financial services.

Thus, the goal of this research is to provide a better understanding and knowledge of the experiences of users' attitudes towards Fintech during Covid-19 lockdown, in light of the Expectancy Confirmation Theory (ECT) in the Arab world and to measure the impact of Fintech consumer adoption on the banks' financial performance to highlight Fintech margins and returns.

This study focuses on the United Arab Emirates (UAE), which is considered one of the leading countries in technology advancement and digitalization in most of the corporate world. Moreover, there is high consumer adoption of online banking. To achieve that, the present study focuses on developing a conceptual framework to show the constructs and dimensions driven from the theoretical background in light of Expectancy Confirmation Theory and prior studies. In addition, this research sheds light on the role of customer satisfaction and customer loyalty in explaining customer behavioural intention in relation to using Fintech in the banking sector.

1.3 RESEARCH PROBLEM

The banking industry contributes to the economic development and sustainability of country, industry and individual. Therefore it's important for banks to streamline products and services by reengineering processes and services to achieve banking industry competitiveness and continuous performance (Milian, Spinola & Carvalho 2019). The competitiveness in banking industry is achievable by brining value to stakeholders through using technology advancement (Gomber, Koch & Siering 2017). Thus, the adoption of technology in the banking industry completely changed banks operations, by simplifying its operation and services which resulted to competitiveness and performance. The implications of competitiveness are; value creation, efficiency, flexibility, quality driven, customer empowerment, loyalty, familiarity, satisfaction, productivity, etc (Belanche et al. 2019; Ryu 2018; Gai et al. 2018; Keisidou et al. 2013; Milian, Spinola & Carvalho 2019; Al-Malkawi, Mansumitrchai & Al-Habib 2016). There have been many studies on the relationship between Fintech and customer intention to use the service (Abramova & Böhme 2016; Stewart & Jürjens 2018; Ryu 2018; Barbu et al. 2021). However, there is a lack of evidence to establish a clear relationship between Fintech and banks competitiveness,

performance and customer experiences in the banking industry especially in the Middle East region.

In recent years traditional banking industry is facing challenges due to growing Fintech and remittance companies around the world to supply the need of customers (Gitman et al. 2015). The banking sector, which is a fundamental contributor for worldwide economic growth, deal with multiple serious issues and challenges including, technology advancement, fraud and risk cases, changes in customer demands and expectations, and increasing global and local competition that require regular assessment of customer perception, satisfaction and behavioural intention assessment. According to Mbama and Ezepue (2018) and Stewart and Jürjens (2018) the banking sector is obliged to continually assess provided services and enhance quality in order to remain competitive. Hence, traditional banking systems have been adversely affected by Fintech development through growing self-dependent customers, growth of non-bank lending firms, and resulting demanding customers. It was claimed that utilizing technology in the banking sector influenced banks to move away from the transactional nature of customer relationships to more customer service-focused relationships (Zhou et al. 2018; Mohammed & Ward, 2006).

Meyliana, Fernando and Surjandy (2019) stressed out that due to the highly integrated risk factor of Fintech of 60%, there is a growing interest in literature to understand the contributing factors to Fintech success and what are the main benefits brought by Fintech banking applications to the consumer. In addition, since in service industry, there is a close link between firm growth and customer demand (Ilyina & Samaniego,2011). Therefore, confirmation of customer expectation of using the service and behaviour toward Fintech is a critical subject for banks to remain competitive and to measure if implemented systems fulfills its promises.

According to Flavian et al. (2019) that the last couple of years shown increased level of disruption in the financial market due to the digital revolutions led by new entrants in financial services utilizing the latest technology and becoming customer – centric services. Accordingly, these new entrants are potential risk for banks in maintaining competitive customer base in the market. For that, the financial industry witnessed major changes in operations and transaction channels to retain existing customers (Sangwan et al. 2019; Milian et al. 2019).   Recent studies evident that the development of Fintech has enhanced competitiveness of banks and played significant role in improving the efficiency of services by banks (Razzaque et al. 2020; Barbu et al. 2021). Banks are attempting to reduce cost of customer acquisition, risk control, reduce operation cost, improve efficiency and overall user experience leading to increasing strong demand for Fintech applications. Therefore, customer experience is the center matter that banks require focus, According to Greve (2003), service industry pursues various strategies to accomplish performance objectives. Subsequently, linking experience, customer satisfaction, loyalty and repurchase intention and banks profitability may assess to make financial institutions take overview on provided services while considering advanced strategies on products and services (Keisidou et al. 2013; Mbama & Ezepue 2018). In essence, Hallowell (1996) suggested that loyalty increases organization's financial profitability and as evident by Ladhari, Ladhari and Morales (2011) and Akhter et al. (2011) that 5% increase in customer retention led to an increase in firms profitability from 25% to 85%. Accordingly, there is a linkage on firm profitability and customer retention level.

According to a report published by PWC that Fintech providers are facing risks when it comes to Fintech offering and fulfilling customer demands. The reports state that the Gulf Cooperation Council (GCC) are having the Fintech systems, However, they lack success stories except for the

United Arab Emirates where the government supports digitalization (Chan, Dayal&Denecker, 2021). Also, another report conducted by kearney (2013) found that banks in the GCC are lagging in assessing customer satisfaction on provided services. Accordingly, since most of the banking systems are moving toward Fintech which in turn reduces bank-customer relationships; hence, customer relationship dimensions are required to be established in digital banking studies (Zhou et al. 2018; Mohammed & Ward, 2006). Keisidou et al. (2013) noted that the financial industry is growing competitively, and the success relies on the ability to achieve customer trust on mitigating risks on the offering, which clarifies the work of banks; while maintaining the bank-customer relationships.

Although literature and empirical studies in Fintech established, the primary focus was on factors impacting customer willingness to adopt Fintech services (Sangwan et al. 2019; Milian et al. 2019; Abramova & Böhme 2016). According to Belanche et al. (2019) and Ryu (2018), future researchers need to study the factors impacting customer willingness to continue using Fintech based on the actual utilization of Fintech and its relationship to the financial performance of service providers. Furthermore, Belanche, Casaló & Flavián (2019) proposed that future studies need to consider actual customer usage of Fintech. They proposed in the future to have other variables related to customers like customer experience or customer satisfaction as moderators and related to company like reputation or quality dimensions that may affect customer adoption process. Finally, they proposed that future studies may explore other cultures in adopting Fintech like Asian, Latin American…etc.

Furthermore, Ryu (2018) stated that for future research in Fintech, perceived benefits and risks need to be regularly analyzed due to changes in customer perception. Also, it was highlighted that

Fintech studies are limited to general Fintech products whereas other products like internet insurance, personal financing, equity financing, retain investments and Bitcoin were not investigated. Moreover, Ryu (2018) added that little research in non-western countries continues in relation to Fintech consumer adoption in order to view the issue of Fintech usage among different nations.

Therefore, there is a lack of consideration in relation to customer satisfaction and consumer behavioural intentions based on actual usage in Fintech. Also, to the best of the researcher's knowledge, there is much work untouched in the relationship between Fintech and financial performance in the banking sector. According to Dwivedi, Alabdooli and Dwivedi (2021) that the traditional banking industry in the UAE weakened by the economic slowdown and COVID 19, as well due to the widespread of Fintech and remittance companies to meet customer financial. Besides that, the research on Fintech in UAE is encouraged because in MENA region, UAE in particular has led regional efforts to increase the adoption of technology in the financial service industry. The UAE's Fintech sector has grown rapidly making the country the largest Fintech hub for startups in the MENA region. This sector has flourished as a result of national vision to adopt the latest innovative technological systems in the financial services, the development of the government driven ecosystem, establishment of government policies i.e. sandboxes and the start of financial free zones (Magnitt 2021).

To support this notion, this study is an endeavour to mitigate the research gap in this regard. More importantly, it is evident in the Fintech literature that limited research examines the impact of Fintech on firm financial performance, particularly in emerging markets including the UAE. Moreover, Fintech researchers suggest researching the phenomena in developing countries (Ryu 2018; Belanche et al. 2019).

1.4 RESEARCH MOTIVATION

This section paves the way to enact the research problem by reinforcing the research motivation from a contextual and practical point of view as it works on preparing the research aim extraction. The last couple of years are marked with disruptions and new challenges for traditional way of banking. Banks serve as critical financial intermediaries in any country economic activity by effectively converting society's deposits into diverse investments and loans, so fostering economic growth and social development. The banking industry's management is closely linked to economic growth and market share, as a result, there is a greater need for performance evaluations. The banking industry has changed its operational method and is now devoted to boosting competitiveness through cost structure analysis in order to improve operational performance and minimize operating costs. According Saksonova and Kuzmina-Merlino (2017) that innovation can provide a competitive advantage and consequently increase firm value. In a rapidly changing business environment, innovation is essential to firm ability to improve its performance and achieve high customer base and growth.

According to modern financial intermediation theory, uncertainty, information costs, and transaction costs all play important roles in the financial intermediation process. The Fintech revolution has resulted in the development of artificial intelligence and automation innovations that have transformed the finance industry. It has not only increased the level of accuracy in defining the target audience, but it has also increased customer engagement and reduced the time required to resolve queries (Chen, Wu & Yang 2019; Buckley et al. 2020; Thakor 2020). Accordingly, the adoption of Fintech has allowed traditional financial institutions to lower their costs. Furthermore, the growth of internet and mobile banking have driven banks to reduce the number of physical branches and shifted resources to digital services, increasing their cost

effectiveness. Besides that, the banking methods witnessed major changes in terms operation and regulations of banking transactions. therefore, crucial for banks to understand customer experience of Fintech and its relations to banks profitability. Based on Thakor (2020) customer willingness to adopt and continue using digital banking services is critical for banks to remain competitive in offering and performing financial activities and services in a rapidly changing industry. Hence, the implications of financial technology for society, banks and customers are crucial for investigations. Advances in the internet, IT, mobile, cloud and big data have helped Fintech to grow and penetrate within the financial industry among financial and non-financial firms. For example, in factoring transactions, it is now common that companies obtain working capital against invoices and no longer depend on getting original invoices through a digital invoicing platform. Also, in the brokerage market, now it is common for customers to trade online; bank customers are able to change accounts, transfer remittances and handle other banking products. However, the last couple of years are new entries to the financial market by Fintech companies have intensified the competition in the banking industry leaving customers with many platforms to do financial transactions and substitute or switch accounts easily. Therefore, customer experience towards Fintech in the financial industry is a crucial issue for the financial firms (namely, banks) to keep market share, increased profitability, achieve financial innovation and create enhanced customer oriented models, thereby improving comprehensive competitiveness.

With the rise in population, economic growth, rapid mobilization and the escalation of technology use and adoption in transactions, three-quarters of the world's GDP growth have been promoted to continue to emerge from the banking sector in the next 15 years (Truong 2016). Specifically, with the urbanization of customers, the high level of education, and openness to developed countries, it may not be brilliant to reduce the capabilities of the banking sector in developing countries,

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especially as the adoption of the Internet rises and the presence of many international companies in emerging countries. Accordingly, the banking sector must streamline the banking operations similar to the Fintech companies (Gomber, Koch & Siering 2017). According to Truong (2016) experts in the banking sector anticipate that sooner, the banking sector will be used for deposits while the rest will be done using Fintech channels. Pollari (2016) stressed that although banks do not continually catch up with the technical changes similar to technology companies; however, they can win a number of their existing clients since banks have trusted regulated systems with greater confidence in secure banking channels. However, these repercussions do not prevent customers to switch between financial firms and explore various serveries.

Banks provide business environments with financial transactions, which permits their customers to withdraw and deposit money, obtain banking facilitation and different financial products and services, etc. In other words, they support the monetary and supply of money from capital providers (that is, creditors and depositors) to debtors. Given that there is a certain range of customers with a specific amount of funds; hence, banks need to keep an eye on their customer's requirements and needs. This will simply be done by means of providing top recognition to consumer services. Moreover, the service area in many developing and developed countries has been converted into one of the maximum vital sectors and is also a number one contributor to GDP (Szirmai 2012). According to Milian, Spinola and Carvalho (2019), it is essential for the banking sector to pay attention to all of the banking channels utilized by the clients with a prime focus on products offered digitally through Fintech regimes and for client offerings additionally on the way to guide all of these channels. Furthermore, the banking sector is large enough to capture and manifest nearly all of the important attributes of consumer-perceived service benefits and risks of

using Fintech reaching to factors of excellence in offering Fintech and in turn increase the likelihood that consumers remain with the bank. Nevertheless, there is a considerable dearth of literature with regard to service industry management, particularly in relation to the banking industry in developing economies. Therefore, a measurement of perceived benefits and risks of Fintech in banks from a customer's experience point of view may sound appealing at this point in addition to the effect on banks' financial performance. This sort of investigation and measurement is critical in enabling bankers to improve their performance and be alarmed by the constant changes in the dynamic banking environment.

According to Sangwan et al. (2019) Fintech consumers and producers are the two worthy areas for further studies that can be identified: Firstly, to continue measure consumer willingness to adopt Fintech in the financial services with a prime focus on the younger generation; secondly, to measure the financial performance of banking sector not gained enough attention in Fintech studies. Also, according to several studies, non-western and collectivist countries are worth establishing Fintech investigations (Keisidou et al. 2013; Ryu 2018; Belanche, Casaló & Flavián 2019). Also, the measurement of banks financial performance has been under-represented in research studies (Milian, Spinola & Carvalho 2019), as well as research on the outcome of customer experience at the core service delivery (e.g. customer satisfaction, confirmation of expectations) and the behavioural outcomes (repurchase intention and loyalty) (Belanche, Casaló & Flavián 2019).

In summary, this research addresses the important investigations of what influences customers of Fintech to continue their intention to use it and to what extent it is related to bank financial performance, by capitalizing on the positive and negative factors linked to Fintech. This study

hopes to assist decision-makers in enhancing their business services and strategies and regulators to secure transactions done through Fintech channels. Moreover, understanding the outcomes of customer experience related to Fintech will enrich the understanding of the impact of customer satisfaction on repurchase intention and customer loyalty through customer confirmation and the overall way how all of these factors relate to firm financial performance. This is a worthy addition to the research and banking sector domains as claimed by Lee-Kelley et al. (2003) that it costs the bank more to attract customers rather than to retain existing customers.

Therefore, the desire to do this research are two main ones: the first objective is to address customer experience of using Fintech and its relations to bank's profitability. The second objective is to establish Fintech research in the Arab world where few empirical studies have been conducted. This study conducted on Fintech in United Arab Emirates is encouraged, which is one of the leading Arab countries in digital banking and IT advancement as well as the government concern of innovation in a service industry and attempts to create a mature Fintech ecosystem.

1.6 RESEARCH AIM AND OBJECTIVES

The primary aim of this study is to conduct a research on Fintech in UAE is encouraged by investigating customer experience of using fintech and its relation to bank profitability. Therefore, the below extracted further objectives are listed to achieve this study's aim, this research pursues the following objectives:

RO1: To investigate the effect of positive valence on confirmation of using Fintech.

RO2: To investigate the effect of negative valence on confirmation of using Fintech.

RO3: To investigate the effect of confirmation of using Fintech on customer satisfaction.

RO4: To investigate the effect of satisfaction of using Fintech on customer loyalty and repurchase intention.

RO5: To investigate the effect of customer loyalty and repurchase intention on bank profitability.

RO6: To investigate the effect of familiarity on confirmation and customer satisfaction.

1.5 RESEARCH QUESTIONS

The present study has formulated the research questions based on the main desire to investigate the experiences of users towards Fintech and its relation to the financial performance of banks. Indeed, scholars suggested adding more variables that have not been considered in Fintech's previous studies like quality dimensions, customer loyalty and customer satisfaction (Belanche, Casaló & Flavián 2019; Stewart & Jürjens 2018). In addition, there are calls to conduct studies based on users' experience of using Fintech service (Belanche, Casaló & Flavián 2019; Sangwan et al. 2019) and to measure Fintech in financial institutes and to take into consideration the financial performance of Fintech services (Stewart & Jürjens 2018). Hence, the present study precisely emphasizes the following research questions:

RQ1: What are the effects of positive valance factors on confirmation of using Fintech?

RO2: What are the effects of negative valance factors on confirmation of using Fintech?

RQ3: What is the effect of confirmation of using Fintech on customer satisfaction?

RQ4: What is the effect of customer satisfaction of using Fintech on customer loyalty and repurchase intention?

RQ5: What are the effects of customer loyalty and repurchase intention on bank profitability?

RQ6: Do familiarity moderates the relationship between confirmation and customer satisfaction?

1.7 SIGNIFICANCE AND CONTRIBUTION OF THE STUDY

- RESEARCH SIGNIFICANCE

Based on the reviewed established Fintech research, the current study fills a gap in Fintech research, and it will give insights on customers, service providers (banks), and the environment in which this study will be conducted. Firstly, there is considerable growth and consideration of Fintech research among academics. However, these studies were undertaken in the more developed country context, with less focus on the developing countries. Also, to the best of the researcher's knowledge, the new proposed model is not tested before, and it is the first time that such an approach has been used to test customer satisfaction, loyalty, repurchase intention and financial performance in the Fintech context. This research aims to identify the factors that affect customer satisfaction of using Fintech and thereafter repurchase intention and loyalty, which can be useful to information system researchers in general and in particular Fintech researchers. The study of Sangwan et al. (2019) revealed that the success of any information system especially Fintech is highly associated with consumer behaviour. Prior Fintech research focused solely on customers' perception to adopt Fintech ignoring the role of customers' experience of using Fintech (Stewart & Jürjens 2018; Ryu 2018; Belanche, Casaló & Flavián 2019). Despite the importance of the customer experience matter in using Fintech, thus research remains somewhat scant as the focus remained on studying Fintech perception and overall consumer willingness to adopt the service. Moreover, Verhoef et al. (2009) suggested that customer experience research is determined by the outcomes of customer experience. Thus, little knowledge is known on the variables including the customer experience of using Fintech.

For the second group, the customers, Fintech managers require to understand the clear differences between benefit and risk factors associated with Fintech based on customer level of familiarity

with the service and user profile. Knowing the distinction between them enables service providers to capitalize on the characteristics of each Fintech user and effectively meet customer experience and demands. This can be achieved by studying confirmation of expectations that enable to get clarity on the overall service delivery and thereby improve customer continuous use of the transactions and constant loyalty to the firm. Bansal & Taylor (2015) indicated that customer satisfaction and service quality are distinct factors to determine customers' switching intentions. As well as, according to Jun and Palacios (2016) suggested that convenience of the service is require to be analyzed in parallel to the service quality as customers' continuous use of Fintech is doubtful (Ryu 2018), while service providers are enlarging the technology services and expanding the investments. Thus, Fintech providers will not recover the costs and achieve success.

The third group consists of Fintech providers in general and banks in particular. There is an increasing awareness of the impact of technology in services enabling it to become an indispensable strategic choice to digitalize services or use acritical intelligence to advance management practices, leading to positive market presences, business continuity in any circumstances, new revenue generations and customer services improvement. All of these are models of Fintech applications that require a considerable amount of investment to advance the technology infrastructure of banks. According to Stewart and Jürjens (2018) that investment in information technology in firms is crucial; however, it is associated with the risk of return on investment. Hence, exploring the financial performance in this research is a worthy addition to understanding profitability streams of banks and links to customer intention of using Fintech and loyalty.

Lastly, this research is significant to the country in which the phenomenon is studied, in this case, United Arab Emirates (UAE) in particular and Arab countries and fast-developing counties in

general. During the past 20 years, massive economic development happened in the UAE, along with numerous digital transformation initiatives implemented across most sectors, both by the public and government. Across the GCC, banks in the UAE were among the leaders in the field of Fintech adoption. For example, Emirates NBD invested one billion AED to launch the Emirates NBD Future Lab. Also, Emirates Islamic Bank was the first bank in the UAE to support Apple Pay and Samsung Pay as well as "digitize or die" is the bank vision. However, Mashreq Bank has gone step future to launch the region's first digital bank "Mashreq Neo" using robotics to manage accounts as well they developed Mashreq Pay. In the GCC, banks in Saudi Arabia started to initiate cashless payment methods using technology-boosting digital payment (Deloitte 2019). Hence, there is a huge tendency to invest in technology among financial firms in the GCC, whereby Fintech is likely to flourish in the region.

On the other hand, the importance of Fintech was noticed by regulators in the GCC for example (i.e. the Dubai International Financial Centre, Bahrain and Abu Dhabi) to provide a platform for emerging technology companies as well as create a supervisory environment to aid the development of Fintech. Also, the UAE Central Bank and the Saudi Arabia Monetary Authority have announced plans to use Blockchain technology to issue an authorized digital currency "Bitcoin" in transactions between two countries (Deloitte 2019). UAE is considered one of the leading Arab countries in technology advancement and digitalization in most of the corporate plus high consumer adoption of online banking a lot of changes have been taking place; however, measuring the impact of these changes has not been done effectively in the scholarly literature of this decade. For this reason, the present research will contribute to the academic work in general and UAE society in particular.

1.8 RESEARCH CONTRIBUTION

The current study is expected to contribute to the existing body of knowledge theoretically, empirically and practically.

- THEORETICAL AND EMPIRICAL CONTRIBUTION

As per the reviewed literature, most of Fintech studies considered Theory of Reasoned Action and Technology Adoption Model mainly in studying factors influencing customers to use Fintech and many of those studies considered to use Technology Acceptance Model or constructs that were developed either in isolation or in different settings (Ramdani, Kawalek & Lorenzo 2009; Mbama & Ezepue 2018). Therefore, this research will consider studying the perceived benefits and risks based on the customer experience of using Fintech, based on extending the Expectancy Confirmation Theory (ECT) by adding customer loyalty construct to establish the relationship to bank financial performance. To the best of the researcher's knowledge, prior studies did not look at Fintech from the Expectancy Confirmation Theory perspective. Expectation Confirmation Theory originated with the consumer dissatisfaction/satisfaction model that was constructed to show how consumer repurchasing behaviour can be anticipated by reviewing satisfaction levels. According to ECT, customers go through stages till they reach the repurchase intention (Oliver 1980). Hence, the present study enhances the understanding of consumer behaviour towards Fintech by expanding ECT theory. To clarify, the study introduces four dimensions negative factors and positive factors based on valance theory, service quality and customer loyalty of using Fintech, and its overall impact on banks financial performance through confirmation, customer satisfaction and repurchase intention, which had not previously been brought together in one framework.

Empirical evidence of the impact of Fintech on the firm financial performance is lacking. Therefore, this study establishes the relationship between customer behaviour of using Fintech and bank financial performance by studying the main benefit and risk factors based on customer actual usage of Fintech services provided by banks and its relation to bank financial performance. Fintech literature needs to advance a step forward and move away from intention to user's actual use. Therefore, this study will provide results from an emerging economy in the Middle East, namely the United Arab Emirates (UAE). There are few studies on this area, especially at the financial sector level, although Sheth (2011) noted that UAE perceives the characteristics of a developed country in terms of a high level of competencies and innovation adoption.

- PRACTICAL CONTRIBUTION

The outcomes from this proposed study will provide bank managers, Fintech regulators and customers of the banking service sector with valuable information on what are the important factors that need to maintain or capitalize (benefits) or avoid (risks) related to Fintech. Hence, it is essential for bank management and marketing managers in the banking sector to consider the components of benefit and risk associated with Fintech, as well as the importance of customer satisfaction, customer loyalty and customer repurchase intentions. Also, bank management must measure the impact of Fintech on banks' financial performance as it will enable them to measure the costs and profits in addition to the establishment of research and development in Fintech products and services. Nevertheless, the banking sector is essential in the economy and a primary contributor to GDP.

Banks are not offering tangible products; provided services are generally evaluated and judged by consumer perception. Therefore, bank service management must regularly check customer

satisfaction, loyalty and behavioural intention of continuous usage of Fintech. Moreover, it will help them to get an idea of the customer's needs and demands. Other elements which might help bank managers to understand the risks of Fintech as per customer evaluation and tend to solve the issue. In addition, it will enable the bank management to allocate a special help desk to attend to customer queries on transactions conducted via Fintech platforms. Also, Fintech policymakers in the bank will benefit from this study to keep an eye on the terms and conditions of using Fintech among consumers. Also, knowing the most demanded products by customers would provide many benefits to academics and practitioners. Importantly, there is little knowledge about Fintech in the MENA region in general, and few studies focused on the banking sector in the United Arab Emirates in particular. Also, customers need to pay attention to all positive and negative factors associated with using Fintech and thereafter how the banking sector can provide support in this regard.

1.9 RESEARCH APPROACH

This study is grounded in a positivist research stance which is at the heart of the deductive approach, a quantitative research technique was employed to investigate the research objectives and questions. The researcher believes that this research method yields the investigation required to understand the influence of the experiences of users' attitudes towards Fintech on the financial performance in financial institutions. Consequently, this research has suggested a conceptual framework along with fourteen hypotheses based on theory and the previous literature. The developed hypotheses in this research show whether the better customer experience of the used Fintech services provided by the banks are more likely to reflect on customer satisfaction in a way that will generate positive behavioural intention and loyalty, and will undoubtedly help with realising financial gains for banks.

The important characteristic of the study model is the fact that according to the researcher's knowledge that it is the first time that customer satisfaction, loyalty, repurchase intention are being tested in the Fintech context using so many advanced degrees of factors related to Fintech characteristics. Although benefit and risk factors that have been selected in the study were tested in Fintech literature. However, they have never been combined in one model before, to analyze how they interact with one another and the cumulative effect they have on customer satisfaction, loyalty and repurchase intention and thereafter on the financial performance of banks.

This research has been designed in accordance with the positivist methodology (Baroudi & Orlikowski 1991), as the basis for this study since the main focus of this research is to examine the proposed framework to investigate customer experience of using Fintech in the banking sector. Thereafter, it measures the important factors impacting customer satisfaction, repurchase intention, loyalty and determines connection to the profitability of banks. To address research questions and objectives, a quantitative technique is the most suitable one for this research study since it is positivist in nature, and this technique is mainly used to investigate a proposed conceptual framework that has prior empirical associations (Saunders, Lewis & Thornhill 2012). A survey was chosen to conduct the data collection since it is cost-efficient and more convenient with collecting data from a large number of participants (Collis & Hussey 2014; Ryu 2018). The survey was deployed by an online questionnaire, and this stands to be a benefit for data gathering in regards to making the survey available for participants to get to online access. Statistical Package for the Social Sciences, version 23.0 (SPSS) and Structural Equation Model (SEM) was used to analyze the data and interpret the findings.

1.10 THESIS STRUCTURE

This thesis is divided and consisted of seven chapters. Below, Figure 1.1 is an outline of each chapter.

- **Chapter One:** This chapter provides an introduction to the thesis by illustrating the research background, justifying the tendency behind establishing the research through research problem and motivation. Moreover, the researcher presents the aims, objectives, questions, significance and contribution of the study. Finally, the researcher explains the research approach, process and gives a summary of the chapters.

- **Chapter Two:** This chapter reviewed primary literature relating to Fintech in depth by addressing specifically consumer benefits and concerns of using Fintech. Numerous models and theories were discussed in relation to Fintech and customer perception. Also, it addresses the literature relevant to outcomes of customer experience namely, confirmation, familiarity, customer satisfaction, repurchase intention, customer loyalty and firm performance. This chapter concludes by illustrating the emergent knowledge gaps from the literature review that require to be studied through linking the elements in order to add new contributions to academic research.

- **Chapter Three:** concentrates on the study of theoretical foundation supporting formulation of those variables that have been previously discussed related to customer perception of Fintech. The conceptual model was developed for the empirical assessments. Thereafter, the chapter draws on the formulated hypothesis and the relationships between constructs.

- **Chapter Four:** addresses the methodology that this study implements to evaluate the proposed conceptual framework. This chapter primarily justifies the research methodology used in the study in light of research questions and objectives, along with the sampling frame, data collection and analysis. Also, this chapter provides a brief justification of each of the selected methodologies.

- **Chapter Five:** explains the method that the researcher used to generate findings to the survey questions. The researcher collected data by using a survey in form of a questionnaire, Statistical Package for Social Sciences (SPSS) was used to analyze the data by the assessment of the proposed hypothesis and thereafter illustrate the findings. Also, Structural Equation Modelling (SEM) was implemented to test the degree of the associations between a few of the unbiased and dependent factors. Also, this chapter provides a discussion on the empirical findings. Additionally, the researcher analyzes and reviews the results in relation to the literature review and previous research studies discussed in chapters two and three.

- **Chapter six:** discusses the conclusion and outcome of the quantitative analysis. Moreover, it elaborates on the theoretical and managerial implications, and it highlights a summary of the research study's limitations. Eventually, the chapter concludes with suggested future studies.

Figure 1.1 Thesis Structure

Chapter 1	• Research Background, Research Problem, Research Motivation, Aim and Objectives, Research Questions, Research Significance and Contribution, Research Approach and Thesis Structure
Chapter 2	• Literature Review and Research Gap
Chapter 3	• Theoretical background and hypothesis development
Chapter 4	• Research Methodology
Chapter 5	• Data Analysis and Empirical Findings
Chapter 6	• Discussion of the Empirical Findings
Chapter 7	• Conclusion • Theoretical and Managerial Implications • Research limitations • Future research

1.11 SUMMARY

This chapter has introduced the research by giving an overview of the impact of the essential variables that influence customer satisfaction, intention, loyalty and overall profitability in the banking sector. It highlights the significant increase in Fintech in the financial industry by drawing on the importance of factors and concerns that influence consumer behaviour. It further reveals how familiarity as a consumer personal element is an important factor to observe when investigating post-service behavioural experience. As part of the research problem, the importance of further understanding the Fintech customer experience after the service is being used and the

influential variables influencing customer satisfaction, intention and loyalty should be tested. Consequently, it is evident that firm financial performance was highlighted as part to the research problem that is worthy of investigation to link the service growth factor with the generated profitability.

Moreover, the rise of marketing, IT investment expenditure and business competitiveness compared to the lack of clear Fintech regulations, in addition to the switching customer intentions and loyalty to the firm, have all influenced banking providers to change the implementation of banking services equipping advanced platforms with responsive customer service systems. Additionally, the emphasis on the factors that influence customer satisfaction in using Fintech would help bank managers to ensure the functionality of Fintech based on users' habits and prior experience. Establishing and sustaining long-lasting relationships with consumers is the ultimate aim of a service provider (Levy and Hino, 2016). Therefore, the evaluation of consumer behaviour in the banking sector has become the focus of many academics and practitioners in the context of Fintech. The methodological approach is outlined as a quantitative approach through the use of an online questionnaire. Finally, the structure of the thesis was outlined to answer the research questions and objectives of the study. The following chapter will provide an overview of the important literature to the study, along with the gap in the research that has led this research to the present endeavour

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

In the previous chapter, the problem of the study and the research questions were discussed and addressed. Accordingly, Fintech has raised the current debates in the management of financial innovation literature, i.e. the influential factors for consumer banking habits. The main objective of this study is to explain Fintech as per consumer behaviour based on user's experience as influenced by perceived benefit and risk reforms. It then discusses the confirmation of customer expectations, customer satisfaction, customer loyalty and customer experience. Consequently, customer intentions of Fintech continuance usage (repurchase intention) will be explored. This chapter provides a comprehensive basis for the research of Fintech conducted in terms of Fintech definition, theories used, influential factors, outcomes of customer perceptions. The chapter ends by presenting the current gaps in the literature.

2.2 HISTORICAL ORIGIN OF FINTECH

The pioneering study on "the Evolution of Fintech" by Arner, Barberis and Buckley (2015) represents the most thorough endeavour in codifying the origins of Fintech that can be backed to the early 1990s, and it presents " Financial Services Technology Consortium project that was developed by Citigroup" (Arner, Barberis & Buckley 2015). However, it is only since 1993 that the term Fintech has been known to the public. It was published in the American Banker magazine (Hochstein 2015), as a new phenomenon that Citigroup is undertaking to use technology in the banking and investment operations. Banks aimed at the comprehensive understanding of Fintech as a technology used in financial institutions.

On the other hand, Arner, Barberis and Buckley (2015) underlined that the term Fintech arose in the scientific literature in the 1970s, by Abraham Leon Bettinger. This was supported by (Prabook 2016). It outlined the theoretical models on how to get day-to-day problems resolved in financial service institutions and the role of technology that can provide required tools to overcome issues. Furthermore, the first definition of Financial Technology was defined as "an acronym which stands for financial technology, combining bank expertise with modern management science techniques and the computer" (Bettinger 1972, p.62).

Arner, Barberis & Buckley (2015) added that Fintech has attracted the attention of regulators, financial institutions and consumers only since 2015. For instance, the worldwide popularity of Fintech terms has been growing according to google trends. It was evident that the interest in Fintech increased dramatically from 20% in 2015 to >90% in 2019, presenting 2015 as the breakout year when Fintech began to gain popularity in the market at an increasing rate (Google Trends 2019). As well, PWC Company conducted a global fintech survey in 2019 on the level of adopting Fintech strategy in financial services institutes and found that 48% of financial service organizations have integrated Fintech fully into their strategic operation, while 37% of financial service organizations have emended technology into their products and services (PWC 2019). Accordingly, both of the figures are evident in that the majority of financial service institutes have integrated Fintech into their systems and part of the operational model delivering Fintech based on financial products and services.

Moreover, Arner et al. (2017) traced the development journey of Fintech over the last 150 years and found that the Fintech development evolution has gone through three phases over the past years. The authors believe that the growth of Fintech has started with the separation of finance from technology development; then, it was followed by the digitalization of finance reaching the

transformation phase of finance innovation being "a new era of Fintech" as started in the year of 2008. Arner et al. (2017) argued that the latest development of Fintech created new financial products that compete with traditional banking systems, raising a challenge to regulators to have standards and encourage them to promote innovation and safeguard against risks.

This rapid growth of Fintech in the finance industry has attracted the focus of practitioners and researchers to study the development of this phenomenon, which would seem warranted given the fundamental role Fintech plays in the development of finance and its infrastructure. Since then, the meaning of Fintech has been reinterpreted by many researchers; however, until now there is a lack of a unified definition of the Fintech term in the scientific literature (Milian, Spinola & Carvalho 2019). In the next section, the definition of Fintech is explored.

2.3 FINTECH DEFINITION

Fintech refers to the novel processes of building systems to model financial products such as bonds, stocks, contracts and money due to digital technological advancements (Freedman 2006). More precisely, Arner, Barberis and Buckley (2015) described Fintech as technologically enabled financial innovation that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services. Wang, Xiuping & Zhang (2021) explained Fintech as the increase competition in financial markets that provide services in which traditional financial institutions do inefficiently or not at all, and expand the pool of users of such services. However, they will not be able to replace banks in the majority of their key functions. Similarly, Schueffel (2017) indicated that Fintech is the new "disruptive and incremental innovation in the financial industry". Chishti and Barberis (2016) outlined in their book that Fintech is the "marriage between finance and technology".

In the academic articles, Fintech has been defined as "an acronym which stands for financial technology, combining bank expertise with modern management science techniques and the computer" (Bettinger 1972, p.62). Also, Ryu (2018) described Fintech as "innovative and disruptive financial services, where IT is a key enabler". With Fintech, users may engage in various digital banking transactions: mobile payments, transferring money, making loan requests, purchasing insurance, managing assets, mobile payments, mobile remittance, and P2P lending (Barberis 2014; Ryu 2018). These studies relate more to Fintech acceptance and willingness to use than experience and may not fulfil the current banking and regulators' needs.

Milian et al. (2019) highlighted that Fintech is a neologism that describes the contracting worlds of finance and technology, it can be spelt as "FinTech", "Fin-Tech" or "fin-tech". Gomber et al. (2017) described Fintech as it is concerned with combining financial activities (for example, loans, payments, transfers of monetary values and diverse banking operations) with IT services (for example, cloud computing, mobile internet). Despite the increasing interest of both academics and professionals in Fintech transactions; however, there is a lack of a unified definition among practitioners (Milian et al. 2019). Arner et al. (2017) claimed that although Fintech combines financial and IT service, it is not confined to specific industries (for example, finance) or business models (for example, crowdfunding and P2P borrowing). Also, there is a consensus among scholars that customers are the keys to the success of Fintech's effective demand in the finance industry (Nurfadilah & Samidi 2021). Even though the concept of Fintech is at the infancy stage, it is growing rapidly in the industry, which has risen the interest of scholars to study the phenomena in the financial industry.

Zafar et al. (2019) suggested that the financial sector is under immense pressure to continue the measurement of whether Fintech services improve customer satisfaction and loyalty scheme.

Investigations into the level of benefit and risks of adopting Fintech have provided many insights into which customers opt for the use of the service. Similarly, Lee and Shin (2018) suggested that Fintech is directly linked to the core businesses of the financial institutions such as financial inclusions and innovations for products and services that require establishing effective relationships with consumers. According to Ryu (2018), perceived risk and benefit is essential determinant of customers' switching intentions. The outcome of the study indicated that Fintech benefits and risks are significant factors affecting the Fintech continuance intention.

Over the years authors have attempted to define the meaning of "Fintech", and stressed that there is no general definition of Fintech (Schueffel 2017). Hence, a universally accepted definition of Fintech is absent because literature in financial technology has only been established in recent years, and there are relatively few practitioners and researchers to develop a plethora of definitions or descriptions. Moreover, a survey has also been conducted in Germany on the extent to which financial service customers can define Fintech; 70% of them did not know how to define it (Schueffel 2017). Therefore, the result of this recent survey shows that it is necessary to outline and stress out an academic understanding of the meaning of Fintech. Within finance, economics, industrial management and data system literature, Fintech was variedly described with such terms as a disruptive technology in financial transactions. Therefore, twenty academic definitions of Fintech were collected from the literature and presented in the Table 2.1.

Table 2.1 Summary of Fintech Definitions Embedded in Previous Literature

Reference	Definition
Micu and Micu (2016)	*"Financial Technology, also known as 'FinTech', is a new sector in the financial industry that incorporates the whole plethora of technology that is used in finance to facilitate trades, corporate*

	business or interaction and services provided to the retail consumers."
Carney (2017)	*"'FinTech' can be broadly defined as technologically enabled financial innovation that could result in new business models, applications, processes or products with an associated material effect on financial markets, financial institutions and the provision of financial services."*
Williams (2017)	*"'Fintech' is an economic industry composed of companies that use technology to make financial systems more efficient."*
Jun and Yeo (2016)	*"Recent advances in information and communications technology (ICT) have led to the rapid development and expansion of new and innovative financial services, often termed 'FinTech'."*
Schueffel (2016)	*"'Fintech' is a new financial industry that applies technology to improve financial activities."*
Dorfleitner *et al.* (2017)	*"The term 'FinTech', which is the short form of the phrase financial technology, denotes companies or representatives of companies that combine financial services with modern, innovative technologies."*
Bettinger (1972, p.62)	*"an acronym which stands for financial technology, combining bank expertise with modern management science techniques and the computer"*

Arner, Barberis and Buckley (2015)	*"Fintech as the substitution of traditional financial institutions that covers entire financial services and products technology-enabled financial institution to develop financial institution processes."*
Chishti and Barberis (2016)	"Marriage between finance and technology."
Kuo – Chuen and Teo (2015)	*"Fintech is combining innovative business models and technology to enable, enhance and disrupt financial services."*
Freedman (2006)	*"Financial technology as being concerned with building systems to model, value and process financial products such as bonds, stocks, contracts and money."*
McAuley (2014)	*"FinTech is an economic industry composed of companies that use technology to make financial systems more efficient."*
Ernst and Young (2016)	*"Fintech as a type of business using hardware and software technologies to provide financial services."*
Kim et al. (2015)	*"Fintech is the technical process resulting from developing and establishing new financial software which might affect the entire traditional system."*
Ryu (2018)	*"Innovative and disruptive financial services by non-financial companies, where IT is the key factor."*
Milian, Spinola and Carvalho (2019)	*"Fintech is a neologism that describes the contracting words of finance and technology, it can be spelled as "FinTech", "Fin-Tech" or "fin-tech."*

Gomber, Koch and Siering (2017)	*"Fintech as it is concerned with combining financial activities (for example, loans, payments, transfers of monetary values and diverse banking operations) with IT services (for example, cloud computing, mobile internet)."*
Schindler (2017)	*"FinTech' is technologically enabled financial innovation that could result in new business models, applications, processes, products, or services with an associated material effect on financial markets and institutions and the provision of financial services."*
Chen, Wu andYang (2019)	*"FinTech can be broadly defined as any technology that enables or enhances the provision of financial services."*
Thakor (2020)	*"Fintech is the use of technology to provide new and improved financial services. Part of the motivation for the emergence of fintech is that, while information technology has made everything – from computers to cars – cheaper and more functional, the unit cost of financial intermediation has apparently not changed much in over a century."*
Buckley et al. (2020)	*"Fintech is the key driver to achieve financial inclusion and the broader objective of inclusive growth."*

As apparent from the Table, there is no consensus regarding the meaning and common understanding of the term "Fintech". Thakor (2020) argued in his publication "Fintech and banking: What do we know?" The technology around Fintech and its interaction with banking is evolving, so do the understanding and definition of it. Simultaneously, the definition of Fintech is

relatively recent, and it has been discussed quite a bit in the past few years. However, without a doubt, Fintech appears as a great important phenomenon to the financial industry that is in contact with information technology and innovation. Interestingly, the extraordinary growth and consideration of Fintech was an area of concern by researchers. Specifically, both Arner, Barberis & Buckley (2017) and Schindler (2017) were interested to know the potential addition that Fintech could add to the finance industry. They gathered that financial technology innovation has the power to alter the fundamental finance products as well the underlying attributes of the financial system. Considering this finding, the impact of financial technology needs to be measured from the financial industry, consumer adoption and law regulation (Sangwan et al. 2019).

Through the definitions presented in the literature explaining financial technology, this research adopts the importance of the role of modern technology in financial technology in general (Chishti & Barberis 2016; Micu & Micu 2016; Schindler 2017). In particular, the definition of financial technology as the main driver for achieving financial growth for institutions and keeping pace with technological changes in the financial sector (Chen, Wu & Yang 2019; Buckley et al. 2020; Thakor 2020), since the financial performance of banks is the major focus of this study. The next section will focus on the significance of Fintech by demonstrating the researcher's views on its contribution to improving and developing traditional financial services. It will demonstrate the phases of Fintech and outline the recent knowledge on the rise of Fintech in the finance industry.

2.4 THE SIGNIFICANCE OF FINTECH

The success of an organisation, without a doubt, relies on consumers associating excellent quality of products and services with it in the financial service industry, which establishes satisfaction and loyalty (Freedman 2006; Schindler 2017; Thakor 2020). Scholars have revealed continuously that the development in technology has risen the quality of Fintech services

provided by the service provider affects the outcome (performance) of the organisation (Hua, Huang & Zheng 2019; Carlson 2015), maximising sales profit (Duncan & Elliott 2002; Kish 2000; Levesque et al. 1996) and strengthening customer relations, improving corporate image, supporting customer loyalty (Newman 2001; Ehigie 2006; Caruana 2002; Szmigin & Carrigan, 2001), along with improved business value creation tools, innovations and market share (Hua, Huang & Zheng 2019). Additionally, customer demands and satisfaction have been identified as having an impact on loyalty and repurchase intentions (Newman 2001; Levesque et al. 1996). Additionally, there is a consensus among scholars that customers are the key success of Fintech's effective demand in the finance industry (Singh & Arora 2011; Shim & Shin 2016; Gomber, Koch & Siering 2017). Thus, the widespread consumer interest in Fintech has made the banking sector focused on providing customized banking products and services to cater to customer preferences, which are mandatory for survival and growth in today's very competitive business environment.

Fintech is deemed to be one of the most crucial factors for managers to consider in the financial industry. Although the core of Fintech is to use technology at most to provide new and improve financial services, the emergence of innovation into that had made financial services cheaper and more functional. Philippon (2014) acknowledged that the unit cost of financial intermediation has not changed much in more than a century which is a burden on companies. as the unit cost of financial brokerage has remained at around 2% over the past 130 years in the United States. Thus, one of the Fintech promises is the unveiling cheaper way to overcome financial contracting and reduce the cost of financial services to improve service providers' and consumers' welfare. Furthermore, more recent studies indicated that Fintech has improved the productivity of financial

industry lending, as well as financial innovation in processes, products and services (Fuster et al. 2018; Thakor 2020; Schindler 2017).

Empirical research on Fintech and business performance indicate that Fintech can be risky but of value to impact companies' performance which is of substantial value to investors (Thakor 2012; Chen et al., 2019). Schindler (2017) found that the development and adoption of Fintech innovations were effective in creating an environment of low-interest rates. That environment has led to downward pressure on profits in the market and an increase for financial institutions to cut down costs. It is well recorded in the literature on the importance of technology in businesses and can be often used to help cut costs (Jagtiani & Lemieux 2018; Chong et al. 2019; Hua et al. 2019). For example, the explosive growth of digital banking in the financial industry has streamlined traditional loan processes to reduce costs (Gomber, Koch & Siering 2017). Moreover, Chen et al. (2019) asserted that blockchain enables multiple applications in the finance industry to offer solutions that speed money transfer, clearing and settlement process. Therefore, it will reduce the costs of transactions.

The current widespread use of Fintech developments and increasing role in shaping financial and banking landscapes have led many researchers to investigate the importance of Fintech in the finance industry (Arner, Barberis & Buckley 2017; Thakor 2020; Stewart & Jürjens 2018; Carlson 2015). Arner, Barberis & Buckley (2017) and Thakor (2020) considered the global financial crisis as the changing point for the financial industry, increasing regulations and risk aversion, in turn, reduction in banks' lending activities. Fintech helped to offer viable options for banks to do lending using technology and considering intermediated financial services to customers. Moreover, Carlson (2015) deemed that the increasing prevalence of mobile technology created demand from customers to enhance banking technology to match their lifestyle. According to Stewart & Jürjens

(2018), banks around the globe faced extreme pressure from competitors to shift into Fintech as a new paradigm for financial services since it bypasses traditional banking systems.

Thus, Fintech and developing traditional banking systems in the finance industry is believed to be a major factor influencing consumers' intentions (Ryu 2018; Belanche, Casaló & Flavián 2019; Stewart & Jürjens 2018). Ryu (2018) indicated that Fintech customers' perceptions of positive and negative factors can have a significant positive influence on customers' behavioural intentions.

2.4.1 THE IMPACT OF WEB3 DEVELOPMENT ON FINTECH TECHNOLOGIES

The growing potential of Fintech from 1.0 to 3.0 compelled traditional banking systems and financial service providers to embark on a revolutionary path led to a new era of the digital world. According to Choudhury (2014) technology development started in 1994 when web 1.0 was introduced to the web, read only content not interactable similar to huge Wikipedia page. But after few years web 2.0 was introduced, made the internet much more interactive because of developments in web technologies because of development java scripts, HTML, HTTP which allowed companies to create interactive platforms like YouTube, Facebook and others when we seek information from any web of any kind simultaneously we also provide them information related to our choices which stored and later sell to other companies who make use to advertise exactly what we are looking. However, the main limitations in web 2.0 were lack of privacy and reliability of resources and interconnectivity and knowledge sharing between platforms across community boundaries. Web 2.0 a was convenience till the introduction of web 3.0. Web 3.0 is the next step in the evolution of interest allowing to process data with near human intelligence using artificial intelligences in blockchain. Its innovative program to help users by providing them with their choices. Its significant step towards open, trusting and permissionless networks. The

four key features of web 3.0 are decentralization, trustful and permissionless, artificial intelligence and machine learning and connectivity and ubiquity (Richardson 2020).

First, the decentralization, blockchain will the centralized data storage like; name, id, categories, ect, also establishing trust in the virtual world because web 3.0 is allowing information to retrieve based on content it can be kept in several locations simultaneously, making it decentralized. According to Richardson (2020) this will dismantle the vast databases currently maintained by internet joints like Facebook, google giving more power to the user. Second, trustful and permissionless, in web 3.0 users will be able to interact directly without the need for trusted intermediary or permission from governing body. Due to this user can access any data relevant to your choice without any approval from 3rd party (Richardson 2020). For example, if the user is researching of some data you don't need to accept its cookies or provide any details as there is trusted bond between the user and the web. Third, artificial intelligence and machine learning, in web 3.0 technology is based on semantic web ideas and language processing, computers will be able to understand the information in the same way people do. For example, the sentence I want to send money, or put a picture instead of send, this seems different in syntax however semantics are nearly identical. This will help the user to achieve more relevant content of their choices and will provide them ease with internet browsing and doing transactions through the web (Richardson 2020). Finally, connectivity and ubiquity, in web 3.0 the internet is accessible to anyone anywhere at any time conveniently, because internet of things and data is accessible since technology is launched in new several devices, these connected devices no longer be limited to computers or smart phones as they were in web 2.0. Accordingly, due to the shortcoming from web 2.0 corporations like amazon, apple, google and financial institutions are transforming their existing services into internet 3.0 apps based on the aforementioned principles (Choudhury 2014). In

summary, web 3.0 is related to blockchain due to the following, it helps to create smart contracts for web pages on the internet, it stores data in the blockchain and it offers a decentralized experience to its users without intermediary (Tsao & Thanh 2021).

The transformation of the World Wide Web (Web 3.0) based on blockchain technology, artificial intelligence, machine learning and data science, reshaping the financial service industry and operational model through decentralization (Voshmgir 2019). Voshmgir (2019) descried web3, as the digital infrastructure in which allows users to trade directly without the need for intermediaries, also known as the decentralized web which is the vision of the future internet in data and service driven model. The developed Web 3.0 ecosystem led by decentralized autonomous organizations has stimulated the demand for structured financial products with the help of 5G's data speed, data formats and software across the globe (Richardson 2020; Tsao & Thanh 202). In web 3.0 computers and technologies provide useful and relevant insights with intelligent interpretation of data and transactions. In Fintech the cashless and virtual economy requires financial organizations to build foundation for the way of delivering banking services and products to the consumers. Hence, the four key features of web 3.0 are required to boost Fintech technology in order to maintain perceived benefits and secure from risks.

Turi (2020) Stated that digitalization is the core banking development and consideration specially in currency with digital currency and payment systems. Accordingly, the technology development of web 3.0 used to support financial services, from payment methods, funds transfer, loans, fundraising and asset management supported by artificial intelligence through blockchain which enables the systems to assist the verification process and safeguard transaction risk timely and efficiently (Turi 2020; Tohang, Lo & Anggraeni 2021). Tohang, Lo and Anggraeni (2021) stated that most of banks are using Fintech due to the promise of its ability to generate new revenue

streams, personalize offers, target cross-selling and improve customer services through using multiple ways to improve customer experience and make the banking products material to the customers. Banking institutions are using tools like chatbots to enhance customer experience, mobile apps to give customers real-time looks into their bank accounts and machine learning to secure against fraud.

2.5 AREAS OF FINTECH IN THE FINANCIAL INDUSTRY

As highlighted in the previous sections, Fintech created disruptive changes into many products of financial services, and this has created a wide range of applications and tied up with several counterparties to provide asset management and investment products. A review of the literature is provided on Fintech that would be considered for the financial industry. These are:

- *Crowdfunding / online marketplace, called peer-to-peer (P2P) lending:* Cumming and Hornuf (2018) explained that crowdfunding is a new platform that allows lenders and borrowers to make financial transactions without intermediaries. According to Langley and Leyshon (2017) crowdfunding is defined as a method of raising funds for projects or ventures by innovative and disruptive methods, typically via the Internet. The popularity of the crowdfunding market increased after the financial crisis of 2008 for micro-businesses or at the early stage (Ahlstrom, Cumming & Vismara 2018), providing new opportunities for entrepreneurs to raise funds and determine chances of growth. Anshari et al. (2019) identified four crowdfunding types which are: lending (debt), investment (equity), reward and donation. Online P2P Lending is a loan technology for underwriting loans where lending is conducted over the Web, without the need for collaterals and involvement of an intermediary. Ahren (2018) and Gonzalez (2019) opined that in P2P lending, they use machine learnings technology to assess the reliability of the borrowers. Additionally, Milian, Spinola & Carvalho (2019) explained that transfer money and

remittances are a platform of P2P that enables individuals to transfer funds in different countries.

- *Artificial intelligence (AI):* Commonly regarded as value addition in financial services through streamlined processes and decisions made through the substitution of human intelligence using technology ranging from, credit scoring, customer interaction via chatbots, Robo-advisors, fraud detection and other automated customer interaction Belanche, Casaló & Flavián (2019). Odinet (2018) defined AI as "the overarching field that seeks to create complex machines that can exhibit all characteristics of human intelligence". Belanche, Casaló & Flavián (2019) noted that AI enhances a company's ability to check big data enabling business operations efficiency, restructuring business operations and improving regulatory effectiveness. Acunto et al. (2018) studied the impact of Robo-advisors on investors' portfolio performance and found that Robo-advisors positively impacted investors' decisions and negatively decreased behavioural biases that arise from the employee-customer relationship.

- *Blockchain:* The advanced development of blockchain technology has enabled the widespread interest in cryptocurrencies that enabled many businesses to offer mobile payments and international remittances that are known for business value addition and cost-effectiveness (Tsao & Thanh 2021). Blockchain technology explained in literature as the "fastest-growing area of FinTech innovation and held large future potential in financial services." (Chen et al. 2019). Adding to that, Glodsten et al. (2019) described blockchain technology as enablers to multiple applications in the area of finance like money transfer, cryptocurrency technology (e.g. Bitcoin) and digitalizing assets that facilities and secuer transactions. Moreover, Chuen (2017) opted for blockchain as "the main game-changer" used in the fourth industrial revolution, detailing its ability in cheaper transaction costs and efficient ways compared to the

traditional financial systems. Nakamoto (2008) invented the first digital currency in blockchain "Bitcoin", then cryptocurrencies have attracted significant attention from the regulators, investors and media (Abramova & Böhme 2016; Fry & Cheah 2016; Foley, Karlsen & Putnins 2019). The most extensively acknowledged type of Fintech products and services is the use of blockchain platforms in the financial industry including banking services, trade finance, insurance and so on (Sangwan et al. 2019; Chong e al. 2019). Polyviou, Velanas and Soldatos (2019) claimed that blockchain technology makes it easier for financial institutions to share information across the financial services value chain, such as cyber-security and physical security data in serval collaborative processes (Tsao & Thanh 2021). For example, SWIFT transactions involve two or more banks in the process that its vulnerable to cyber-criminals attack. To alleviate such attacks, blockchain technology used to facilitate financial organizations in sharing security information or cyber security. As the exchange of security information across collaborating stakeholders can be centrally acquired, processed and sharing, that improves accuracy and richness and overall credibility of the process Polyviou, Velanas & Soldatos 2019; Tsao & Thanh 2021).

Thus, with demand to adopt technology in the banking sector and high risk of security issues, blockchain evident to support productivity of the process in transparent and efficient way and improve risk predication capabilities. According to Voshmgir (2019) that blockchain is one of the important contributions to the development of web3 and is an additional layer to the internet's transaction system.Web3, is a digital infrastructure enables users to trade directly without the need for intermediaries. The development of web 3 made the process of sending money over the web cheap and easy as sending email (Voshmgir 2019). In finance industry, most of financial institutions focused on improving online services such as internet banking and mobile banking at

the start of Fintech trends, due to the benefits of blockchain to the digital banking services, such as, enhanced security, grater transparency, transaction traceability, efficiency and speed and efficient transaction automation (Tsao & Thanh 2021).

- *Digital /mobile banking/ Neobanks:* Advanced Internet technologies and mobile applications have enabled financial industries to apply new and more advanced methods in conducting their business. With advancements in the internet, mobile, big data technologies and cloud; digital banking is a growing area to penetrate multiple functions in the financial industry which is important for banks' survival (Sundarraj & Wu 2005*;* Lee & Greenly 2008). Digital banking allows the customer to have access to services conveniently (i.e anytime anywhere) without constraints. For example, now it is common for customers to trade online in the brokerage market; and also to do financial transactions on the fingertip using the mobile as well as using cardless payment via mobile payment (Zhou et al. 2018). Gomber, Koch and Siering (2017) described digital banking as a key functioning area of Fintech that shapes the future of the banking industry. Saksonova and Kuzmina-Merlino (2017) pointed out that digital banks like neo-banks improve the speed of services and provide convenient mobile services (like remittances, settlement accounts, debit cards, loans, etc). Neobanks were explained as an exclusively online bank operation without an intermediary bank branch network (Saksonova & Kuzmina-Merlino, 2017). Barberis (2014) and Ryu (2018) stressed that, in the digital banking context, digital banking products (such as online banking, personal finance, digital wallets, mobile payments, mobile remittance, loan requests, purchasing insurance, managing assets, etc.)

2.6 DEFINITION OF CONSUMER PERCEPTION

Kelley & Turley (2001) and Laming and Mason (2014) stressed that the overall customer perception of using the service is crucial point for most service organizations to determine efficiency and usage continuity. Consumers' perceptions and expectations are key elements for implementing an effective deployment of customer relationship management in the service industry (Ali & Brooks 2009). This means that the perceived service attributes directly affect the customer's behaviour to judge the overall delivered service experience. The banking industry, like any service provider, changes in consumers' banking preferences, technological advancement and rise of competition in the finance industry have pressurized financial institutes to adopt more customer-oriented practices in form of digital products and services (Zhou et al. 2018; Mbama & Ezepue 2018). Consequently, the recent rising demand for Fintech in the finance industry made banks required to know and understand customers' needs and expectations (Ryu 2018; Arner, Barberis & Buckley 2015; Lee and Kim, 2015), and it was suggested that constant evaluation to customer perceptions is required to improve the overall provided services (Ryu 2018; Milian, Spinola & Carvalho 2019). Mary (2014) defined customer perception as the overall consumer evaluation towards offered organization products and services.

 Zeithaml et al. (1993) stressed out that most of consumer behaviour experts agreed on the meaning of customer perception as the subjective evaluations based on previous service experience, and customer expectations which are the criteria on which service experience is being judged for. Also, based on information processing theory of consumer choice Drawing on Bettman's (1979), that customer perception involves internal and external memory which have a major influence on customer judgment and choice. This means that individual

perceptions can be from the subjective norm of previous service experience or due to social pressure. Furthermore, Teoh et al. (2013) place attention on the user technology experience and familiarity that might affect customer perception, especially in security, confidentiality, ease of use, efficiency, and trust. In the financial industry, it is common that customers are making investments and transactions that have benefits and returns with a positive influence on consumer welfare (Pudaruth 2017). In prior research in the usage of technology in the banking industry, it was well noted that the power of technology advancement and digitalization are the key factors that influence customer consideration of using technology in service (Ryu 2018; Arner, Barberis & Buckley 2015; Yoo, Kim & Lee 2015; Stewart & Jürjens 2018).

2.7 SERVICE DELIVERY

Based on the insight on service quality as provided by Turel and Connelly (2013, p.674), service delivery is presented as 'delivering high-quality customer service which is vital for companies that wish to remain competitive. It is crucial to note that Parasuraman, Zeithaml and Berry (1985) created a service quality framework that consists of five dimensions known as SERVQUAL. The framework includes five measures– service quality: tangibles, responsiveness, reliability, assurance and empathy when handling customers and security. Various studies documented that Parasuraman, Zeithaml and Berry (1985) used the SERVQUAL model to measure the gap between customers' expectations of service quality and their performance of actual service provided (Lush and Vargo 2004; Samen, Akroush & Abu-Lail 2013). Subsequently, a comparison between expectations and actual service experience can easily be established, indicating either positive or negative factors in the overall service delivery (Parasuraman, Zeithaml & Berry 1985). Samen, Akroush and Abu-Lail (2013) suggested in studies measuring customer's expectations that service quality measures have to be considered. Adding to that

Parasuraman, Zeithaml and Berry (1985) suggested that service providers should take into consideration the evaluation of service quality, as the primary focus on the difference between customer expectations and the actual level of service performance.

Vargo & Lush (2004) documented the shift in management from product-centered to a service-dominant logic approach. In social marketing and behavioural economics studies, the service logic approach argues for the dominance of service rather than goods (Merz et al., 2009). Service is described as the fundamental basis of exchange, and the customer is always the value creator of the service (Vargo & Lush 2004). Accordingly, the shift in management highlights the requirement of all service organizations to deliver higher levels of services across operating channels. As a point of departure, numerous researchers have explored the service delivery aspect and its impact on customer behaviour in multiple contexts, for example, online shopping, banking, hospitability (Parasuraman, Zeithaml & Berry 1988). Parasuraman, Zeithaml & Berry (1988) viewed service quality as a customer evaluation of provided service experience by outlining perceived value. Parasuraman, Zeithaml & Berry (1988) indicated that service provider has to present concepts of value as such a trade-off between benefits and sacrifice. However, Ehrnrooth and Gronroos (2013) pointed out that the value of using the service is more defined in services marketing.

Service dominant logic approach has been considered in multiple industries, for example, automotive industry, in the retail sector, in the banking industry, in higher education, in libraries, in the hospitality sector (Mehta et al. 2000; Chi Cui, Lewis & Park 2003; Abdullah 2006; P. Cruz et al. 2010; Amin 2016). However, Rodrigues et al. (2011) argued that every industry is required to deploy effective tools to evaluate service delivery. For example, the retail industry is required to consider service quality measures as more goods and less service. Whereas, in the banking industry, where the service is a more central service performance measurement is more appropriate

using quality aspects (Quester & Romaniuk 1997). Departing from Vargo and Lusch's (2004) assertion that the management shift from product logic to service logic approach, highlights the important role of existing and new customers, as customers are empowered to create value by their participation.

In an e-service context, Zeithaml, Parasuraman & Malhotra (2000) developed e-SERVQUAL to measure the service quality of transactions done through the internet. The e-SERVQUAL model includes efficiency, reliability, fulfilment, privacy, responsiveness, compensation and contact. The e-SERVQUAL model is an updated version of the SERVQUAL model; however, it focuses on electronic services where customers have few tangibles regarding the service provider capabilities and main interaction through network technology (Chu et al. 2012). Social interaction and participation between customer and service provider have added value to the service (Ehrnrooth & Gronroos 2013). It is from this that Heinonen, Johnson & Peterson (2014) pointed out that the role of customers is in co-creating value through participation; however, service providers can consider steps to engage with customers through establishing platforms that allow communication. However, Vargo & Lusch (2008) viewed the customer added value to the service as required to be measured in a more experiential perspective where values are depicted from customer holistic service experiences. According to Vargo & Lusch (2008), services must be experienced by customers, and then the developed service touchpoints are by the service providers. They are better to be viewed based on customer holistic experience. The following section will discuss service delivery and customer satisfaction outlining the importance of customer experience as a measure to influence customer loyalty and continuance intention to use the service.

2.8 SERVICE DELIVERY AND CUSTOMER SATISFACTION

Customer satisfaction is at the heart of service delivery. It remains a fundamental matter for most of the companies wanting to develop and maintain a competitive advantage in the market (Fonseca 2009). The advancement in internet technologies and service digitalization offered by financial and non-financial firms have intensified the competition in banking services. Therefore, customer satisfaction is a crucial issue for banks to remain competitive. Service delivery attributes are continually examined in research and deemed to be a unique factor to customer satisfaction (Rod et al. 2009). Furthermore, Chang, Yan & Tseng (2012) described consumer satisfaction in the e-commerce context as "the evaluative outcome of first-hand transaction experience". Accordingly, it can be viewed that consumer satisfaction is achieved by the cognitive appraisal of the expected performance of the service.

Accordingly, satisfaction is concerned with the customer perspective, in which customers' consumption experience of service has been used to evaluate overall perceived value. Contrastingly, customers may have experience attributed to the service (Kim & Park 2005). Thus, companies need to understand consumer satisfaction attributes and greatly employ formulation of marketing methods and development plans, helping users to bypass all obstacles and reduce uncertainty. As Dale (1999) states that consumers' happiness with a service and a service provider's reputation are the main factors, determining customer satisfaction. Consequently, the company (service provider) must acknowledge the impact of consumer behaviour as far as satisfaction is concerned, and what are the causes of customer satisfaction. To achieve this, service providers must continuously assess customer satisfaction to fulfil desirable outcomes and meet customer interests. Thus, it is commonly understood that consumer behaviour expressed in terms of satisfaction, loyalty, repetitive purchases are service outcomes, showing the extent of customer

pleasures or disappointment of perceived service (Johnston 1995). Furthermore, Rod et al. (2009) opined that service delivery relates to conformance of service quality. This ultimately means that the better service quality is, the more satisfied customers are with the service provider.

In the service management literature, essential service delivery is subject to great academic debate and no consensus on this matter has been reached (Bahia & Nantel 2000). However, researchers and academicians considered service quality dimensions and an antecedent of service delivery (Binter et al. 1990; Babkus and Boller 1992). Although, the causal relationship between banking service quality and customer satisfaction is mature in the literature; however, no agreement has been reached among researchers (Ibrahim, Joseph & Ibeh 2006; Amin & Isa 2008; Rod et al. 2009; Amin 2016; Keisidou et al. 2013; Mbama & Ezepue 2018).

In the banking sector, it indicated the existence of digital banking in the banking services. It appears to be correlated with high customer satisfaction and loyalty. Similarly, Rod et al (2009) found that the efficiency of internet banking significantly impacts e-customer satisfaction that leads to e-customer loyalty and retention. For this reason, Amin (2016) suggested that e-customer satisfaction in using internet banking services is driven by service quality dimensions (e.g. site organisation, user-friendliness, the efficiency of the website, etc.), the website is the main interface between the customer and the bank. Consequently, positive customer perception of the service quality will result in satisfaction with the services provided through the internet.

The financial sector relies on long relationships with customers, which is related more to the trust factor due to the nature of the product and services provided by the bank (Keisidou et al. 2013; Sweeny and Swait 2008). The service management literature describes customer satisfaction as a result of customer perception of the perceived value when using the service. Hollowell, Schlesinger and Zornisky (1996) defined value as "the perceived service quality relative to price

and customer acquisition costs". Hence, when customers believe in the service value over time, they will exhibit satisfaction and loyalty behaviour (Chi & Gursoy 2009). According to Liang, Wang and Farquhar (2009), continuing purchase of the service is due to customer satisfaction and loyalty is an important factor in determining customer repetitive purchasing intention.

The complexity of the services and user familiarity with the web-provided services raised as a matter of concern impacting customer satisfaction. Bressolles, Durrieu & Senecal (2014) viewed that website attributes and easiness of use are factors influencing e-customer satisfaction, as customers might be affected differently. Moreover, Liang, Wang and Farquhar (2009) indicated that the less technical complexity of banking services provided through the internet, the higher customer satisfaction level is. In this situation, customers who have information technology knowledge and are familiar with using services through the firm website can easily use internet banking services; hence, they will have higher customer satisfaction than others (Amin 2016; Ho and Lin, 2012). Consequently, service quality is the determinant of service delivery that can impact customer satisfaction and loyalty leading to the reuse of the internet website to conduct banking transactions. Accordingly, this study will consider addition of service quality as part of positive valance of using Fintech.

2.9 CUSTOMER EXPERIENCE

The difference between customer experience and service quality is the inclusion of customer initial expectations with post-consumption experience (Edvardsson, Enquist & Sebhatu 2007; Chiu et al. 2012).

Voss, Roth and Chase (2008) and Verhoef et al. (2009) described customer experience as a holistic process made up of customer journey, utilizing a set of touch-points across multiple functions designed by the organization to use the service. Also, Meyer and Schwager (2007) highlighted

that customer experience is the internal and subjective user's response to direct and indirect contact with the service provider through navigating to multiple touchpoints. Consequently, customer experience described as a holistic nature encompasses a set of variables such as cognitive, emotional, affective, physical and social responses (Meyer & Schwager, 2007; Voss, Roth and Chase 2008; Verhoef et al. 2009). The value created through the direct and indirect contact between customer, product and company is done through a set of interactions (Meyer & Schwager, 2007) and described by customer's purchasing behaviour (Klaus & Maklan 2013; Mbama & Ezepue 2018). This means that customers compare service expectations with the actual post-experience using the service offered by the firm. Accordingly, a company must deliver the ultimate experience for customers during the service encounter to compete and maintain a competitive advantage (Berry, Carbone & Haeckel 2002).

Earlier research on customer experience focused on the hedonic values of utilizing the service (Schmitt 1999), however, recent studies in the service marketing; the focus on the utilitarian service value and quality dimensions (Vargo & Lush 2004); and also suggests that customer experience is a crucial indicator of service quality evaluation that measures consumer behaviour (Vargo and Lush 2006). The debate of delivering quality service in enhancing customer experience and creating repurchase intention is supported by many scholars. Parasuraman, Zeithaml and Berry (1985) outlined that customer perception post-service experience arises from comparing service quality attributes. In addition, Bansal & Taylor (2015) highlighted that service quality is an antecedent to satisfaction and evident customer switching intention via comparing experience with initial perception.

Carbone & Haeckel (1994) asserted that the purpose of customer experience is to have 'take-away impressions' presented in the form of touchpoints, facilities and points of interactions to facilitate

service delivery. It will be stored in the customer's memory (Schmitt, 1999; Mathwick et al. 2001). Klaus & Maklan (2013) emphasized shaping the overall customer experience due to the new economic offerings in the market, as the customer becomes involved and emotionally attached to the product and service. Jiang and Klein (2009) stated that effective experience has to consider user engagement to the service to become memorable and high tendency positive repurchase intention. Therefore, the main role of a successful customer experience is to create emotional attachment, novelty, leading to customer satisfaction, loyalty and repurchase behaviour (McCole 2004).

2.10 PRIOR RESEARCH ON ONLINE CUSTOMER EXPERIENCE

Exploring the link between customer's perceptions of the Fintech products and services as well as the quality of the service has been the focus of the recent work of many researchers' (Gulamhuseinwala, Bull & Lewis 2015; Navaretti, Calzolari & Pozzolo 2017; Ryu 2018; Belanche, Casaló & Flavián 2019). Recently, researchers have got an interest in the Fintech research; however, Fintech customer experience remains scant (Singh et al. 2019). While previous researchers have developed the foundation of online customer experience (Novak, Hofmann and Yung 2000; Klaus & Maklan 2013; Sambhanthan & Good 2013), further research is needed on the Fintech customer experience and the outcomes of Fintech customer experience in the service industry. Drawing on the description of Fintech in the service industry as the use of technology to make financial services more efficient and improved (McAuley 2015). Inherent in this definition is that advances in information technology have led to the use of new financial activities leading financial services to offer innovative products and services.

Klaus and Maklan (2013) noted that researchers recently shifted the interest in service research to explore online customer experience (OCE) due to the transition of website development to

dynamic websites offering customers the ability to transact easily in the online web environment, eliminating moderators of people and making financial information acceptable. The explosive growth of web 2.0 technologies has arisen for digital services and online providers to offer new opportunities to empower customers with the optimal experience in a service industry (Rose et al. 2012; Navaretti, Calzolari & Pozzolo 2017). Noak et al. (2000, pp.22) defined the OCE as "the cognitive state experience during navigation of service". Similarly, Hoffman and Novak (2009) explored OCE using the cognitive view of customer online interaction with service providers. Furthermore, users will try to reduce cognitive effort by formulating a set of beliefs from experience and comparing it with experience, then take it as a basis for repurchase intention (Kim et al. 2005). However, Rose et al. (2012) outlined that the emotional element is a crucial matter in OCE, and include emotions to understand consumer behavioural intentions based on user service experience.

In addition, Zhang et al. (2015) and Chen et al. (2010) highlighted that users' positive or negative experiences can influence the continued use of the website. This means that customers will be likely to return when the experience is positive, and the opposite shall determine if the user experience is negative. Rose et al. (2012, p. 309) explained that OCE is "a psychological state manifested as a subjective response to the service provider's website". Accordingly, there are many factors influencing customer experience on online transactions. Kuhlthau (2004) and Norman (2004) opted to link customer expectations and motivations as factors to describe customer emotional response to determine users' thinking and continuance intention to use the service online. Faiola et al. (2013) and Kim et al. (2005) suggested that cognitive approaches in online behaviour can show users' perception of the service provider's reliability and effective transaction performance.

Researchers believe that customer experience of online services is an important and critical area since customer satisfaction, loyalty and repurchase intention are consequences of positive cognitive of OCE (Fang et al. 2014). Fang et al. (2014) found a strong relationship between online customer experience and satisfaction. This outcome was later confirmed by (Rose et al. 2012). Moreover, Mbama and Ezepue (2018) stressed that the banking industry is achieving customer satisfaction by effectively enhancing customer online banking experience that influences customer overall experience. Also, Zhou et al. (2018) found that customer experience confirms users' prior expectations to be a significant influence on customer satisfaction and reuse intention in the context of digital financing. In Addition, Mbama and Ezepue (2018) found that a relationship exists between customer satisfaction, loyalty and consumer digital banking experience of online re-usage intention.

Thus, since Fintech is deemed to be the new era that replaces traditional banking services offering products and services beyond the online platform. It is important to explore the outcomes of Fintech customer experience based on highlighted variables developed by previous studies.

2.11 THEORETICAL BACKGROUND OF FINTECH CUSTOMER PERCEPTION

The perception of Fintech can vary among consumers and banks due to social attributes such as social groups' influences, familiarity, technology adoption, bank reputation, relationship with banks, etc. (Banker, Potter & Srinivasan 2000; Narver, Slater & MacLachlan 2004). The use of technology in firms' service delivery to meet customer needs is best elaborated through the degree users perceive the service (Baba 2012). The financial sector is continually evolving with technological change. The adoption of Fintech has erupted around the world in financial services. Fintech is gaining popularity and becoming an important platform for service industries.

Consequently, over the last five years, there has been a significant increase in the academic literature to analyze the Fintech phenomenon. Financial technology has become the current debate in the management of financial innovation literature, i.e. whether consumer banking habits have changed, or not. Ryu (2018) affirmed that the speed of diffusion of new information technology depends not only on the characteristics and strengths of information technology but also on the level of user acceptance to use it. Fintech users' perceptions have been raised in fintech literature since every individual has different perceptions of benefits and risks. Understanding the distinction among factors influencing customer experience can help Fintech providers effectively deliver services and meet users' expectations and future demands. The use of financial technology by regular customers is relatively simple (Jung et al. 2018). However, Kim and Rao (2008) claimed that users often make decisions based on incomplete information. As a result, users face a degree of risk and uncertainty on the usefulness of the decision. Risk is not only a factor influencing a user's continuous intention to make a decision, whereas perceived benefits also provide users with a motive to make a decision (Ryu 2018).

Various theories and models have merged to study consumer adoption of Fintech based on well-established technology and consumer behaviour theories e.g. the Valence Framework developed by Peter and Tarpey (1975); Theory of Reasoned Action developed (TRA) by Ajzen and Fishbein (1980) and Theory Acceptance Model developed (TAM) by Davis (1989). Table 2.2. shows the antecedents of user perceptions of Fintech as identified in previous studies (Lee 2009; Kim et al. 2008; Benlian et al. 2011; Liu, Yang & Li 2012; Husin and Ibrahim 2014; Tingchi Liu et al. 2013; Lee, Park & Kim 2013; Farivar & Yuan 2014; Abramova & Böhme 2016; Dootson, Beatson & Drennan 2016; Ryu 2018; Stewart & Jürjens 2018; Mbama & Ezepue 2018). Most of these studies have considered customers' behavioural intention to adopt Fintech or technology in service

delivery settings using multi-dimensional or single concepts based on the Valence Framework

alone or by combining either or both TRA and TAM.

Table 2.2 Antecedents of user perception of Fintech in Previous Studies

Authors	Research context	Research Content	Research Model	Main factors of benefit	Main factors of Risk
Lee (2009)	Internet banking	Explained the intention to adopt online banking combining perceived benefits and risk	Net Valence TAM and TPB	Financial benefit, Transaction speed, information, transparency	Security privacy risk financial risk, social risk, time convenience risk, performance risk
Kim et al. (2008)	e-commerce	Investigated the antecedents of trust and risk based on the benefits risk framework	benefits and risks jointly in (Net Valence)	Single dimension	Single Dimension
Benlian et al. (2011)	Software as a Service (SaaS)	Analyzed the major opportunities and risks associated to adopt SaaS "from manager"	benefits and risks jointly in (Net Valence" and TAM	Cost advantage, Strategic flexibility, focus on core, competencies, access to a specialized resource, quality improvements	Performance risk, Economic risk, strategic risk, security risk, managerial risks
Liu, Yang & Li (2012)	Mobile payment	investigated the mobile adoption based on risk benefits	benefits and risks jointly in (Net Valence"	Single dimension	Financial risk, privacy risk, psychosocial risk
Melewar et al. (2013)	Online group shopping	investigated perceived benefits, risk and trust	benefits and risks jointly in (Net Valence"	price benefit, convenience benefit, recreational benefit	Financial risk, Psychosocial risk, product risk, time risk

Lee, Park & Kim (2013)	Social network service	Investigated benefit and risk factors influencing intention to share information on SNS	benefits and risks jointly in (Net Valence"	Self-clarification, social validation, Relationship development, social control, self-presentation, social benefit, commerce benefit	Security risk, stigma risk, face risk, relational risk, role risk
Farivar & Yuan (2014)	Social Commerce	Analyzed users social network usage using benefits, risks and trust	benefits and risks jointly in (Net Valence)	Social benefit, commerce benefit	Social risk, commerce risk
Abramova & Böhme (2016)	Bitcoin	Explored drivers and inhibitors of Bitcoin	benefits and risks jointly in Fintech context (Net Valence" and TAM)	Transaction process, Security and Control, decentralization	Financial loss, legal risk, operational risk, adoption risk
Dootson, Beatson & Drennan (2016)	Social Commerce	To examine consumer perception of the value of financial institutions using social media	TAM model	Perceived usefulness, economic value, social value	Not measured
Ozturk et al. (2017)	Mobile payment	To examine factors affecting consumer intention to use mobile payment	Net Valence Framework	Utilitarian value, convenience	Perceived risk, privacy concern
Al-Malkawi, Mansumit rchai & Al-Habib (2016)	Online banking and e-commerce	To investigate customer adoption characteristics of online banking in the middle east and Saudi Arabia	Theory of Diffusion Innovation	Convenience, trust, difficulty, lifestyle, physical contact, complexity, reference group.	Third-party concern

Ryu (2018)	Fintech	to understand why users are willing or hesitant to use Fintech, Moderation - user type	Net Valence framework and TRA	Economic benefit, Seamless transaction, convenience	Financial risk, legal risk, security risk, operational risk
Stewart & Jürjens (2018)	Fintech	analyzed the key factors, influencing users intention to adopt Fintech		Customer trust, data security, value-added, the user design interface, Fintech promotion	Not measured
Mbama & Ezepue (2018)	Digital Banking	investigated customer perceptions of digital bank usage, customer experience, customer satisfaction, customer loyalty and bank financial performance	benefits and risks jointly in (Net Valence)	Perceived value, convenience, service quality, brand trust, employee-customer engagement, perceived usability, DB innovation	Perceived Risk

As shown from the above table, previous studies in the usage of technology have covered both benefits and risks of using technology leading to various drivers influencing user behavioural intentions in adopting technology (Lee 2009; Kim et al., 2008; Benlian et al. 2011; Farivar & Yuan 2014; Abramova & Böhme 2016; Dootson, Beatson & Drennan 2016; Al-Malkawi, Mansumitrchai & Al-Habib 2016; Ryu 2018; Stewart & Jürjens 2018; Mbama & Ezepue 2018). Researchers highlighted various benefits leading to Fintech or technology's continuous intention of use, such as price benefit, convenience benefit, transaction process, quality improvement, transparency, lifestyle, added value, etc. Simultaneously, negative factors affecting the use of technology of Fintech were also considered in the literature, such as security risk, privacy, financial

risk, performance risk, legal risk, etc. Accordingly, elaborating on the benefit and risk user perception is deemed as a strategy that helps both consumers and organizations in adopting Fintech by capitalizing on the benefits and strategizing on risk reduction.

2.12 THEORIES UNDERPINNING THE USE OF FINTECH IN THE SERVICES SECTOR

2.12.1 THE VALENCE FRAMEWORK

Net Valence theory was originated from the economics and psychology discipline developed by Peter and Tarpey (1975), based on Lewin (1943) and Biley (1955) were pioneered to outline that customers perceive products in both desirable positive and negative sides. The theory uses cognitive rationale to explain consumer decision making, assumes that consumers will perceive products and services with both negative (e.g. perceived risk) and positive (e.g. perceived benefit) attributes. Based on the theory, customers will make a decision based on maximizing perceived benefits and minimizing perceived negative (Peter and Tarpey 1975; Kim et at. 2000). In other words, consumers are looking for a high-value gain of acquired products, as indicated by Ozturk et al. (2017) that convenience and utilitarian value were the main positive driven factors for consumers to use online payment. Similarly, Al-Malkawi, Mansumitrchai & Al-Habib (2016) investigated the factors that affect customer usage of online banking in Saudi Arabia. The study adopted eight factors namely, convenience, trust, difficulty, lifestyle, physical contact, complexity, reference group and third-party concern. They conducted the study among Saudi customers of retail banks and found that convenience and lifestyle were the major benefits of using online banking and trust, difficulty, physical contact, complexity and third-party concern were considered as barriers for using online banking services.

Kim et al. (2008) used a valence theory to understand customers' decision process when purchasing from a given website. They integrated the trust element in their analysis to develop a trust-based decision-making model in electronic commerce. They used a single dimension to study perceived benefits and risks. They collected data from 468 internet customers in the United State for the analysis. Their results found that trust and perceived risk significantly impact internet consumer purchasing decisions. Similarly, Liu et al. (2012) proposed a theoretical model based on a risk-benefit framework to explain consumer adoption of mobile payment technology. In this study, perceived benefits were seen as a single construct, whereas the perceived risk was understood in multi-dimensional factors (i.e. financial risk, privacy risk, psychological risk) to predict consumer intention to use mobile payment. 336 was the sample size for the study. The data was collected from Chinese consumers who are familiar with the internet. They found that perceived benefit and risk directly affect consumers' intention to use mobile payment, and consumers consider financial risk as the main aspect to adopt the technology.

However, Tingchi Liu et al. (2013) used valence theory to investigate how perceived benefits and perceived risks are influencing Chinese consumers' trust in group online buying. In the study, they used three factors to explain benefits (i.e. price benefit, convenience and reactional benefit), and four factors of risks (i.e. financial risk, psychological risk, product risk and time risk). They collected data from 578 customers. The results show that perceived benefits and perceived risks have significantly affected consumer attitudes toward online group buying. Interestingly, Lee et al. (2013) explored qualitatively the benefit and risk factors to explore the benefits and risks influencing consumer intention to share their information on social network services.

Lee et al. (2013) explored qualitatively the benefit and risk factors (related to information sharing) impacting users' intention of using and sharing information on a social network. They suggested

various types of benefits (i.e. Self-clarification, social validation, relationship development, social control, self-presentation, social benefit, and commerce benefit), and five types of risks (i.e. security risk, stigma risk, face risk, relational risk, and role risk). The results showed that both proposed benefits and risks significantly influence users' intention to share their information. Interestingly, they found that despite privacy risks users were willing to share their private information. The author suggested future researchers consider the user's type and characteristics.

Ozturk et al. (2017) tested a theoretical model to explain how and why consumers use mobile payment in the hospitability sector with the main focus on understanding the main drivers of consumer behaviour in mobile payments. They have proposed positive valence, convenience, utilitarian value and negative valence in addition to perceived risk and privacy concerns based on valence theory. This is joined with consumer individual differences, compatibility and smartphone affinity that was considered as a factor affecting positive and negative valences of consumer behavioural intention of mobile payment. The utilitarian factor was added as an additional factor and not commonly addressed. It was described as a consumer gain element from the provided efficiency and timely service by the service provider. Privacy concerns, utilitarian value and convenience were found to significantly affect consumer behaviour to use mobile payment. Moreover, the study claims that consumers' decision-making and behaviour of using technology when it comes to payment is a factor influenced by their perception which is according to the study based on a utilitarian value.

Therefore, Ozturk et al. (2017) conducted a study that had twofold implications: for restaurant managers to consider making payment easy and being flexible with customers to eliminate the time-consuming process of payment and to reduce carrying credit cards or cash through paying

through mobile devices. This study suggests practitioners consider utilitarian and convenience factors in analyzing people's behaviour. Importantly, this study considers consumer differences towards accepting the use of technology as a payment method and raised the matter of exploring the lifestyle of customers. As they believe that customers use innovative technology if they believe that it fits their lifestyle. Hence, consumer lifestyle is future research to be considered and not widely considered in previous contexts (Ozturk et al. 2017).

Mbama & Ezepue (2018) proposed a theoretical model to analyze the consumer experience of using digital banking and its impact on UK banks' financial performance. They suggested benefit-risk dimensions to be integrated with other dimensions drawn from marketing theories to explain customer perception of using digital banking. In this study, the perceived positivity of using digital banking was understood in multi-dimensions (i.e. perceived value, convenience, service quality, brand trust, employee-customer engagement, perceived usability, innovation), whereas risks were seen as a single construct. The study gathered data using primary and secondary data, namely surveys from 680 UK bank customers and annual reports from six banks. This paper presented an integrated understanding of customers' perception towards digital banking utilization with customer perception and loyalty factors and how they impact bank financial performance. According to the research, consumer low response rate was highlighted as the main limitation whereas the number of the included banks in the study could be another limitation. Researchers suggested extending the study to other countries, also suggesting developing countries in Africa. Although previous studies have supported the continued use of valence framework in e-commerce studies, it has been suggested to be extended by combining dimensions from TAM and TRA

theories if it is used in a mobile environment or advanced technology (Lu et al. 2011; Bilgihan & Bujisic 2015). The sections below demonstrate studies based on TAM theory in Fintech

2.12.2 TECHNOLOGY ACCEPTANCE MODEL -TAM

Davis (1989) proposed TAM, by highlighting the factors influencing users' perception of technology innovation. TAM is a widely used model, adopted and validated by many researchers in banking and Fintech (Davis 1989; Mbama & Ezepue 2018; Abramova & Böhme, 2016). Table 2.3 and Figure 2.1 show the TAM model components. TAM model is used to explain the effect of external factors on personal beliefs and attitudes. It is widely used to understand users' reactions towards the adoption of technology. For Davis to predict users' behaviour in using information technology, they have extended TAM model based on the Theory of Reasoned Action (TRA) leading TAM to modify the theoretical model to fit the context of the information system (Davis et al. 1989). TAM framework factors were drawn from previous studies on computer users' utilization. It applied a psychologically-based hypothesis to connect the factors. The model proposes perceived usefulness and perceived ease of use as an external variable affecting users' attitudes toward using new technology. TAM perspective has been widely incorporated in information technology and engineering studies, proposing that a user's behavioral intentions to accept technology depends on a person's belief of the ability to use the technology.

Table 2.3 The components of TAM model

Construct	Explanation
Perceived Usefulness	The belief that using a particular system would enhance job performance.
Perceived Ease of Use	The belief that using a particular system would be free from effort.

Attitude Towards Usage	User's attitude towards using a system
Behavioural Intention	User's intention towards using a system
Actual System Use	The actual use of a system
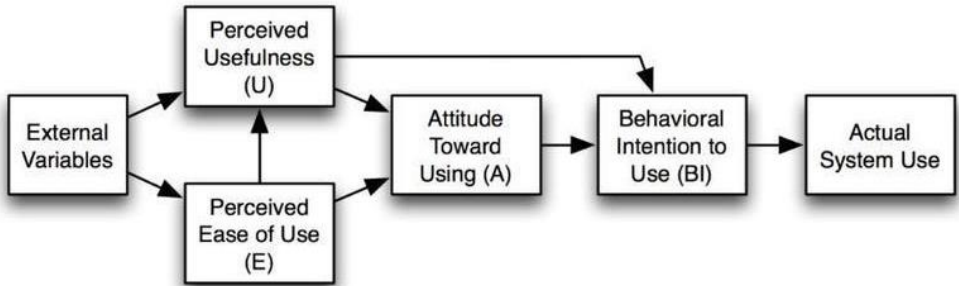
Figure 2.1: Technology Acceptance Model (David 1989)

In previous studies, scholars used consumers' perceptions and points of view to discuss factors that affected their behavioural intention to use or have the potential to use new technology. Since Fintech is a high-tech innovative product and service, scholars used the TAM model to explore drivers and inhibitors of using Fintech. Abramova and Böhme (2016) used the TAM model to investigate the consumer adoption of cryptocurrency "Bitcoin". Bitcoin is a digital currency that operates without a central bank grounded on peer-to-peer through a bitcoin network without the need for intermediaries. It is an example of Fintech's digital innovation in money transmission. They also integrated the valence model "benefit-risk framework" to study the perceived benefit and risks as key determinates of using Bitcoin. The methodology is a quantitative study that collected data from 2305 respondents (Male 67% and Female 33%). The study was conducted in six European countries. Concepts of TAM and valence include; three dimensions of perceived benefit (i.e. seamless transaction, security and control, and decentralization), and four dimensions of perceived risk (i.e. financial loss, legal risk, operational risk, and adoption risk). Their results found that users have substantial concerns concerning using cryptocurrency due to value

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fluctuation, and the potential risk of financial losses as well as security breaches. Plus, their research highlights are important on consumer protection and clear policies against certain security threats. This study is considered to be the first attempt in the emerging information-sharing literature to study decentralized currencies. It is suggested to continue exploring the multidimensional factors influencing users' perception to use fintech products and services.

In this context, Stewart and Jürjens (2018) explored the key factors that influence consumer expectations in adopting fintech innovation in Germany. They developed a model based on TAM as well as benefits and risks factors called "intention to adopt FinTech in Germany". They included customer trust, data security, value-added, user's design interface and fintech promotion. 209 was the sample size for the study; the data was collected through a survey. Their results found that only 10% of the respondents recognized Fintech and used Fintech. Perceived usefulness was the main deterrent with respect to fraud protection and privacy. It has an immediate impact on users' intention to use Fintech. The results show that customers do not consider ease of use as an added value to use Fintech, whereas data security has a strong influence on Fintech trust. Authors suggested that future researchers of Fintech should consider educated consumers the most as they might be aware of Fintech products and services.

Benlian et al. (2011) investigated the IT executive perspective on the major opportunities and risks associated with the adoption of software as a service (SaaS). In the study, they used five measures to explain benefits (i.e. cost advantage, strategic flexibility, focus on core, competencies, access to specialized resources and quality improvement), and five measures of risks (i.e. performance risk, economic risk, strategic risk, security risk and managerial risk). They find that strategic risk, security risk and manager risk are significant factors obstructing the path of SaaS. Also, within information system literature, researchers were keen to understand users' usage of social

commerce. Farivar and Yuan (2014) developed a theoretical framework to investigate users' usage of social networks using perceived benefits, perceived risks and trust. This study suggested two types of benefits (i.e. Social benefit, and commerce benefit), and two types of risks (i.e. social risk, and commerce risk). User concerns for commerce risk were found to be a factor to be considered by IT service providers challenging the path of commerce usage.

In this regard, Dootson, Beatson and Drennan (2016) investigated the perceived value of bank customers to use social media to interact with financial institutions. The study was conducted among Australian bank customers. Concepts of TAM include perceived usefulness, perceived monetary value and perceived social value. Their results found that perceived usefulness, economic value and social value significantly influence consumer perceived value of adopting social media to interact with financial institutes. Also, they found that customers were willing to use social media if the banks create clear usage instructions and address technology security perceptions. The main limitation of the research as addressed by the authors is that they ignored hedonic value which is linked with social media usage. Plus, another limitation is that they did not address the user's characteristics, experience and comfort usage of technology.

A recent study by Belanche, Casaló and Flavián (2019) looks at the impact of artificial intelligence on Fintech. The paper examines customers' behaviour towards the adoption of financial Robo-advisors. They collected 765 potential user responses from North American, British and Portuguese. They incorporated TAM factors perceived usefulness and perceived ease of use, and subjective norms (interpersonal influence and external influence) as influencers of consumer intention to use Robo-advisors. They found that perceived usefulness, perceived ease of use, interpersonal subjective and mass media have a significantly positive effect on attitudes toward service. Also, they highlighted that banks need to consider customer level of familiarity and

understanding of using robots. They suggested that future researchers focus on the actual use of the service as it might give different results. It is also suggested to consider the consumer experience of using Fintech as it will add value to the research context and to conduct the study in Asia and other continents to obtain a global understanding of Fintech adoption.

Also, engineering studies considered studying reasons for the customer to use Fintech services. Kim et al. (2015) explored the acceptance of payment-type Fintech service among Korean using the TAM model. They developed the Elaboration Likelihood Model to check users' utilization of services. They found that usefulness, ease of use and credibility significantly impact users' intent to use Fintech. Self-efficacy was found to be a moderating variable of the relationship between variables and users' intention to use Fintech. Information privacy was found to be a critical factor for users to consider using Fintech services. Chuang, Liu and Kao (2016) used the TAM model to explore users' intention to Fintech services among Taiwanese within the engineering industry. Data was collected from 440 customers. They have added brand and service trust into the analysis to understand the influence on their behavioural intention. They found that brand, service trust, perceived usefulness, perceived ease, attitudes have significantly positive on consumer behavioural intention to use the technologies.

The development of Fintech after China government approves giving microloans to college students. It was considered by (Leong et al. 2017). They studied the development of Fintech as a startup among Chinese students, and qualitatively through case studies. The study found that the development of Fintech impacted college students' financial situation positively, and the young generation was found to be a factor of Fintech growth with positive intention to use.

In addition to the above, Davis et al. (1989) argued that the TAM model explains consumer acceptance of technology. However, TAM theory has been used repeatedly. It has been widely

criticized for limited explanatory power, and practical value was lacking (Chuttur 2009). However, the validity of TAM measures has been criticized by other researchers. Straub, Keil and Brenner (1997) and McCoy, Galletta and King (2007) claimed that TAM is not universally applicable to explain the usage of technology in different cultures since the model was developed in the USA. Venkatesh and Davis (2000) were also considered this limitation. They extended TAM to study users' information system adoption by incorporating social impact and cognitive instrumental procedures as important elements for information system usage.

Similarly, Luarn and Lin (2005) argued that the TAM ignores the risks or constraints that hide users from the utilization of information systems. Also, they suggested the extension of the TAM model with a benefits-risk framework to consider perceived credibility, perceived self-viability and perceived financial cost. In the study, they highlighted data security risk and data transmission as factors impacting users. They also found that perceived credibility (trust) indirectly affects consumer tendency to adopt mobile banking. Their study suggested that inadequate awareness of data security among potential Fintech users equates to slower utilization of Fintech.

In this context, other researchers have studied Fintech using the TRA model. The section below demonstrates theoretical perspectives of TRA and underlying Fintech studies.

2.12.3 THEORY OF REASONED ACTION (TRA)

The TRA has been well-researched in intention theory that is proven to be an accurate predictor of individual intentions (Ajzen & Fishbein 1980). TRA explains the relationship between individual intentions and behaviours. Later TRA theory was extended to the theory of planned behaviour (TPB) (Ajzen 1991). The TPB postulates that individuals have an intention toward a specific behaviour by certain factors: attitudes, subjective norms and perceived behaviour control. TPB theory explains the relationship between human actions and attitudes and behaviours, suggesting

that an individual behavioral intention is a combination of attitude and influence of subjective norm factors. Figure 2.2 shows the TRA components.

The TRA model on individual attitudes is referred to individual general performance and subjective norms factors determined by the perceived social pressure from others. The TRA proposes that the reaction toward an actual behaviour is the result of the positive and negative perceptions of behaviour (Ajzen 1996). TRA theory suggests that actual behaviour is a consequential factor based on salient beliefs and intention to use (Ajzen 1991). This approach suggests that an individual's attitude is based on previous knowledge or information related to an object. TRA model is an evident valid model to explain people's actual behaviour (Lee 2009; Ryu 2018).

Lee (2009) highlighted the relationship between attitudes and behaviour outcomes (benefit or cost) that happen by performing the behaviour. Hence, since Fintech can be viewed positively and negatively, positive behaviour might lead to desirable results, and negative behaviour can lead to undesirable results. This theory has been applied in many studies related to beliefs, intentions and behaviours in many fields such as advertising, healthcare, sustainability, mobile and online banking.
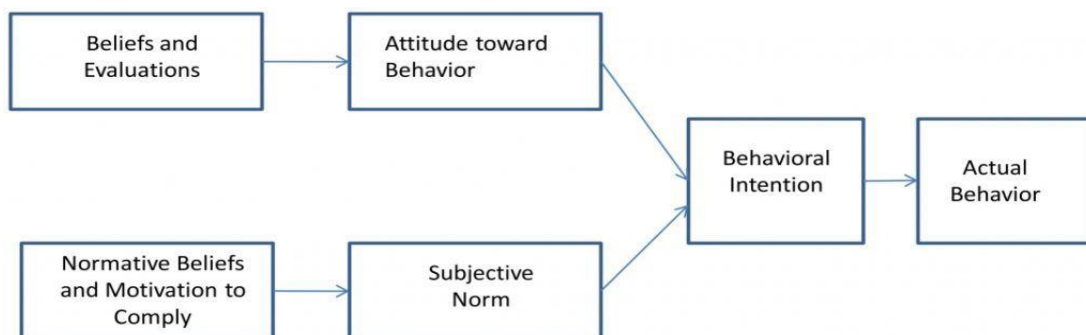
Figure 2.2: Theory of Reasoned Action (Fishbein, M, & Ajzen 1980)

Although TRA theory is well regarded in explaining consumer's actual behaviour, Stewart & Jürjens (2018) claimed that the TRA model lacks to predict the users' intention as it foresees behaviour based on volitional control of the individual. However, Ryu (2018) integrated the TRA model with the benefit-risk framework to study factors influencing users' continuous adoption of Fintech. In the study, they claimed that TRA best describes users' intention to use fintech based on comparing available services and choosing the best supported previously by (Kim et al. 2008). In their study, they proposed a benefit-risk framework based on multi-benefit constructs; (economic benefit, seamless transaction and convenience) and risk constructs; (financial, legal, security and operational). The study revealed that legal risk had the most negative effect and convenience had the strongest positive effect among fintech users. Ryu (2018) was limited for not incorporating users' actual usage behaviour of fintech. Therefore, it was recommended by the authors to better understand the fourth technology revolution impact on consumers, future studies to consider consumer perception on Fintech usage. To relate user characteristics to explain individual-level issues of Fintech usage in different nations (Ryu 2018).

2.13 OUTCOMES OF FINTECH CUSTOMER EXPERIENCE

The key aim of this research is to respond to calls from (Belanche, Casaló & Flavián 2019; Stewart & Jürjens 2018; Keisidou et al. 2013) to further explore the overall perceived benefit and risk variables that can influence consumer perception of using Fintech as well as the subsequent outcomes of a positive Fintech customer experience. In accordance with the various theories and the developed literature on customer behaviour, three main outcomes appear, such as customer satisfaction, customer loyalty and customer behavioural intentions. Therefore, these variables are appropriate to be investigated and discussed in this research for customer experience outcomes.

Mbama & Ezepue (2018) found that positive customer experience in using digital banking led to firms' profitability mediated by customer satisfaction and loyalty. Certainly, Cronin and Tylor (1992) highlighted that service companies require to assure making customers feel safe while transacting; therefore, the assurance of risks mitigation must be considered. This is supported by many Fintech scholars (Ryu 2018; Belanche, Casaló & Flavián 2019; Stewart & Jürjens 2018); who took a step forward to analyze the key positive and negative factors that influence consumer adoption of Fintech. It was asserted that many customers were discouraged to use Fintech due to perception of security risks and low familiarity with using technology. Grace and O'Cass (2004) and Yee, Yeung & Edwin Cheng (2010) described customer experience in the banking sector as the combination of service quality attributes and customer satisfaction, meaning that to achieve the ultimate aim of customer satisfaction, organizations should consider the attributes of services and performance.

Belanche, Casaló & Flavián (2019) noted that Fintech goes beyond online banking, and the financial industry must be ready for the adoption to happen effectively. Park et al. (2016) suggested that Artificial Intelligence is the instrument that advances the finance industry providing value addition to consumers and increasing firm revenues. Accordingly, an important point to be noted is that organizational behaviour and strategic management studies have confirmed that firm profitability has a major link to consumer behaviour towards service adoption (Sweeney & Swait 2008; Vesel and Zabkar 2009). This is mainly justified from existing literature and marketing activity that the financial sector relies on the long relationship with customers and the loss of a customer is a major bank concern. This is among the identified gaps in Fintech research. This gap is to outline the association of Fintech and bank performance to enable banks to achieve

competitiveness and economics of scale (Stewart & Jürjens 2018). Hence, this research aims to create new knowledge value for banks.

The link between customer, operation process improvements and financial performance in the service industry has been developed over time by various scholars and researchers. Figure 2.1 shows a model developed by Yee, Yeung & Edwin Cheng (2010). It describes that profitable growth in contact services as an outcome depends on service quality, customer satisfaction and customer loyalty. Similarly, Mbama & Ezepue (2018) suggested a model outlining the main attributes for enhancing customer experience in using digital banking leading to financial performance. They found that perceived service value, usability and risk were significant factors on customer loyalty satisfaction and thereafter on firm profitability. Hence, assessment of customer perception of actual usage of service contributes to the successful implementation of banking services. The assessment will reveal customers' needs and improve banks' performance.
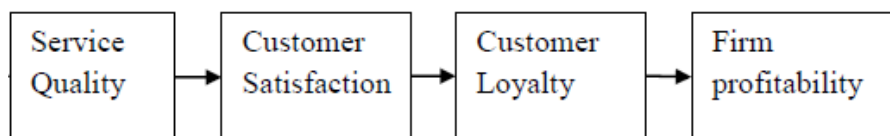
Figure 2.3: Organizational competitiveness model
(Source: Yee et al. 2010)

Fintech's prior studies found that improving customer perception of Fintech and Fintech continuous intention depends on benefits and risks of using the service; however, they are not aimed towards improving customer experience. Customer satisfaction, loyalty and re-visit intention were not fully investigated. Moreover, there is a need to understand the link between the outcome of using Fintech and firm financial performance. According to Singh et al. (2019), Fintech needs to be studied in a broader picture of the banking industry with a direct and indirect linkage

between customer confirmation of utilized service and firm financial performance. Hence, this study is deemed to integrate a framework considering customer perceptions for the successful design of Fintech in the banking services based on user experience and improve bank's performance. In summary, in accordance with prior studies and models, consumer behavioural outcomes in the present study will be outlined below.

2.13.1 USER CONFIRMATION OF EXPECTATION

Hossain and Quaddus (2012) explained confirmation as the differences between perceived performance and expectations. Confirmation is crucial in any service delivery industry and as if implemented properly it converts dissatisfied customers to satisfied customers (Jiang & Klein 2009). Also, Jiang & Klein (2009) added that it is crucial to examine consumer expectations at the confirmation stage as it reflects the user experience of perceived product and service. Accordingly, if the customer evaluated products better than expected, a positive confirmation will occur; alternatively, if the product performance falls below customer experience, a negative confirmation will occur. As far as the researcher's knowledge is concerned, researchers in Fintech are yet to conform to this approach in financial services. Prior marketing research has revealed that confirmation is the main variable that influences customer satisfaction, and it is opted to measure customer overall experience on the provided service (Jiang & Klein 2009; Pizam et al. 2009; Oliver 1980).

Oliver (1977; 1980) proposed the Expectancy-Disconfirmation Paradigm (EDP) as the most encouraging theory structure for the appraisal of consumer satisfaction. The model suggests that consumers buy products and services with pre-purchase assumptions regarding the expected performance. The desire level at that point turns into a norm against which the item is judged. That is, when the item or service has been utilized, results are analyzed against desires. In the event that

the result coordinates the desire, affirmation happens. Disconfirmation happens when there is a contrast between desires and results. A client is either fulfilled or disappointed because of the positive or negative contrast between desires and discernments. In this manner, when the administration execution is better than what the client had at first expected, there is a positive disconfirmation between desires and execution which brings about fulfilment, while when the administration execution is true to form, there is an affirmation between desires and observations, which brings about fulfilment. Conversely, when administration execution is not in the same class as what the client expected, there is a negative disconfirmation among desires and recognitions, which causes disappointment. Mattila and O'Neill (2003) stated that the EDP model is amongst the well-known satisfaction models, which argues that satisfaction is related to the magnitude and course of the disconfirmation experience that is created as a result of service experience performance against expectation.

According to Hossain and Dwivedi (2015), positive disconfirmation occurs when product performance exceeds customer expectation, and this can impact satisfaction, loyalty and vice versa. In their study, they have suggested that customer satisfaction with specific products and services should be studied through confirmation and not expectation. Similarly, Innovation diffusion theory (Rogers 1962) proposes that users confirm their adoption of products or systems at the confirmation stage (Rogers 2003). Therefore, the confirmation stage is crucial to be studied in IS research and for any service-offering industry as if properly considered. It has the power to result in post-purchase customer satisfaction. Thus, the financial sector consideration of assessing consumer expectations of Fintech during confirmation is essential. However, to the best of the researcher's knowledge, Fintech studies are quite fragmented and slow to confirm this approach. Hence, this study will attempt to fill this gap.

2.13.2 CUSTOMER SATISFACTION

customer satisfaction is defined as the summary of psychological state based on the disconfirmation paradigm theory (Oliver, 1980). According to this theory, customers are satisfied when the perceived performance of services meets or even exceeds their expectations. They are dissatisfied if it does not. The expectancy and disconfirmation concept is concerned with consumers' formation of expectations prior to consuming an experience through cognitive practice. In service industry concept, customer satisfaction relates to the consequences of the customer's evaluation of the value derived from the service usage process (Hossain & Qaddous 2012; Keisidou et al. 2013). Gillison and Reynolds (2018) stressed that this process perspective explains user satisfaction of the overall service experience instead of the particular product or service satisfaction.

Accordingly, in in-service markets, a user's expectation can be either positive when service performed as expected or negative when service performed poorly than expected (Trasorras, Weinstein & Abratt 2009). Prior researchers in marketing and quality studies claimed that the main intention of studying customer satisfaction by most of researchers is to determine the underlying factors for customer retention and accordingly enhance company practices (Hossain & Qaddous 2012; Keisidou et al. 2013).

Hence, its essential for the financial to determine customer satisfaction and building long-term relationship on the provided products and services, as the loss of a customer is considered a concern in the service-offering industry. Meyer and Schwager (2007) asserted that customer satisfaction is achieved when the alignment between customer expectation and experience has been met. A satisfied customer will have a positive word of mouth that influences other customers,

tending to raise firm profitability. Customer satisfaction is described as satisfying consumers' requirements for products and services. Customers are happy when the perceived outcomes match or exceed their expectations for service. When the apparent outcomes do not meet their service expectations, customers are disappointed (Amin 2016). Previous studies have concentrated on studying customer satisfaction, loyalty, and firm performance in the banking sector when it comes to technology involvement in banking models. Keisidou et al. (2013) conducted a study on Greek banks to measure the relationship between customer satisfaction, loyalty, and firm performance. Companies recognize customer satisfaction as a corporate strategy since satisfaction establishes consumer intention to return in the future (Keisidou et al. 2013).

Ladhari, Ladhari and Morales (2011) studied customer satisfaction in the banking sector and defined customer satisfaction as a customer total evolution of provided services. Prior research suggested a positive relationship of customer satisfaction on consumer repurchase intention, customer loyalty and customer referrals (Meyer & Schwager 2007; Hossain & Qaddous 2012). Furthermore, it was revealed by Keisidou et al. (2013) and Anderson, Fornell and Lehmann (1994), that happy satisfied customers would directly impact a company's general financial performance thanks to retaining the consumer base and achieving repurchase intention. Customer satisfaction is a strong indicator of a company's success and future sustainability thanks to creating long-lasting profitable customer relationships. Customer satisfaction is a crucial indicator, and it results in better financial performance (Fathollahzadeh, Hashemi & Kahreh 2011), and lower marketing costs (Chi & Gursoy 2009).

Therefore, considering the evolution of Fintech in the financial industry, consumer satisfaction of Fintech can be deemed to influence consumer repurchase behaviour and firm financial

performance. However, as far as the researcher knows, studies in Fintech are slow to confirm this approach. The present research considers filling this gap.

2.13.3 CUSTOMER LOYALTY

Oliver (1999) defined loyalty as "a deeply held commitment to re-buy or repurchase a preferred product/service consistently in the future, thereby causing repetitive same-brand purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour". Numerous researchers have focused on antecedents relevant to customer loyalty. Attitudinal and behavioural items have been proposed as antecedents of loyalty (Jacoby & Kyner 1973; Fathollahzadeh, Hashemi & Kahreh 2011; Dick & Basu 1994; Akhter et al. 2011). As described by Zeithmal et al. (1996), customer loyalty is a result of positive experience, feelings, satisfaction and perceived value with current service providers. Parasuraman et al. (1994) measured customer perception by considering loyalty as the main dimension, theorizing that loyal customers were less likely to change the company, thus generating more profit. Furthermore, numerous research studies focused on consumer intention of repurchase and willingness to recommend in positive word-of-mouth customer loyalty (Cronin Jr. & Taylor 1992; Boulding et al. 1993). In addition, researchers have attended to examine the moderation effect of switching costs of changing brands between customer satisfaction and customer loyalty (Yan and Peterson 2004; Lee et al. 2001).

Furthermore, customer satisfaction, service quality, word of mouth and perceived value can propose customer loyalty (Wieringa & Verhoef, 2007; Patterson & Smith, 2003). Also, Ladhari, Ladhari and Morales (2011) view that customer satisfaction can increase customer loyalty, and thus drive company success and achieve financial goals. Prior studies suggested that customer

loyalty is the determinant of firm competitive advantage and has a strong influence on better financial performance (Keisidou et al. 2013; Dam & Dam 2021).

The loyalty literature has generated two customer loyalty measures; the attitudinal and the behavioural dimensions (Jacoby & Kyner 1973; Fathollahzadeh, Hashemi & Kahreh 2011; Dick & Basu 1994; Akhter et al. 2011). The attitudinal loyalty measurement focuses on the customer's emotional attachment to the place that underlies purchasing motives and is deemed as an indicator for future actions and repurchase tendency (Fathollahzadeh, Hashemi & Kahreh 2011; Klaus & Maklan 2013). On the other hand, the behavioural measurement is reflected by customers' purchasing behaviours of being loyal and having a repurchase to the place through purchasing history (Fathollahzadeh, Hashemi & Kahreh 2011; Akhter et al. 2011). Furthermore, Zeithmal et al. (1996) developed a model to assess the factors affecting customer behavioural intentions. Customer loyalty showed a strong relation to describe customer repurchase behaviour and intention. Consequently, Zeithaml, Parasuraman and Malhotra (2000) suggested that a company that has loyal customers would achieve great growth through purchases increases and acceptance of elevated prices. Drawing from Akhter et al. (2011), repurchase intention is measured by post behavioural action that is strongly influenced by customer loyalty.

Prior studies have confirmed the connection between customer satisfaction and customer loyalty. Customer satisfaction was an antecedent of customer loyalty. Customer satisfaction was an important variable that pointed to customer loyalty (Dam & Dam 2021). Prior studies declared that customer satisfaction positively influenced customer loyalty (Islam et al. 2021; Khan et al. 2022). Thus, this study considers loyalty as behavioural intention and an outcome for this study.

2.13.4 REPURCHASE INTENTION

Sullivan and Kim (2018) described repurchase intention as consumers' subjective probability of revisit the service. Repurchase intention is hard to determine if customer satisfaction was not achieved (Durvasula et al. 2004). Hellier et al. 2003 related repurchase intention as antecedent of customer satisfaction explaining that as a person's satisfaction with a company caused by evaluation of the currently provided service that impacts a person's likelihood to purchase in the future. Trivedi & Yadav (2020) suggested that repurchase intention is influenced by satisfaction due to the effect of perceived value experience in previous relations that are dependent on performance effectiveness and cost-related factors. Nowadays, consumer repurchase intention in retail transactions, which is online transacting, is deemed to be a corporate business success and area of concern (Mbama & Ezepue 2018; Ilyas et al. 2020), with the availability of many offerings of products and services online, consumers easily gain access to information. In literature, the relationship between customer satisfaction and repurchase intention is considered one of the most researched and explored topics (Ibzan, Balarabe & Jakada 2016).

Repurchase intention is a person's positive attitude towards a company that will lead to repeat buying behaviour (Zhou et al 2009). Prior researchers have claimed that studies in repurchasing intentions have been fragmented and few studies have considered using a certified framework to analyze consumer repurchasing intentions and their attendants and effects on the company (Zineldin 2006; Zhou et al. 2009; Kim et al 2012). Studies have related customer satisfaction as a crucial factor that will make customers repeat purchases (Kotler 2010; Kim et al. 2012). If customer satisfaction is properly conducted, then companies can easily guarantee repeat purchases (Edvardsson et al. 2000). Repurchase intentions have an important effect on companies'

competitive advantage (Mbama & Ezepue 2018; Ilyas et al. 2020). It is viewed by marketing and management researchers as a positive relationship between a company's financial performance and level of customer satisfaction (Hellier et al. 2003; Lam et al. 2004). As observed earlier, there is an influence of satisfaction on repurchase intention; hence, there is a supportive relationship between company performance and repurchase intention. For this reason, it is argued that customer satisfaction should be the ultimate goal for all companies, especially service-oriented firms (Anderson, Fornell & Lehmann 1994).

Furthermore, Cronin, Brady & Hult (2000) argued that any service depends on management insights, strategic planning and effective service delivery, thus, taking into account that repurchase intention is likely to be dependent on the overall service delivery. It was concluded by Chandon, Morwitz & Reinartz (2005) that the repurchase intention and overall satisfaction with the service are the main indicators for customer loyalty. Researchers have shown a significant effect of repurchase intentions on overall satisfaction with service provided; however, it was argued that the used constructs have been complex and multiple, making it difficult for respondents to understand (Kumar 2002; Quick and Burton 2000; Seiders et al. 2005; Shih and Fang 2005). However, researchers have shown a significant effect of customer satisfaction leads to high customer retention, generating repurchase intention (Brown & Gulycz 2001) and willingness to recommend the company Parasuraman et al. 1991; Zeithaml et al. 1996).
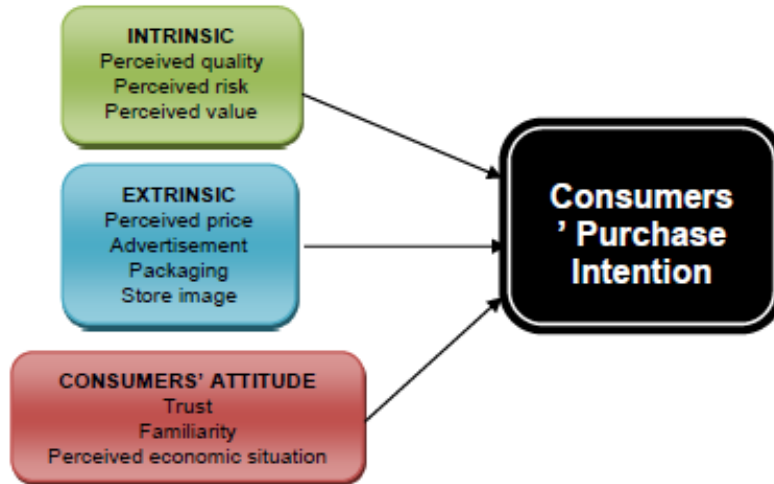
Figure 2.4: Consumer purchase intention factor model
Source: Jaafar, Lalp and Naba (2010)

The model above proposed by Jaafar, Lalp and Naba (2010) outlines the consumer purchase intention factor, drawn from prior studies (Chaniotakis et al. 2010; Beneke 2008; Liljander et al. 2009; Chen 2008; Munusamy and Wong 2008). It was noted that consumer purchase intention depends on intrinsic, extrinsic and consumer attitude factors that predict the consumer purchasing process. According to Jaafar, Lalp and Naba (2010) that consumer purchase intention is influenced by multi-dimension factors, whereas perceived value, price and quality were the most important factors. They highlighted the crucial factor of customer familiarity and its influence on positive perceptions of product purchases. Also, the findings of Leila et al. (2013) reveal that the higher consumer familiarity is with the products, the less conflict in using the product and more likely to establish product loyalty in purchasing that product in the future. In e-commerce applications, customer repurchase intention would appear after making a purchase accompanied by feeling of satisfaction in using the application (Dam & Dam 2021).

It was deemed that consumer previous experience and level of familiarity are crucial factors to determine purchasing intentions due to specific service-related aspects involved in making comparisons with goods and services. According to Keller (2001), the consumer mindset is highly

impacted by previous experience as it immediately starts to evaluate and compare expectations with actual performance and decide upon them. In summary, consumers' buying decision is complex (Jaafar, Lalp & Naba 2010). Considering intrinsic and extrinsic factors by the service provider assists to reinforce the service process and focus on capitalizing on benefits and mitigating risks.

2.13.5 LEVEL OF FAMILIARITY

The diffusion speed of new technology not only depends on the extent to which the technology is developed and innovated but also on users' and firms' willingness to adopt the service. Customer familiarity has been described in behavioural psychology by Gefen, Karahanna and Straub (2003, p.63), as a person's understanding of an entity, often based on previous learning, interactions, and experience of "the what, who, how, and whilst of what is going on.". A high level of familiarity lowers social uncertainty and increases the knowledge of what is taking region in the present leading to a high level of satisfaction (Kumar 1996; Gefen 2000). In the e-commerce context, as the Fintech is agreed to be a manifestation of an IT artefact (McCoy, Everard & Loiacono 2009; Lee & Kwon 2011), familiarity refers to how properly a client knows the methods in using website, consisting of what scenario and how to move approximately input data like credit card details to fulfill the transaction .

Kim and Benbasat (2010) classified customers in adopting new technology as early adopters and late adopters based on their familiarity with the new technology. Consistent with the previous empirical studies by Stewart & Jürjens (2018) and Ryu (2018), consumer familiarity with Fintech was the main limitation for customers to adopt the service. According to Stewart & Jürjens (2018), only 10% of the respondents recognize Fintech services in Germany while the remaining

customers were discouraged to use Fintech. Zavolokina, Dolata and Schwabe (2016) and Mbama and Ezepue (2018) claimed that customers in the financial sector are conservative in adopting new technology especially when it comes to money remittances or equity financing due to the significance of service operation, risks and trust. Rogers (1995) described the adoption of a new service as an individual's willingness to take the risk. However, user familiarity varies in terms of the encouragement to use the service due to the level of knowledge and experience in adoption and awareness of risks. Stewart & Jürjens (2018) indicated that user's minimum familiarity and experience with technology are more willing to adopt and use new information technology as well as to express positive attitudes toward Fintech innovation.

In Fintech domain, familiarity can be demonstrated by complexity and ambiguity of the platform banks interface and producers. Users assume the more familiar with the platform the more likely to satisfy with the platform (Wirani et al. 2022). The user interface familiarity of the platform also effects the consumer's willingness to extend using Fintech Lending. Users that are familiar with the bank Fintech platform and understand the procedures and risk concerns are more inclined to use Fintech Lending. In this study, user overall knowledge toward procedures on the FinTech platform demonstrate familiarity. Familiarity is an important factor in predicting users' intention to purchase the service, since high levels of user familiarity with new technology lead to more chances of adopting technology, and thereafter, satisfaction, loyalty, repurchase intention and firm profitability (Sun & Zhanag 2006; Stewart & Jürjens 2018; Zhou et al. 2018; Al-Malkawi, Mansumitrchai & Al-Habib 2016).

2.14 FINANCIAL PERFORMANCE

Financial performance is a concept that has been used over time by various scholars and researchers from organizational performance, strategic management and financial accounting

studies (Greve 2003; Hauser & Katz 1998). In the 1980s, non-financial performance (for example, efficiency and customer loyalty rate) has been used to explain business performance. Various organization formworks developed like Balanced Score Card, Net Promoter Score and Service Profit Chain that measures internal and external organization performance by considering employee and customer satisfaction to reflect how they contribute to company financial performance (Reichheld & Sasser 1990; Evanschitzky & Wangenheim, F. V Wünderlich 2012; Chi & Gursoy 2009). According to Greve (2003), companies pursue various objectives to accomplish their performance objectives. Subsequently, linking customer loyalty, experience and repurchase intention have increased among researchers (Keisidou et al. 2013; Mbama & Ezepue 2018). These measures may reflect the casual effect, implying that outcomes obtained in business execution are related to specific determinants, consequently showing the need to measure financial performance drivers of financial technology performance in banking services. These measures may assess to make organizations take a more balanced view while considering advanced strategies on products and services.

Several studies suggested that there is a positive relationship between customer satisfaction and firm financial performance (Reichheld & Sasser 1990; Evanschitzky & Wangenheim, F. V Wünderlich 2012; Chi & Gursoy 2009). There is no doubt that customer satisfaction is critical in the service industry because customers will recognize and value the service offered, and over time will exhibit loyalty behaviour and continued purchasing (Chi & Gursoy 2009). Hence, satisfaction, loyalty and repurchase intention variables have the potential to increase income, increase market share and lower costs, therefore higher financial returns (Liang et al. 2009). For example, loyal customers are will continue purchasing and willing to refer customers, therefore it requires from the company ongoing relationship at the start of the relationship and less ongoing relationship

effort to retain (Liang et al. 2009). The literature on service management, marketing, brand equity and customer satisfaction have evidence that loyal customer is more likely to pay premium prices, and attract potential customers and incur higher sales and lower costs (Reichheld & Sasser 1990).

Smith and Wright (2004) described the determinants of origination financial performance by linking several hypothesized variables to various performance measures. They used brand image, firm viability and service qualities to measure financial performance, which was found to have a measurable effect on customer loyalty and thus influences sales growth and ROA. Similarly, repurchase intention behaviour describes how customers perceive the company and the tendency to make another purchase attempt, and it generates value (Fathollahzadeh, Hashemi & Kahreh 2011). On the whole, the casual variables of financial performance detailing organizational characteristics are found in management, finance and marketing studies.

Researchers deemed that financial performance measures may vary using qualitative or quantitative elements or both depending on the ultimate objective of the research (Capon, Farley & Hoenig 1990; Anderson, Fornell & Lehmann 1994; Smith and Wright, 2004; Keisidou et al. 2013). In the financial performance literature, Capon, Farley & Hoenig (1990), asserted that researchers tend to use both qualitative and quantitative measures to establish a comparison between variables. However, the results were difficult to interpret. Hence, it was suggested to have a specific examination either qualitative or quantitative (Capon, Farley & Hoenig 1990). Capon, Farley and Hoenig (1990) analyzed 320 empirical studies from management studies conceptualizing holistic financial performance measurements by identifying strategy, environmental and organizational, as shown in the figure.
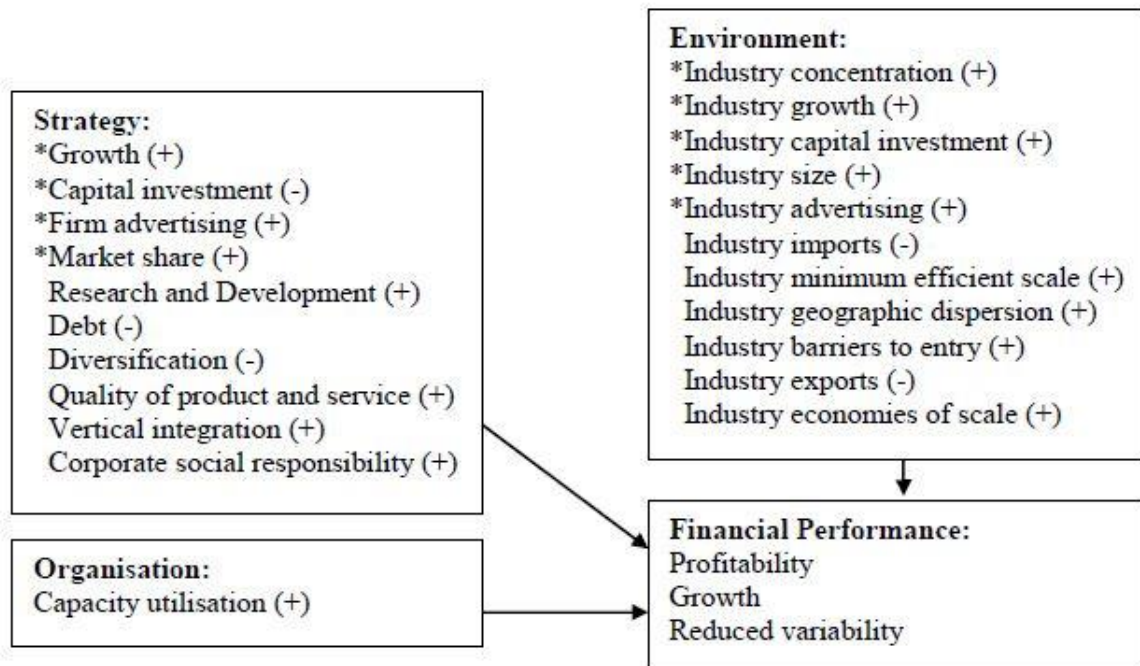
Figure 2.5: Financial Performance Measures
(Source: Capon, Farley & Hoenig 1990)

Capon, Farley and Hoenig (1990) used the concept of BSC and the concept of strategic and organizational management theory to explain financial performance considering different perspectives primarily qualitative measures. They found that growth, products and service qualities, capital investment, firm advertising, market share, R&D, had a significant influence on firm financial performance. This research also ensured a balance measure of financial performance in terms of overall profitability. Although the research has not considered customer behaviour factors. Organizational behaviour literature suggests that the organization's engagement, training and knowledge affect employees, which, in turn, affect firm performance. However, Keisidou et al. (2013) and Mbama and Ezepue (2018) used views of Capon et al (1990) on relating multiple organizational factors to measure the impact of customer experience, loyalty and satisfaction of online banking and how it impacts firm financial performance using (e.g. efficiency, market share, cost-to-income ratio, and sales growth).

Moreover, Venkatraman and Ramanujam (1986) developed a framework that emphasizes financial and operational performance as significant major groups to compose overall organizational performance. This model was used subsequently by Hult et al. (2008) differentiating both financial performance domains 'financial and operational'. As shown in the Figure below, the financial performance domain was examined using quantitative figures such as sales growth, profitability, ROI, ROA, ROE, earnings per share to reflect upon the firm's economic objectives. Various studies considered this approach like Chi & Gursoy (2009); Keisidou et al. (2013) and Mbama and Ezepue (2018) to include quantitative financial performance measurements in their studies. The financial and operational performance domain incorporates product and service quality, marketing strategies, business proficiency, market share, innovation. This domain is an important factor to structure overall organizational performance considering business attributes as well as receivers' views. The operational performance measure includes the cost to income ratio, customer loyalty ratio, etc. that mainly can influence financial performance.

Multiple theories within marketing studies were used to link customer perception and organizational performance (e.g., Net Profit Score (NPS) Reichheld (2003), Service Quality (SERVQUAL), Parasuraman et al. (1988); and Service Profit Chain (SPC) Heskett et al. (2008). SPC model was developed by Heskett et al. (1994) the model recognizes the relationship between profitability, customer loyalty and employee (satisfaction, loyalty and productivity). The model advocates that customer loyalty impacts organizational growth and profitability. Kanyurhi (2016) used the SPC model to study the relationship between multiple factors, internal marketing, employee job satisfaction and organizational performance in microfinance institutions. The study revealed a positive relationship between internal marketing and organizational performance.

The concept of the SPC model was considered in recent research conducted on digital banking Mbama and Ezepue (2018) to study the impact of customer experience in using digital banking on bank financial performance and marketing. The study was significant to digital bank marketing and financial performance. The study revealed that there is a significant relationship between customer experience, satisfaction and loyalty, which is related to financial performance. The major limitation of the study was the low response rate of 30% and lack of usage of developed technology theories, and the study focused on the marketing aspect to improve customer experience in using digital banking. Also, the paper focused on digital banking products only and ignored other developed Fintech products and services offered by financial institutions. Thus, this paper fills this gap in knowledge by studying fintech products and services.

Various discussions have occurred on financial performance measurements as its complex domain due to different use of financial ratios to evaluate banks. Keisidou et al. (2013) investigated customer experience in the Greek banking sector using financial ratios (i.e. Return on Equity (ROE), Return on Assets (ROA) or/and Return on Investment (ROI), Net Profit Margin (NPM). The use of these ratios was criticized by Mbama & Ezepue (2018) claiming that some of the used ratio measures were not suitable for all banks. Mbama & Ezepue (2018) studied customer experience in using digital banking and financial performance. They used net interest margin (NIM), ROE and cost to income ratio to measure bank financial performance.

In service management research, the financial ratio is used to reflect the relationship between customer experience and firm financial performance. For instance. Mohammed and Ward (2006) explored the relationship between customer perception of service quality and bank financial performance in adopting the new automated banking services in Australia. They used ROA and ROE to measure bank financial performance. Likewise, a recent study by Eklof et al. (2017)

developed a model to examine the impact of customer perception of i.e. (product attributes, benefits, customer satisfaction, trust, commitment and customer behavioural loyalty) in firm financial performance. This study used profit margin, return on assets, return on operating net assets, and return on equity to measure financial performance. Hence, most practices are supported using ROA, NPM and ROE as a common measure for financial performance. It is an accounting-based measure. The studies above linked customer experience with customer satisfaction and loyalty, which supports the purpose of this research.

Although prior studies have investigated the impact of customer satisfaction and loyalty on a company's financial performance, the constructs have been measured either quantitatively or qualitatively. However, Mbama and Ezepue (2018) asserted that there is no consistency among researchers on the measurement of financial performance and Keisidou et al. (2013) claimed that firm financial performance is not commonly measured and considered in the literature. Also, Keisidou et al. (2013) opted for service-offering providers. This is essential to examine the impact of provided products and services on a firm's financial performance.

Scholars have recognized the importance of customer satisfaction and loyalty in determining the impact of financial performance (Heskett et al. 2008; Liang, Wang & Farquhar 2009; Reichheld et al. 2000). However, Smith and Wright (2004) argued that it should relate to firm financial performance to enable stakeholders to assess overall products and services and how potentially impact financial performance. Furthermore, Kohli & Grover (2008) noted that research requires focusing on the direct economic benefits for firms while measuring overall organizational success in terms of ROI, market share, profitability, etc. In a bank context, Change and Tseng (2010) emphasized the importance to measure the influence of service quality, perceived risk, customer values in banks' financial performance. They argued that "the provision of value-added products

and quality services is key to the survival of several organisations since the value is considered to guide customers' retention decisions as well generate better company growth". Hence, it suggests that the overall economic value added of firm organizations needs to be examined by financial performance.

Hult et al. (2008) asserted that to measure financial performance either primary or secondary data, or both can be used. In their studies, they indicated that both sources were reliable for financial performance measurements; however, they stated the difficulty to collect primary data on financial performance due to confidentiality and issues on obtaining information. Whereas getting secondary data is more deemed to be an available source of data from company financial reports. Hult et al. (2008) suggested using profitability, namely ROA and ROI, as they were the predominant constructs to measure organizational financial performance. Researchers claimed that financial performance measurement is a complex matter as it involves multidimensionality of financial performance concept, financial, operational and organisational effectiveness. However, it adds value to strategic and organization literature is considered by researchers (Keisidou et al. 2013; and Chi and Gursoy 2009).

Studies in Fintech have suggested exploring the impact of Fintech on bank financial performance (Sangwan et al. 2019). The path ahead of Fintech was explored to streamline the impact of Fintech on stakeholders namely, consumers, fintech supporters, market regulators and service providers. On the one hand, fintech offers benefits to consumers; however, it has introduced challenges to consumers and producers since it threatens the established business models in terms of traditional financial services. Most recent studies recommended that researchers continue the study of Fintech and its impact on stakeholders (Sangwan et al. 2019; Milian, Spinola & Carvalho 2019; Ryu 2018). As far as the researcher knows, Fintech researchers are slow to measure the effects of customer's

experience of Fintech, customer satisfaction, loyalty and repurchase intention factors on the financial performance in the banking sector. Thus, the present research aims to fill this gap considering bank financial performance as the main outcome for this study.

2.15 RESEARCH GAP

The current research fills the gap in the literature relating to investigating the relationship between the customer perceptions and firm financial performance since it develops a model for enhancing the understanding of positive and negative factors on Fintech based on customer's actual usage, consumer behavioural intentions and firm financial performance. As discussed in the previous literature, it proposes a model for enhancing the understanding about positive and negative factors of using Fintech and service quality and their influence on firm financial performance, via confirmation, familiarity (moderator), customer satisfaction, customer loyalty and behavioural intentions. Likewise, this research presents a conceptual framework developed based on the Expectation Confirmation Theory. "Consumer behavioural theory" has not been considered much in Fintech literature to analyze consumer perception in the banking sector. Given the fact that Fintech is a newly emerging phenomenon in the traditional financial system that reduces bank-customer relationships, many recent studies have proposed the need to continue the study of customer adoption and perception of Fintech using multiple dimensions, and theories. With the above criteria, to the best of the researcher's knowledge, this research is one of the few Fintech studies with empirical evidence combining proposed variables in one model relating to the UAE's banking sector.

Furthermore, this study focuses on the overall evaluation of services by customers, and service quality measures are considered based on the service delivery literature. According to Bansal and Taylor (2015), service quality and customer satisfaction are important determinants of customers'

switching intentions. According to the findings of their study, there is no doubt that customer satisfaction and service quality are distinct factors. The authors also confirmed that service quality is a predictor of customer satisfaction. As a result, the current study assesses repurchase intention and loyalty in order to better understand customer behavior when using Fintech. Furthermore, the study empirically investigates the impact of positive and negative factors on customer confirmation of expectations, which are thought to reflect overall customer evaluation of the service.

According to Sangwan et al. (2019), Fintech consumers and producers are the two worthy areas for further studies that can be identified. Firstly, this is to continue the measurement of consumer willingness to adopt Fintech in financial services with a prime focus on the younger generation. Secondly, this is to measure the financial performance of the banking sector not gained enough attention in Fintech studies. Although the banking industry has undergone a massive transformation due to the disruptive technology of Fintech challenging the survival of traditional banking. Hence, it is worth examining the influence of customers' perception of Fintech on financial performance in UAE banks.

Furthermore, Belanche, Casaló & Flavián (2019) concluded their study on consumer intention to adopt artificial intelligence in Fintech, proposing to study the actual customer usage of Fintech. They proposed in the future to have other variables related to customers like customer experience or customer satisfaction as moderators and related to company like reputation or quality dimensions that may affect customer adoption process. Finally, they proposed that future studies may explore other cultures in adopting Fintech like Asians, Latin Americans, etc. Also, Ryu (2018) stated that for future research in Fintech, perceived benefits and risks need to be regularly analyzed because of the changes in customer perception. Also, it was highlighted that Fintech studies are

limited to general Fintech products whereas other products like internet insurance, personal financing, equity financing, retain investments and Bitcoin were not investigated. Moreover, Ryu (2018) added that there is little research in non-western continues in relation to Fintech consumer adoption to view the issue of Fintech usage among different nations.

Stewart and Jürjens (2018) confirmed that customer trust and system design are essential determinates of customer intention to adopt Fintech. They recommended looking for other customer-related variables to explore the relationship in detail for user demographic factors or regional factors as moderating factors to explore the relationship in detail. Also, they highlighted the need to study the association of Fintech with bank performance to allow for banks to achieve competitiveness and economics of scale.

Keisidou et al. (2013) stressed, "financial performance, is not commonly measured in literature", and concluded that customer satisfaction and customer loyalty are positively related to the profitability of banks. The outcome of their study indicated both customer satisfaction and loyalty are distinct factors in the bank financial performance. They proposed that these three measures need to be tested in different economies (other than Greece) and countries within the banking sector. Liang, Wang and Farquhar (2009) stated that it is crucial to empirically assess the relationship between customer perception and financial performance. Moreover, they proposed that the direct and indirect relationships between variables must be explored.

Table 2.4 Summary of Research Gap

Source	Research Gap
(Singh et. al 2019)	According to Sing et al. (2019), Fintech consumers and producers are the two worthy areas for further studies that can be identified. The

	outcome of the study is to continue measuring consumer willingness to adopt Fintech in financial services. Also, they mentioned that the banking sector has not gained enough attention in Fintech studies.
(Flavian et al. 2019)	Belanche, Casaló & Flavián (2019) proposed to study the actual customer usage of Fintech rather than the intention to use perception. They proposed in future to have other variables related to customers like customer experience or customer satisfaction as moderators and related to company like reputation or quality dimensions that may affect customer adoption process. Also, they proposed that future studies may explore other cultures in adopting Fintech like Asian, Latin American.. etc
(Ryu 2018)	Ryu (2018) added that little research in non-western countries continues in relation to Fintech consumer adoption in order to view the issue of Fintech usage among different nations.
(Stewart & Jürjens 2018)	Stewart and Jürjens (2018) confirmed that customer trust, loyalty and system design are essential determinates of customer intention to adopt Fintech. They recommended looking for other customer-related variables like user demographic factors or regional factors as moderating factors to explore the relationship in detail. Also, they highlighted the need to study the association of Fintech and bank performance to enable banks to achieve competitiveness and economics of scale.
(Keisidou et al. 2013)	Keisidou et.al (2013) stressed that "financial performance, is not commonly measured in literature", and concluded that customer satisfaction and customer loyalty are positively related to the profitability of banks. The outcome of their study indicated both customer satisfaction and loyalty are distinct factors in the bank's financial performance. They proposed that these three measures need to be tested in different economies (other than Greece) and countries within the banking sector.

2.16 CONCLUSION

The above literature review articulated the topics on which the proposed study framework is established. It reviewed benefit and risk studies and dimensions in great depth that stress the importance of consumer confirmation and customer satisfaction of using Fintech and how these aspects are related to customer repurchase intention and loyalty. As far as the literature review is concerned, further research into consumer behaviour and financial performance in the banking industry is required. Moreover, further research into actual customer experience and evaluation of Fintech products and services offered in the financial industry is required, to establish the extent to which customers' reaction explains their repurchase behaviour. Accordingly, the present study explores the importance of confirmation and customer satisfaction that depicts the behavioural sequence of behavioural loyalty and repurchase intention and collectively their impact on service providers' financial performance. As explored in this chapter, consumer behaviour literature was explored precisely in Fintech, research gap was addressed. Therefore, the present study intends to explore customer perception relating to benefits and risks pertaining to Fintech utilization and its impact on financial performance through confirmation, customer satisfaction, loyalty and repurchase intention. Subsequently, the chapter explored the benefit and risk factors in Fintech by exploring the most recent studies in this domain. Studies that pertain to confirmation, customer satisfaction, customer loyalty and repurchase intention are worth exploring for companies to ultimately gain profits presented in financial performance.

To the best of our knowledge, the present study is required in Fintech consumer behaviour literature to fill the gap in the literature as illustrated in the previous chapter Table 2.2. Fintech at the infancy stage is, however, growing rapidly in the industry. This has increased the interest of

scholars to study the phenomena. Hence, this research is crucial, because, to date, there has been no sufficient exploration of the relationship between perceived benefit, risk factors, customer satisfaction, and customer loyalty in the United Arab Emirates, especially in the banking sector. Accordingly, the next chapter will focus on developing the conceptual framework based on the reviewed literature, and it will outline the hypotheses of the research.

CHAPTER THREE: THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

3.1 INTRODUCTION

The objective of this chapter is to explain the theoretical framework of the study and develop related hypotheses with regard to Fintech customer experience via confirmation of expectations and its relation to customer satisfaction, customer loyalty and financial performance, via evaluating customer expectation after the service experience and level of familiarity. As discussed earlier, the previous relevant Fintech literature was reviewed along with presenting the most used theories. Additionally, the most important factors influencing consumer adoption of Fintech products and services were discussed. Moreover, the review of alternative theoretical perspectives revealed that several theoretical perspectives have been used to explain the adoption and intention to use Fintech. This chapter provides the theoretical underpinnings of this study, drawing from well-researched satisfaction theory using Expectation Confirmation Theory (ECT) developed by Oliver (1980) and the net valence perspective framework (Peter & Tarpey 1975). In particular, this has been used to better understand the net valence (Peter & Tarpey 1975) based on ECT model. Hence, the valence theory by Lewin (1943) and Biley (1953) and ECT perspective will integrate to evaluate consumer expectations of Fintech after they experienced the service providing the theoretical framework for this study. Three sections will appear in this chapter: in the first section, the researcher will explain the study's theoretical framework, and the second section will present the developed hypotheses of the study followed by the proposed conceptual framework. The chapter ends with a summary and conclusion in the fourth section.

3.2 THEORETICAL BACKGROUND

Through an in-depth review of the consumer behaviour literature, it was demonstrated that several theories and operational models that measure customer satisfaction have been applied. These include the following: Theory of Reasoned Action, Net Valance Theory, Adaptation-level Theory and Expectancy Disconfirmation paradigm. Table 3.1 captures the features of these consumer behaviour theories.

Table 3.1 Consumer Behavior Theories Investigated by Previous Researchers

Name of Theory	Features	Source
Theory of Reasoned Action	This theory has been well-researched in consumer intention studies that have been proven as an accurate predictor of individual intentions (Ajzen & Fishbein 1980). This theory explains the relationship between individual intentions and actual behaviours. Later, this theory was extended to the theory of planned behaviour (TPB) (Ajzen 1991). The TPB postulates that individual intention toward a specific behaviour by certain factors; attitudes, subjective norms and perceived behaviour control. TPB theory explains the relationship of human actions; attitudes and behaviours, suggesting	Ajzen & Fishbein (1980) Ajzen (1991)

| | that an individual behavioural intention is a combination of attitude and influence of subjective norm factors.

Although this theory is well regarded in explaining consumers' actual behaviour, it was noted that it lacks the predictive power of the user's intention as it foresees behaviour based on volitional control of individuals (Stewart & Jürjens 2018). | Stewart & Jürjens (2018) |
|---|---|---|
| *Net Valance Theory* | Net Valence theory was originated from the economics and psychology discipline developed by (Peter & Tarpey 1975), based on Lewin (1943) and Biley (1955) were pioneered to outline that customers perceive products in both desirable positive and negative ways. The theory aims to maximize the net valence which is the variable between the experience of positive and negative utility. The theory uses a cognitive rationale to explain consumer decision-making, and it assumes that consumers will perceive products and services with both negative (e.g. perceived risk) and positive (e.g. perceived benefit) attributes. Based on the theory, customers will make decisions based on maximizing perceived benefits and minimizing perceived negative (Peter & Tarpey 1975; Kim et at. 2000). | Peter & Tarpey (1975) Lewin (1943) Biley (1955)

Kim et al. (2000) |

	Although previous studies have supported the continued use of the valence framework in e-commerce and technology context, it has been suggested to be extended by combining dimensions from other consumer behaviour theories (Lu et al. 2011; Bilgihan & Bujisic 2015).	Lu et al. 2011 Bilgihan & Bujisic (2015)
Adaptation-level Theory	Helsen (1964) formulated Adaption- Level Theory that has been well regarded in consumer psychology research, as it received acceptance by various researchers due to the ability to explain initiative forecasts due to assimilation-contrast theories (Oliver 1977). This theory concerns the impact of consumer uncertainty and expectations on satisfaction and was used by Oliver (1997) when examining customer satisfaction. According to the adaptation-level theory (Helson 1964), environmental and organismic acts force individual behavioural response. The theory explained as follows: 'It posits that one perceives stimuli only in relation to an adopted standard. The standard is a function of perceptions of the stimulus itself, the context, and psychological and physiological characteristics of the organism. Once created, the 'adaptation level' serves to	Helsen (1964)

	sustain subsequent evaluations in that positive and negative deviations will remain in the general vicinity of one's original position. Only a large impact on the adaptation level will change the final tone of the subject's evaluation'.	
	Helsen formed the basis of this theory which has been incorporated into several current theories, for example, Oliver (1977) used the Expectancy-Disconfirmation model to study customer satisfaction. Later, it has received wide acceptance in research.	Oliver (1977)
Expectancy Disconfirmation Paradigm	Drawing on the deficiencies of the above theories of consumer satisfaction, Oliver (1977; 1980) proposed the Expectancy-Disconfirmation Paradigm (EDP) as the most encouraging theory structure for the appraisal of consumer satisfaction. The model suggests that consumers buy products and services with pre-purchase assumptions regarding the expected performance. The desire level at that point turns into a norm against which the item is judged. That is, when the item or service has been utilized, results are analyzed against desires. In the event that the result coordinates the desire, affirmation happens. Disconfirmation happens when there is a contrast between desires and results. A client is either	Oliver (1977) Oliver (1980)

	satisfied or disappointed because of positive or negative contrasts among desires and discernments. In this manner, when the administration execution is better than what the client had at first expected, there is a positive disconfirmation among desires and execution which brings about fulfilment, while when administration execution is true to form, there is an affirmation among desires and observations which brings about fulfilment. Conversely, when administration execution is not in the same class as what the client expected, there is a negative disconfirmation among desires and recognitions which causes disappointment.	
	Mattila and O'Neill (2003) stated that the EDP model is amongst the well-known satisfaction models, which argues that satisfaction is related to the magnitude and course of the disconfirmation experience that is created as a result of service experience performance against expectation.	Mattila & O'Neill (2003)

In light of consumer behaviour literature which was much more aligned with the review of customer satisfaction, and the consumer technology adoption literature was more oriented towards perceived benefits and risks of consumers adopting tech-services. Operationalization of antecedents of customer satisfaction with using technology in services is what matters in this study

especially after the service is experienced. Accordingly, this study applies the concept of Expectancy Disconfirmation Theory developed by (Oliver 1980). It was observed that this theory is one of the most used in customer satisfaction studies and determines consumer repurchase intention behaviour (Anderson, Fornell & Lehmann 1994). Oliver (1980) developed the theory and proposed that customer satisfaction and repeat behaviour are the difference between services provided and expected. Satisfaction (positive disconfirmation) is more oriented towards the message of complete satisfaction and the product or service exceeded expectations. On the contrary, dissatisfaction (negative disconfirmation) arises when a product or service is worse than the customer expected. Additionally, to study the antecedents of customer satisfaction with Fintech Expectancy Confirmation theory is considered to be extended by the net valance perspective to measure perceived benefits and risks of using technology in the service industry.

Accordingly, this study drew upon primary research streams, Expectation Confirmation Theory and net valance perspective (benefits and risks) to develop this study research model and associated hypothesis. The following section will provide a full description of the Expectation Confirmation Theory and valance theory (perceived risks, benefits and the proposed theoretical framework).

3.3 THEORETICAL FRAMEWORK DEVELOPMENT

In the literature, many theories and models have been applied to measure customer perception against Fintech as explored in the previous section. Although theories TRA and TAM were successful to measure users' intention to use new technology (Conner 2001) and to explain customer behaviour towards Fintech (Ryu 2018). These theories were among the models that were claimed that have not provided consistent explanations or predictions of consumer experience and confirmation of continued usage of the service (Chen et al. 2007; Bansal & Taylor (2015). The focus of this study is to determine the factors that affect customer satisfaction, loyalty based on

their perception of service experience, and to relate the findings to the firm financial performance. Hence, the integration of Expectancy Confirmation Theory constructs and valance theory perspective for this research model should provide strong empirical support to Fintech adoption and account for the positive and negative factors based on consumer experience of using Fintech products and services.

Fintech customer service experience, satisfaction and reuse intention pertain to consumer behavioural theories that have been widely discussed. They include the Theory of Planned Behavior, Technology Adoption Model, Dissonance Theory, Contrast Theory, Negativity Theory, Equity Theory, Hypothesis Testing Theory and the Expectancy Confirmation Theory. However, Expectancy Confirmation Theory was developed as the most theoretical framework for evaluation of customer satisfaction primarily after service experienced (Pakdil & Aydın 2007; Mattila & O'Neill 2003; Halilovic & Cicic 2013; Venkatesh et al. 2011; Oghuma et al. 2016; Hossain and Dwivedi 2015; Zhou et al. 2018). Hence, the application of this theory into the study is in line with the purpose and motive of the research. The ECT model as developed by Oliver (1977; 1980) suggests that consumers use products and services and repeat the purchases based on the expected performance. Mattila and O'Neill (2003) supported this model and describe it as the most effective theory in measuring customer satisfaction based on users' experience that compares service expectations against performance. Also, it was described that this model explains user satisfaction based on positive and negative confirmation that arises when products and services meet or exceed expectations. The following section will describe Expectancy Confirmation Theory in detail.

3.3.1 EXPECTATION CONFIRMATION THEORY (ECT)

Expectation Confirmation Theory (ECT) has been widely considered in the domain of marketing and service management studies to measure consumer satisfaction and repurchase intention (Oliver

1980; Oliver 1981; Anderson and Sullivan 1993; Oliver 1993; Patterson and Spreng 1997; Dabholkar et al. 2000). The ECT model has proven the ability to demonstrate consumer repurchase intentions for many products and services. The ECT model is applied in the context of mobile telecommunications (Oghuma et al. 2016); Banking products and services (Hossain & Dwivedi 2015); Health care (Chou et al. 2012); e-learning (Lee 2010); Knowledge management (He & Wei 2009) and others.

According to ECT, that customer undergoes through stages till reaching the repurchase intention (Oliver 1980). First, customers formulate initial perceptions about a specific product and service before.
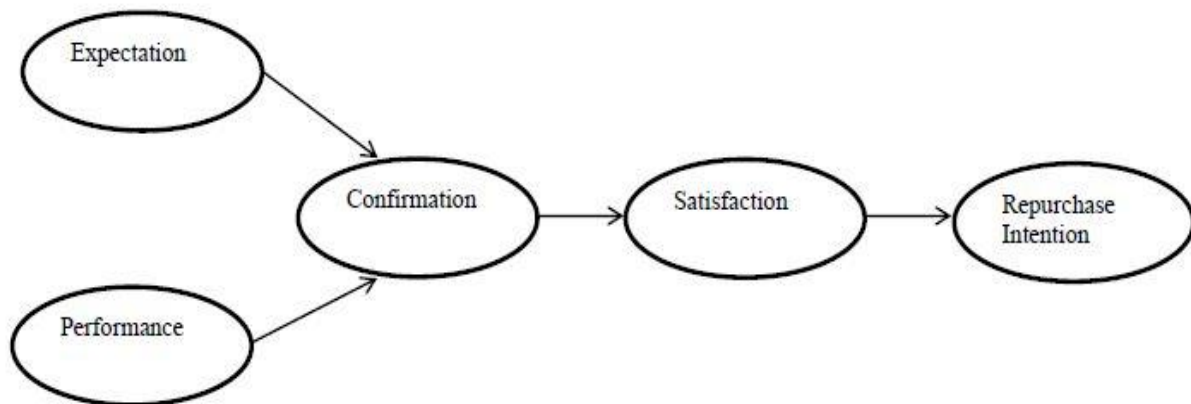
Figure 3.1 Expectation Confirmation Theory
(Source: Oliver 1980)

Purchase is based on prior knowledge or experience (Zeithaml, Parasuraman & Berry 1990). Also, we should consider the influence from multiple channels like mass-media channels, advertising, media reports, interpersonal communication and interaction with different members. Realistic and unrealistic expectations can be generated (Premkumar & Bhattacherjee 2008). Therefore, wrong and misleading information about products and services may interrupt user knowledge. Oliver (1980) elaborated on the power of misleading information that affects consumer expectation of the

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product and service performance, which would affect the entire satisfaction intention process. Then, if the customers perceive the product or service's performance as useful, they accept and purchase it. Third, assessing the perceived product and service based on consumer expectation and determining performance is called confirmation. Positive confirmation will occur if the perceived performance is greater than expected. Alternatively, negative confirmation will occur if the consumer evaluation about the products or services below the explanations. Fourth, based on the level of confirmation, the consumer will determine the level of satisfaction. As claimed by Oliver and DeSarbo (1988) and Erevelles and Leavitt (1992) positive confirmation strengthens consumer attitude to reuse the products leading to satisfaction, while negative confirmation will lead to the weakening of chances of reusing the product. However prior studies also found that dissatisfied customers may still purchase and use the product or service due to convenience, cost, and lack of alternatives, etc. (Brady and Cronin 2001; White and Yu 2005). Moreover, it was noted by Reichheld (1993) that even satisfied consumers may decide not to purchase the product.

The ECT model has four primary constructs: expectation, performance, confirmation, and satisfaction. Eventually, these four constructs impact the user's continuation of using products and services (Chiu et al. 2005; Venkatesh et al. 2011). Figure 3.1 shows the ECT model. This model has gained acceptance among researchers seeking to explain users' satisfaction and continuous intention to use (Bhattacherjee 2001; Chiu et al. 2005; Halilovic & Cicic 2013; Venkatesh et al. 2011). Empirical studies using the ECT model proved that customer satisfaction constantly appears as a key element impacting customer repurchase intentional behaviour (He and Wei 2009; Lee 2010, Chou et al. 2012). Several studies have applied the ECT model seeking to understand customer behavioural intentions and level of satisfaction by extending the expectation-confirmation model in the service industry (Halilovic & Cicic 2013; Bhattacherjee 2001; Chiu et

al. 2005; Venkatesh et al. 2011; Oghuma et al. 2016). The choice of the independent variables is made based on the researcher's motive and research objectives. Table 3.1 shows previous studies using ECT in different contexts.

Halilovic and Cicic (2013) investigated the antecedents of information system user behaviour by extending the expectation-confirmation model by adding additional constructs to support researchers' arguments. The model was extended by concepts from the theory of planned behaviour by adding perceived control of behaviour through user's perception and perceived usefulness from the technology acceptance model. Mainly, they tested users' acceptance of usage budgeting, accounting and financial software. They concluded the study admitting the ability of the theory to explain customer repurchase of products and continuous usage of services.

Furthermore, Oghuma et al. (2016) have explored factors impacting users' continuous intention to use mobile instant messaging. They extended the ECT model by constructs drawn from the technology acceptance model namely (perceived usability, perceived security, and perceived service quality) and they claimed that the ECT model provides a better understating of a researched issue when it is extended using other theories. Also, Hossain and Dwivedi (2015) investigated factors influencing the adoption of mobile banking by Jordanian bank customers. ECT model was extended by service quality factors as determinants for customer overall satisfaction and behavioural intention to reuse the service. They suggested that exploration of additional potential variables will help to explore customers' perceptions of banking products and services. Previously, Setó-Pamies (2012) has also recommended for researchers to consider potential constructs like customer loyalty, switching costs and user's characteristics to describe a phenomenon related to customer behavioural intention.

Table 3.2: Previous studies using ECT in a different context

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Author	Year	Context
Wang et al.	2019	Mobile telecommunication
Poromatikul et al.	2019	Mobile banking
Zhou et al.	2018	e-finance
Oghuma et al.	2016	Mobile telecommunication
Hossain and Dwivedi	2015	Mobile Banking
Halilovic and Cicic	2013	Information system
Chou et al.	2012	Health care
Lee	2010	e-learning
Atchariyachanvanich et al.	2006	e-commerce

Accordingly, ECT is the main theory considered in this proposed study. This study chose the ECT theory because it aims to develop a framework that studies customer satisfaction, loyalty and intention to use Fintech provided in the banking sector. This can best be achieved by extending ECT through constructs drawn from prior studies on Fintech measuring positive and negative factors affecting user's usage of Fintech – based on the valence framework. Also, Expectancy Confirmation Theory was devoted as the most theoretical framework for the evaluation of customer satisfaction primarily after service experienced (Pakdil & Aydın 2007; Mattila & O'Neill 2003; Halilovic & Cicic 2013; Venkatesh et al. 2011; Oghuma et al. 2016; Hossain and Dwivedi 2015; Zhou et al. 2018).

Hence, the application of this theory into this study is in line with the purpose and motive of the research to study customer experience of using Fintech after using the product and service in the context of the banking sector.

3.3.2 THE VALENCE FRAMEWORK

The valence theory was originated from economics and psychology studies (Lin et al. 2014), utilizes a "psychological basis" customer dynamic model (Peter & Tarpey 1975). This theory shows that individuals perceive products or services with both negative and positive attributes to a product or a service. As indicated by the valence theory, customers attempt to minimize the negative aspects of the product or service and maximize the positive aspects and tend to balance out the utilities to arrive at a net valence (Peter & Tarpey 1975; Kim et al. 2000). This means that customers are looking to gain the most value out of their product or service usage (Lin et al. 2014). Valence theory has been utilized to look at purchaser behaviour in various settings. For instance, Lu et al. (2011) consolidated two theories of valence framework and trust transfer theory and found that clients' view of cost and risk reduce their goal to utilize mobile payment services while clients' perceptions of relative advantages, compatibility and image increase the intention to utilize such service.

Moreover, Lee (2009) developed a perceived risk-benefit customer online banking adoption model, by expanding the valance framework using the technology acceptance model and theory of planned behaviour to describe the influential factors affecting consumer decision to use online banking. The results of the study highlighted that consumer online banking usage decision is highly affected by the overall perceived benefit and risk aspects. Also, Ozturk et al. (2017) studied customers' intention to use mobile payment technology based on valence theory perspective both positive and negative factors and moderating effect of customer individual differences namely compatibility and affinity. It was found that user compatibility had a major influence on negative and positive constructs. In the context of Fintech, Ryu (2018) extended the net valance framework based on the theory of transaction action to study the factors that make consumers willing or

hesitant to use Fintech and found that the legal risk was the most important factor that worries consumers, and convenience was the positive effect to use Fintech.

Even though past studies have indicated the validity model of valence framework to be utilized in an e-commerce setting; however, it was suggested that it should be extended if used in mobile or internet environments (Lu et al. 2011; Ozturk et al. 2016). Accordingly, this study is developed based on the net valance framework theoretically grounded on the expectancy confirmation theory (Oliver 1980), to examine specific benefit and risk factors to explain customers' behavioural evaluation based on their experience of Fintech usage.

3.4 PERCEIVED BENEFIT THEORETICAL BACKGROUND

Fintech has recently been considered as one of the most effective banking transaction methods due to technological advancement in the finance industry (Carlson 2015). Because it has numerous favourable advantages which traditional banking channels cannot offer. Thus, banking management aims to capitalize on the advantages of Fintech to increase Fintech consumer adoption rate and in turn reduce administrative costs (Liu et al. 2012). In online banking studies, Lee (2008) noted that there are two principals of perceived benefits on online banking usage, which can be classified as direct and indirect advantages. Direct advantages refer to the tangible benefits that customers would appreciate by utilizing online banking. For example, clients can benefit from a wide range of financial benefits, faster transaction processing and transaction transparency. Whereas, indirect advantages are those benefits that are less substantial and hard to measure. For example, online banking allows clients to perform banking transactions anywhere in the world and get 24-hour service.

Perceived benefits have been broadly utilized as an immediate determinant of consumer continuous intentions (Kim et al. 2008; Lee, Park & Kim 2013; Melewar et al. 2013). Ryu (2018) described perceived benefit as "a client's impression of the potential that Fintech use will result in a positive outcome". Most studies have indicated that the higher perceived benefit, the more there is a positive influence on users' intention to use IT services in a wide range of applications (Abramova & Böhme 2016; Benlian and Hess 2011; Farivar & Yuan 2014; Lee, Park & Kim 2013; Lee, 2009; Lee, Chae & Cho 2013). A Fintech study revealed that perceived benefit can significantly influence the usage of Fintech (Ryu 2018). Also, Abramova and Böhme (2016) asserted the impact of perceived benefit on consumer use of Bitcoin.

User's motivations of purchase have been classified into intrinsic, extrinsic and consumer attitude factors that predict consumer purchasing process (Davis et al. 1992; Jaffar, Lalp & Naba 2012). According to Jaffar, Lalp and Naba (2012) consumer purchase intention is influenced by multi-dimensional factors; however, perceived value, price and quality were the most important factors for consumer online usage of a product or service. Extrinsic motivation refers to the outcome that will result from doing a task to achieve a particular goal (like, reward), while intrinsic motivation refers to the interest and enjoyment in the task itself (Davis et al. 1989). Both of the factors were used in banking, e-commerce and information sharing literature. However, this study focused on the extrinsic motivating factors to better explain perceived benefit factors on Fintech because users use Fintech for the utilitarian benefit and not for their hedonic benefits (Ryu 2018). Accordingly, this study uses four extrinsic motivation factors based on utilitarian values as the benefit components of using Fintech: Economic benefit, convenience, perceived service quality and seamless transaction processing, the details of these benefits are described below:

1. Economic benefit: is the most widely recognized and reliable extrinsic motivation for Fintech (Kuo-Chuen & Teo 2015). With regard to Fintech, the financial advantage incorporates cost reduction and financial gains from Fintech transactions. Some Fintech applications (e.g. mobile settlement or P2P loaning) may propose lower transaction expenses to clients than traditional financial services by directly initiating and concluding transactions without intermediation (Mackenzie 2015). Other Fintech applications (for example P2P loaning, crowdfunding), that for the most part offer services either online or using mobile, may likewise give more significant returns to banks, and lower loan costs to borrowers, than traditional financial systems (Gerber et al. 2012; Lee and Lee 2012).

2. Convenience benefit: it is considered as one of the main extrinsic motivational factors of Fintech to use, which is driven by flexibility and accessibility (Kuo-Chuen & Teo 2015; Sharma & Gutiérrez 2010). Convenience refers to flexibility in performing the transaction anytime and anywhere (Okazaki & Mendez 2013), and the most significant factor in the accomplishment of online and mobile transactions (Kim et al. 2010). Clients may obtain convenience and productivity of transaction through mobile phones or online without going to the financial institute. Sharma & Gutiérrez (2010) recommended that convenience may be valuable as a legitimate indicator of the utilization of mobile financial services. Given mobile phones as a fundamental channel in Fintech, when contrasted with the traditional financial service provider (Ryun 2018).

3. Perceived service quality: referred to meeting and exceeding customer expectations, being an accessible and reliable source of transaction in financial platforms. In this study, service quality is viewed as the consumer's overall perceived evaluation and judgment on the quality of the services that are delivered through the internet provided in financial services in terms of

meeting and exceeding user expectations, accessibility and reliability of an application (Parasuraman, Zeithaml & Berry 1988; Keisidou et al. 2013; Amin 2016; Ladhari, Ladhari & Morales 2011). The importance of service quality in service provider-client relationships has been emphasized in many prior studies (Parasuraman, Zeithmal & Berry 1988; Lee 2009; Zhang et al. 2018). Also, many recent studies on the functionality aspects of online systems and activities in the service industry were testing the employment of SERVQUAL in banks (Parasuraman, Zeithmal & Berry 1988), hotels and insurance companies (Mbama & Ezepue 2018; Keisidou et al. 2013; Amin el al. 2016), which affects customer experience (Garg et al. 2014).

4. Seamless transaction processing: Ryun (2018) described the seamless transaction as a transaction-related benefit of using Fintech (e.g. purchasing, remittances, lending, and investment). The transaction process measure is a fundamental trait of Fintech transactions that eliminates traditional banking systems through seamless financing processes. It allows clients to manage transactions cost-effectively, resulting in fast and basic financial transactions (Chishti 2016; Zavolokina et al. 2016). Moreover, IT companies can offer new and innovative processes on providing financial products and services to consumers through seamless transactions (e.g. apple/Samsung pay). Thus, these Fintech products and services are reshaping the ecosystems of the financial service industry.

The factors stated above are the perceived benefits are considered in this study model of consumer evaluation of Fintech after the experience of a service in the banking industry.

3.5 PERCEIVED RISK THEORETICAL BACKGROUND

Since the beginning of the 1960s, the concept of risk was initially recognized by Bauer (1960) when first brought the attention of the marketing community on risk. He stated that "I have neither

confidence nor anxiety that my proposal will cause any major stir. At most, it is to be hoped that it will attract the attention of a few researchers and practitioners and at least survive through infancy" (Bauer 1960). Since then, there has been considerable embeddedness of perceived risk theory in consumer's behaviour literature (Peter & Ryan 1976; Mbama & Ezepue 2018) and has been applied in a wide range of literature including technology (Freweret et al. 1994), intercultural comparison (Alden et al. 1994), banking (Ho & Victor 1994), shopping (Jasper & Ouellette 1994). Mitchell (1999) stated that perceived risk theory has enabled marketers to see the world through their customer's eyes. Accordingly, it is suggesting that perceived risk is a powerful concept in explaining consumer behaviour since customers would prefer to avoid and maximize benefits mistakes in purchases.

Extensive research has examined the effect of risk factors on the dynamics of consumer attention (Lin 2008). Subside and Ryan (1976) recognized perceived risk as a sort of subjective risk that exists or will exist. Featherman and Pavlou (2003) defined perceived risk as the potential loss to get the desired result. Cunningham (1967) asserted that perceived risk contained measurements of the potential loss if the results of the act were not satisfactory and the individual's subjective feelings that the consequences will not be satisfactory. The argument of perceived risk dimensions has continued to engage researchers; however, most scholars asserted that consumers' perceived risk is a sort of a multi-dimensional approach. Six segments or components of perceived risk have been identified: financial, performance, social, physical, security, and time-loss (Jacoby & Kaplan 1972; Kaplan et al. 1974; Roselius 1971).

While, Featherman and Pavlou (2003) noted that these dimensions might vary depending on the industry, product classification and degree of risk. Ming-Chi Lee (2009) found that physical risk is not an important matter in online banking as it does not pose any threat to human life. Therefore,

physical risk construct was not considered in various banking, e-commerce and online shopping literature (Jiang et a. 2018; Ryu 2018; Ozturk et al. 2016). However, legal and operational risks were major factors in consumer e-commerce and Fintech purchasing intentions (Kim et al. 2008; Abramova & Böhme 2016; Ryu 2018). A distillation of seven types of perceived risk identified from the literature is captured in table 2.1.

Table 3.3 Dimensions of perceived risk embedded in previous definitions of the concept

Dimension	Definition	Reference
Performance risk	The possibility of the item breaking down and not proceeding as it was planned and advertised therefore neglecting to perform as expected.	(Kuisma et al. 2007)
Social risk	Possible loss due to disapproval of one's social group because of receiving an item or service, looking absurd or untrendy.	(Lee 2009)
Financial risk	The probability of financial loss in the financial transaction as well the subsequent cost of the product or services.	(Melewar et al. 2013; Abramova & Böhme 2016)
Security risk	The potential loss of control over a transaction or personal information, such as when data about the user is utilized without his insight or permission. An extraordinary case is when a loss happened due to fraud which means a criminal uses a user's personality to perform transactions.	(Kim et al. 2013)
Time risk	The probability that consumers might lose time when making a bad purchasing decision by sitting around exploring and making the purchase, figuring out how to utilize product or service.	(Lee 2009)
Operational risk	The possible loss due to inadequate internal control either by the processes, employees and or systems.	(Abramova & Böhme 2016); (Ryu 2018)
Legal risk	The financial loss due to unclear legal regulations and lack of universal regulations.	(Abramova & Böhme, 2016); (Ryu 2018)

Perceived risk was defined in IS literature as the user's subjective expectations of risk or uncertainty in contemplating a patricianly banking transaction using technology (Ozturk et al. 2016). In Fintech literature perceived risk as "a user's perception of the uncertainty and the

possible negative consequence regarding the Fintech use" (Ryu 2018). Based on Ryu's (2018) definition, and drawing on Fintech emerging literature, Fintech users are vulnerable to face risks while using Fintech in banking transactions. Due to perceived risks (e.g. security issues, absences of regulation, major processes issues, failed operations), users will make usage decisions based on the bank's good reputation of Fintech, level of system familiarity and powerful marketing and, thereafter, evaluate the perceived Fintech services. Prior literature has considered four types of risks as major risks in the Fintech context, namely financial, legal, security and operational.

As Fintech is an emerging unprecedented service in the Middle East region and particularly in the United Arab Emirates, especially in the banking system, Fintech users are vulnerable to face risks in Fintech products and services. The present research investigates four types of risk – financial, legal, security and operational and the details of these risks related to Fintech are described below:

1. Financial risk: This is defined as a potential financial loss due to malfunction in the financial transaction system, financial fraud and extra transaction fee charges (Abramova & Böhme 2016). Prior research studies have found that financial risk is the most important factor as it describes the monetary loss due to transaction errors which are negatively related to consumer continuance intention to use the service (Forsythe et al. 2006; Melewar et al. 2013). According to Abramova & Böhme (2016), the majority of customers are afraid of losing money while performing transactions or transferring money using digital banking channels.

2. Legal risk: It is described as financial loss due to unclear legal regulations and the lack of universal law on Fintech (Ryu 2018). As well, it refers to the risk of financial loss as a result of ambiguity or misunderstanding on the law and regulation applied in business (Abramova & Böhme 2016). Since Fintech is unprecedented in the banking market, the lack of financial regulations on security issues or transaction financial loss may create consumer distrust and

anxiety and thereafter reluctance to use the services. For example, the Korean government aggressively intervenes in the standards of providing banking services to customers. As it imposes strict financial regulations that impede the use of financial technology. Therefore, studying the extent of legal risk from the customer's perspective is the most consistent predictor of consumer behaviour on online or mobile services.

3. Security risk: This refers to the potential loss due to fraud or a hacker compromising the security of online financial transactions (Lee 2009). In the context of online service, a security risk is framed as the likelihood of a privacy attack which is a critical concern among consumers (Lwin et al. 2007). Fraud and hacker interruption can prompt users' monetary loss and abuse client privacy, which is a significant concern of many online users (Lee 2009). Ryu (2018) asserted that Fintech utilization is associated with a high potential loss of consumer personal data, transaction details that increase the perceived risk of Fintech.

4. Operational risk: It refers to the loss due to inadequate processes and uncertainties a company faces while conducting business activities (Abramova & Böhme 2016). Ryu (2018) noted that operational risk is mainly dependent on technology effectiveness in the context of Fintech, especially after major operational losses have faced financial institutions leading to financial disturbance. Lack of operational skills in the banking systems and inadequate internal processes will lead to consumer distrust and dissatisfaction leading to the prevention of Fintech usage.

As discussed in the previous sections that prior studies attempted to explore positive and negative factors affecting customer willingness to use Fintech (Ryu 2018; Stewart & Jürjens 2018; Abramova & Böhme 2016). Ryu (2018) studied the acceptance of Fintech technology by users, where they found that attitude significantly influences intention to adopt offered services by

Fintech. Accordingly, the positive and negative beliefs of using Fintech will result in perceived benefits and risks respectively that lead to their overall perception and evaluation of Fintech. Also, (Abramova & Böhme 2016) studied bitcoin acceptance among banking customers using valence model variables "benefit-risk framework". They used three dimensions of perceived benefit (i.e. seamless transaction, security and control, and decentralization), and four dimensions of perceived risk (i.e. financial loss, legal risk, operational risk, and adoption risk). Their results revealed that: users have substantial concerns regarding the use of cryptocurrencies due to value fluctuations, and fewer potentials of financial losses and protection from security breaches.

Based on this notion, this study will examine specific benefits and risk factors to explain customers' behavioural evaluation based on their experience of Fintech usage drawn from prior studies. The result would be an overall behavioural consumer appraisal of Fintech (i.e. overall consumer evaluation of perceived benefit and risk), leading to the Fintech continuance willingness to use. Consistent with the net valence perspective and Expectancy confirmation theory, this study introduces a framework of benefit and risk factors related to the Fintech usage evaluation through integrating the positive and negative factors, customer satisfaction, loyalty and behavioural intention.

After the extensive and in-depth review of the literature and empirical studies presented in chapter two on Fintech. A new model that has not been tested before in the context of Fintech is being proposed in this study based on the extended version of the valence framework considering the ECT perspective; that links customer prior experience (positive and negative) and firm financial performance. Based on (Andaleeb et al. 2016), a service provider's success depends on customer overall evaluation of service experience and overall customer satisfaction. The proposed study will present a holistic model to advance Fintech studies by integrating positive and negative factors

that influence customer experience of Fintech usage, customer satisfaction, level of familiarity, loyalty, reuse intention and financial performance.

3.6 HYPOTHESES DEVELOPMENT AND RESEARCH FRAMEWORK

3.6.1 HYPOTHESES DEVELOPMENT

In this section, the hypotheses regarding the relationships between the independent and dependent variables, are premised from the net valance perceptive and ECT model discussed in the previous section. The developed hypotheses in this research show whether the better customer experience of the used Fintech services provided by the banks is more likely to reflect on customer satisfaction in a way that will generate positive behavioural intention and loyalty and undoubtedly helps in realizing financial gains for banks. Considering the research problem (Section 1.3), and the research gap (Section 2.4), 13 major constructs were developed to meet the purpose of this thesis.

- Economic Benefit;
- Convenience;
- Seamless Transaction Processing;
- Perceived service quality;
- Security Risk;
- Legal Risk;
- Operational Risk;
- Financial Risk;
- Confirmation;
- Familiarity (Moderator);
- Customer Satisfaction;

- Customer Loyalty;

- Repurchase Intention;

- Financial Performance

3.6.2 POSITIVE VALANCE

Davis et al. (1992) classified users' motivation of using technology based on extrinsic and intrinsic factors grounded by the cognitive evaluation theory. Extrinsic motivation refers to the performance of an activity to reinforce specific goals and outcomes (i.e. rewards), while intrinsic motivation refers to the process of performing the activity. In users' technology acceptance and behavioural intention literature, both extrinsic and intrinsic factors have been found to have a direct influence on the user's perceived benefits and behavioural intention. Hence, this study focuses on the extrinsic motivation factors, because users tend to use Fintech for utilitarian values (Ryu 2018) and not for hedonic values which is mostly related to social e-commerce adoption (Ozturk et al. 2017; Chang 2016).

Here, the current study posits that, after customers experience Fintech products and services, they evaluate the bank's perceived performance (Positive and Negative factors) with regard to their original expectations. ECT has been consistently established to have a positive relation to confirmation (Hossain & Dwivedi 2015). In a most-cited study by Venkatesh (2011), the confirmation construct is used to explain better and worse situations based on the users' post-experience confirmation. Hence, customers, after experiencing Fintech banking services, will assess Fintech perceived performance to the original expectations. The more benefits users expect from Fintech uses, the more satisfied. They are and the more likelihood, they will continue using Fintech, and thus resulting in financial gain for the banking sector.

Accordingly, this study uses four extrinsic motivation factors based on utilitarian values as the benefit components of using Fintech: Economic benefit, convenience, perceived service quality and Seamless transaction.

Hypothesis 1: Economic benefit - Confirmation of Expectation

Drawing from the theory of Transaction Cost Economics (TCE), costs are considered a major factor in business transactions (Williamson 1981). Empirical studies on the TCE perspective demonstrated that minimizing transaction costs associated with asset specificity, uncertainty and transaction frequency leads to profit among economic actors (Liang & Huang 1998; Teo & Yu 2005). For example, studies on online purchases and digitalization of transactions have adopted the TCE perspective arguing that online transactions reduced associated transaction costs (Yeong & Yong 2009). Moreover, Ahmed and Akhlaq (2015) expressed that online shopping becomes a preferred channel by consumers due to low transaction costs for purchase as well as the cost of visiting outlets whereas shopping can be done digitally.

The economic factor is a crucial dimension for a service-oriented organization. It is known as the main common extrinsic motivational factor that has been mentioned in the existing literature (Keisidou et al. 2013; Kuo-Chuen and Teo 2015; Ryu 2018). In the context of Fintech Ryu (2018) described the economic benefit factor, as the determinant of cost reductions and financial gains from Fintech applications. In essence, using some of Fintech applications in some banking transactions (e.g. mobile remittance, buying and money transferring or P2P lending), provides lower transaction costs from transactional financial service providers by providing standardized services directly to users through mobile channels and internet webs without intermediation (Kuo-Chuen & Teo 2015; Ryu 2018). Price is a very attractive factor to most of customers when they

make buying decisions towards any services (Tingchi Liu et al. 2013). In finance industry, if consumers cannot perceive the significances of the economic benefit gained in online transactions, easily they will turn to another bank and eventually affect their loyalty and intentions. According to Milian, Spinola and Carvalho (2019) that integration of Fintech with business activity in the financial services industry for example in loans, payment, money transfers and other banking operations, have provided customers with improved payments systems at monetary value and lowered transaction costs. Adding to that, Razzaque et al. (2020) found that banking transactions executed using Fintech channels were cheaper than using traditional financial services through bank branches.

Furthermore, prior research has also been evident that Fintech applications (e.g. P2P lending, crowdfunding), generally offer lower fees and better interest rates to users through the internet or mobile platform, that may benefit lenders through high returns, and also reduced interest rates to borrowers, than traditional financial institutes through using match-making platforms at a matching platform at a lower cost (Gerber et al. 2012; Lee and Lee 2012). However, Ryu (2018) research findings lacked the support that economic benefit is a main strong factor to drive consumer continues intention to use Fintech. Hence, it is worth studying economic benefits based on customer actual behavioural use of Fintech applications.

Based on researcher knowledge that limited attention has been given to study the relationship between economic benefits and the actual customer experience in the context of fintech, leaving this area neglected. Despite the progress made in relating economic factors to customer satisfaction within financial sector transactions. Keisidou et al. (2013) proved in their research that lower economics in banking transactions has a positive effect on customer satisfaction. This study aims to determine the effect of economic benefit to confirm customer experience of Fintech and

its relationship to customer satisfaction, loyalty, reuse intention and financial performance of the banks. It is worth including economic benefits constructs in this present study. Prior research has researched economic factors as determinants of customer satisfaction on the provided services of the bank. Drawing from Lee and Cuuingham (2001), they were distinguished from the economic costs by monetary and non-monetary costs, whereas monetary costs included pricing on the provided services, while non-mandatory costs involve service time.

Levesque and McDougall (1996) considered pricing in terms of competitive interest rates as a factor that affects customer satisfaction. In this form, it is a general construct that determines economic-related items that deal with the cost of transactions and applied interest rates (pricing) of services that are established by banks. Previous researchers have structured the determinants of the economic factor in terms of price fairness and price-quality ratio (Lee & Cunningam 2001, Manari & Manari 2007, Keisidou et al. 2013). In essence, Levseque and McDougall (1996) proposed that economic factors are usually considered as part of the overall customer satisfaction in the service industry.

Based on the above arguments, economic benefits should be studied to test the actual customer experience of Fintech applications provided by banks, no evidence in the existing studies that have studied economic benefits and the customer experience in the Fintech context. Hence, given the criticality of Fintech application to banks, it is thought that economic benefit might affect the perceived benefit of Fintech, thus positively impacting the customer experience of using Fintech provided by their banks. Linking economic benefits and customer experience. Hence, the first hypothesis can be formulated as follows:

H1: Economic benefit has a positive effect on confirmation of expectation towards Fintech.

Hypothesis 2: Convenience - Confirmation of Expectation

There are two constructs for convenience, comprising degrees of operational and locational characteristics of handling of an activity (Keisidou et al. 2013; Okazaki & Mendez 2013; Mbama & Ezepue 2018). For instance, Okazaki and Mendez (2013) suggested that convenience is the most important factor in successful mobile and online services. In their study, they referred to flexibility in time and location as the main determinants of the success factor of convenience in offering a service. Kuo-Chuen and Teo (2015) and Ryu (2018) see convenience as one of the key extrinsic motivations related to offline and online activities in Fintech transaction, which is driven by the portability and immediate accessibility. In essence, users can get unprecedented convenience and effectiveness through mobile devices or internet platforms without the necessity to travel to financial institutions where it takes effort and time. For instance, Shen et al. (2010) suggested that the convenience factor can be used to predict users' willingness to use mobile digital banking systems. In this context, Ryu (2018) tested the importance of convenience factor to perceived benefit in customer intention to use Fintech and it was found that the convenience of Fintech application was the most consistent factor affecting the perceived benefit.

It was noted previously that the convenience factor is scarcely researched alongside customer experience, although convenience has been found to have a positive relationship with customer satisfaction (Keisidou et al. 2013; Kim et al. 201l) and customer experience (Mbama & Ezepue 2018; Garg et al. 2014). Recently, with the development of Fintech applications and the increase of mobile banking, researchers in the field of Fintech have studied convenience factors to determine consumer behavioural intention to use Fintech (Ryu 2018). However, the convenience factor has never been studied in the context based on the user's actual use of Fintech (e.g. experience of using Fintech). In prior studies, convenience and customer experience have been

studied recently by Mbama and Ezepue (2018) in customer utilization of digital banking. In their study, they focused on operational convenience which is the main function of transacting through mobile banking.

Hence, since mobile devices and internet platforms are critical and effective channels in Fintech, compared to the traditional financial services, the convenience that these platforms offer constitutes the reason for customers in determining the desired benefit from using Fintech. According to Razzaque et al. (2020) that in Finance industry convenience is a major concern for many banking consumers, indicating that it's the driving force for bank consumers to open an account or obtain financing directly through digital bank channels without visiting a branch, in addition to obtaining lower fees and better interest rates. Hence, it is hypothesized that:

H2: Convenience has a positive relationship to confirmation of expectation toward Fintech.

Hypothesis 3: Seamless Transaction Processing - Confirmation of Expectation

A seamless transaction processing is an extrinsic motivation factor of Fintech, which refers to the transaction-related benefit of using Fintech in online banking transactions for money payments, money transferring, lending and investing applications. The seamless transaction is scarcely considered in the existing Fintech literature, yet it has been found to have a positive effect on the Fintech adoption of perceived benefit (Ryu 2018; Abramova & Böhme 2016). The seamless transaction processing provided in Fintech transactions is a fundamental characteristic that makes traditional institutions like banks change the methods of transactions, especially in the financing process. For example, it allows users to manage transactions on a cost-effective platform which results in simple and fast financial transactions eliminating intermediary requirements or visiting a branch (Chishti 2016; Zavolokina, Dolata and Schwabe 2016). According to Ryu 2018 and Razzaque et al. (2020) reveal that Fintech transactions in finance industry have transformed

substantially due to the rise of digital finance and provided new and innovative financial products and services to users by providing them direct services through a seamless transaction. For example, payment, money transfer or remittances, banks had provided to machine learning and solutions to facilities processing payments through the card directly with an software tools for billing by subscriptions (Milian, Spinola & Carvalho 2019). This seamless transaction processing on Fintech urges that banks tend to develop their products and services in a competitive and innovative way against non-financial institutes (Fintech companies or IT companies) as they started to offer Fintech products and services (Ryu 2018).

Leong and Sung (2018) see seamless transaction processing as one of the key service qualities of Fintech on payment aspects. For example, cashless payment is the most important link to digitalization and development trends, as many companies including banks have developed related payment solutions for the customers through online platforms or mobile applications. Also, many banks have used mobile applications to update customer due diligence that enables the customer to input confidential information through the application without the necessity to visit the bank (Sharma & Gutiérrez 2010). As a sub-topic underpayment, blockchain has been widely studied and suggested, and there are views that the adoption of blockchain in the banking industry will enable banks to process payments faster and accurately at cost and time-efficient leading to enhanced earnings, improved efficiency and customer retention and user satisfaction. Furthermore, the decentralized payment system of the digital currency (e.g. Bitcoin) has received much attention in practice and academia about the pros and cons of Bitcoin. For example, Abramova and Böhme (2016) studied the perceived benefits and risks of Bitcoin and found that transaction processing characteristic is the main influencer factor of users' engagement in Bitcoin transactions. Weichert (2017) revealed that if banks do not maintain seamless transactions in

products and services, customers are more inclined to move to another bank. Therefore, if banks want to adapt Fintech, they need to become facilitators rather than service providers to compete with non-financial companies offering similar products and services. This thinking was referred to by Coetzee (2018) as an important strategic tool to prepare for the disruption posited by the Fintech revolution. Hence, the ability of clients to have access to information quickly has been cited as an important factor for driving the use of digitalization; however, limited attention has been given to the influence of seamless transaction processing and the customer experience in the banking sector since technology has radically changed how the banks interact with clients. The seamless transaction processing is significant factor in Fintech, since finance industry streamlined processes and decisions made through the substitution of human intelligence using technology for example, chatbots, Robo-advisors, machine learning for fraud detection and other automated customer interactions to enhance customer experience and give customers real time look to their bank account (Belanche, Casaló & Flavián (2019);Tohang, Lo &Anggraeni2021). Accordingly, based on the discussion above, the hypothesis is proposed as follows:

H3: Seamless transaction processing has a positive relationship to confirmation of expectation toward Fintech.

Hypothesis 4: Perceived Service Quality - Confirmation of Expectation

Traditional banking interactions in non-digital environment, while digital banking interests through network technology. Digital banking products and services have unique types and characters that traditional banking service don not provide. For example, digital banking enables users to carry out range of banking products electronically at any time and place at low costs and processing fees (Mbama & Ezepue 2018; Keisidou et al. 2013; Amin 2016. In this way, digital banking has a significant role in operating and fixed cost reduction (Belanche, Casaló & Flavián

(2019);Tohang, Lo &Anggraeni2021), adding to that it helps the bank to build better and strong customer relationship with their customers (Amin 2016). despite the increasing number of digital banking users, however poor service quality is the common concern to customers. In fact, Amin (2016) and Garg et al. (2014) reveal that customer service quality, online information system quality and banking service product quality are the main dimensions of Fintech service quality in finance industry.

The importance of service quality in service provider-client relationships has been emphasized in many prior studies (Parasuraman, Zeithaml & Berry 1988; Lee 2009; Zhang et al. 2018). Also, many recent studies on the functionality aspects of online systems and activities in the service industry were testing the employment of SERVQUAL (Parasurman et al 1988) in banks, hotels and insurance companies (Mbama & Ezepue 2018; Keisidou et al. 2013; Amin 2016), which affects customer experience (Garg et al. 2014). Kotler and Armstrong (2012) view customer satisfaction and loyalty toward perceived service after the post-purchase evaluation of products and services. Researchers have debated the influence of service quality on customer satisfaction, whilst some believe that service quality leads to satisfaction and increases customer loyalty, others think the opposite (Ting 2004). The studies of Keisidou et al. (2013), Kaura et al. (2015) and Mbama & Ezepue (2018) in the digital banking context suggest service quality leads to increase customer satisfaction, and bank profitability (Ladhari et al., 2011). Levey and Hino (2016) suggested that service quality mediates overall customer satisfaction and loyalty in utilizing online banking. Also, Amin (2016) and Raza et al. (2015) study internet banking service quality in Saudi Arabia and Pakistan, respectively and its relationship to customer satisfaction and loyalty. They found that service quality improves the probability of customer satisfaction increase and consequently leads to loyal customer and strong provider-client relationship.

Moreover, Clemes (2008) found that quality dimensions were an important potential influence on customer perception to adopt online banking. In essence, empirical studies in service quality and customer satisfaction have considered reliability, tangibility, responsiveness and assurances as to the main determinants of service quality that affect the satisfaction of customers positively (Levey & Hin 2016; Kaura et al. 2015; Lee & Chung 2009). Moreover, prior researchers in the field of online banking services and their relationship to customer satisfaction, service quality in digital banking were viewed as meeting and exceeding customer expectations, being accessible and reliable (Keisidou et al. 2013; Ladhari et al. 2011; Amin 2016). As well, in digital services studies on functional quality were also considered, described as the characteristics of the system in terms of easiness, simplicity, interaction (Garg 2014; Klaus & Maklan 2013). Mbama and Ezepue (2018) tested the functional and service characteristics of quality in users' uptake of digital banking in UK banks and its impact on customer experience, they found that service quality affects UK customers in using digital banking experience, which consequently leads to customer satisfaction and loyalty. Also, they called for further insights across countries in digital services in banks. Based on the above discussion, considering the infant stage of Fintech there is limited research on service quality as a concept on Fintech services, hence the following hypothesis is proposed:

H4: Perceived service quality has a positive relationship to confirmation of expectation toward Fintech.

Negative Valance

This study integrates perceived risk into the ECT framework to gain a comprehensive understanding of the satisfaction, constant intention and loyalty of customers with using Fintech. Perceived risk in information system literature has received limited attention (Ayanso, Herath &

O'Brien 2015). The technology acceptance model has attempted to describe the perceived risk of technology based on the pre-adoption perception of a consumer. However, this study opted for ECT to meet the objective of this study through analyzing the post-adoption of consumers of Fintech. Based on consumer confirmation of threats associated with Fintech. Technology innovation is associated with threats (Schierz et al. 2010). Since Fintech is an emerging phenomenon, Fintech customers are exposed to risks constantly that may arise, the risk of possible insufficient information or resources as well as the failure of operation can cause a major problem for the customer experience of using Fintech. Perceived risk is more likely to significantly influence users' readiness to transact in Fintech.

This study considers Cunningham's (1967) framework of perceived risk to elaborate on the individual risk factors resulting from the user's experience of Fintech. Cunningham (1967) classified perceived risk into six dimensions: performance, financial consideration, opportunity/time, safety, social factor, and psychological factors. Accordingly, when integrating Cunningham's (1967) model into the Fintech context, this study developed the following four types of risks: operational risk, security risk, financial risk and legal risk. Previous studies have linked risks to the customer's intention to use Fintech, but the relationship of risks to the customer's experience has not been established as far as our knowledge. Hence this study investigates explanatory risks developed by Fintech literature.

Hypothesis 5: Security Risk - Confirmation of Expectation

Security is a serious concern in any other online system (Pavlou et al. 2007), Fintech products and services expose users to certain types of risks. Security risk refers to the possible loss due to cyber-attack and fraud that compromises the security of the financial transactions of Fintech, thereby, causing harm to the user transactions. In the context of electronic services, Lwin et al. (2007)

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conceptualized security risk as to the possible invasion of customer privacy which affects the effectiveness of transactions, thereby this is a critical concern to customers. Jan and Placios (2016) found that security risk is one of the most important factors that threaten the quality of service in mobile banking among customers.

Banks are constantly investing in the securitization of transactions that are handled through the web or mobile to reduce security risks (Hanafizdaeh 2014; Martins, Oliveira & Popovič 2014). It is possible, although unlikely, that an already confirmed transaction turns to be invalid due to fraud or hackers leading to a user's monetary loss and violation of the user's privacy. In the context of Fintech, Schierz, Schilke and Wirtz (2010) claimed that dealing in Fintech involves a high degree of ambiguity of potential loss which increases the perceived security risk of Fintech, however, when security concerns are properly attended to, user's satisfaction increases. Also, Ryu (2018) found that Fintech users were mainly concerned about security issues influencing their intention to use Fintech. However, banks are investing in machine learning using the advanced web 3.0 technology to secure against fraud. According to Voshmgir (2019) that web 3.0 is latest interent technology created with artificial intelligence, machine learning, it employs the blockchain security system to keep customers information safe and secured.

Therefore, this study adopts the definition of perceived security developed by Oghuma et al. (2016) "users' expectations toward the ability of mobile instant messaging providers in protecting their information from security breaches". Hence, it is assumed that the negative confirmation of expectations of Fintech by the customer will reduce their perceptions of security risk. Prior studies have shown that as service providers expand their system offering and business models through marketing channels and social platforms, users expect a security guarantee of their personal

information (Mbama & Ezepue 2018; Ryu 2018). Accordingly, the following hypothesis is formed between perceived security risk and confirmation.

H5: Security risk has a significant relationship to confirmation of expectation toward Fintech.

Hypothesis 6: Legal Risk - Confirmation of Expectation

Fintech is an unprecedented technology in the banking sector, users may be hesitant about the lack of laws and regulations of Fintech status. Legal risk is explained by Ryu (2018) as unclear legal status and lack of universal regulations for Fintech. Ryu (2018) found the legal factor as one of the key risk factors that influence users' intention to use Fintech. Prior research in internet banking products, referred users legal risk as the level of uncertainty and regulatory status of transactions in case of legal breaches (Grant & Hogan 2015; Bohr & Bashir 2014; Abramova & Böhme 2016). However, government and Fintech authorities' have employed significant role in authorizing and supporting Fintech products and services in practice, by applying measures to reduce legal risks on the overall internet banking services (i.e. E-KYC, Digital Payment, Regulatory sandboxing and other Fintech related policy). As a result, Fintech regulatory frameworks "Sandboxes" were created to facilitate the development of innovative banking services using Fintech (Magnitt 2021).

Especially the banking sector (Ryu 2018). Ryu (2018) also noted that the government and Fintech authorities have supported the establishment of Fintech transactions and tended to create an appropriate system for Fintech transactions, especially in the banking sector (both Conventional and Islamic banks). Also, the banking sector is regulated by the government central bank, any product must be legalized and subjected to stringent risk analysis in terms of financial loss and safety concerns before it can be offered (Ryu 2018; Abramova and Böhme, 2016; Razzaque et al. 2020). The banking sector is regulated by the government central bank; hence, before offering

any product, it requires legalization and strict risk analysis related to financial loss and safety matters (Ryu 2018; Casaló et al. 2008; Susanto et al. 2013). Therefore, when legal concerns of Fintech proposal attended by a service provider (bank) will confirm user's expectations towards Fintech. Therefore, it is proposed that legal risk has a significant effect on confirmation of expectations towards Fintech. Hence, the relationship in legal risk is tested through the hypotheses:

H6: Legal risk has a significant relationship to confirmation of expectation toward Fintech.

Hypothesis 7: Operational Risk - Confirmation of Expectation

Operational risk refers to the potential loss due to security flaws or incidents of stolen passwords (Vasek et al. 2016; Grant & Hogan 2015), system's vulnerabilities, and the irreversibility of Fintech transactions (Abramova & Böhme 2016; Eyal & Sirer 2014, Karame et al. 2012) and failed internal operational implementation systems and processes (Arakat & Hussainey 2013). Prior studies in the digital banking literature have found that perceived operational risk is a problematic factor for users' continuous use of technology in information sharing. For instance, Ryu (2018) reveal that operation and system failures are the most common issue in Fintech transactions, which is primarily due to inadequate internal control by the service providers. Although, operational risk is a critical factor for users, specially that customers in internet banking interacts through network technology without 3rd party intermediary, however, most of banks are investing to adopt the latest technology to protect against operational failures. Magnitt (2021) pointed out that in the context of Fintech, operational risk depends on the effectiveness of technology advancement, especially that the lack of operational skills in banking systems and internal processes will lead to consumer distrust and dissatisfaction leading to the prevention of the use of FinTech in future.

Thus, it is assumed that the banking sector considers many operational matters, leading to the ability to reverse transactions and financial disturbances of transactions. Thus, if there is a high operational risk consideration from service providers against Fintech operations, will result in users' a positive experience, satisfaction, loyalty and intention to reuse the system. Accordingly, there is a need to explain the relationship of operational risk on user's confirmation of expectation; whereas banks are investing in operation upgrade systemically and functionally to minimize risks; thus, it is hypothesized that:

H7: Operation risk has a significant relationship to confirmation of expectation toward Fintech.

Hypothesis 8: Financial Risk - Confirmation of Expectation

Ayanso, Herath and O'Brien (2015) described financial risks as the financial burden they place on individual practices. Financial risk refers to the potential loss of money in the financial transactions of Fintech (Forsythe et al. 2006) and included consumers' sense of insecurity regarding the usage of online payment, which has been evidenced as a major obstacle to mobile payment (Ozturk et al. 2017). Prior research in consumer technology acceptance has found that perceived financial risk is a major concern driving users perception and behavioural intention to use online and mobile payment specially that customers interacts through network technology and fear of money loss in case a transaction was done incorrectly (Ryu 2018; Ozturk et al. 2017; Abramova & Böhme 2016; Benlian et al. 2011, Melewar et al. 2013).

Melewar et al. (2013) merged financial risk with privacy concerns in studying online payment behaviour of consumers; referring to that financial risk is always complemented by consumer privacy concerns due to customer fear of not getting a product after payment and improper access to customer account. For example, when customers use personal information in a transaction (e.g.

credit card or bank account), high concern that this data is being collected for one purpose but might be used for another purpose without customer authorization. In general, consumer privacy concerns have four dimensions including collection, errors, unauthorized security use, and improper access (smith et al., 1996; Ozturk et al. 2017). Which is similar identification by Melewar et al. (2013) on describing financial risk leading to monetary loss of almost all transactions including Fintech related transactions. Abramova and Böhme (2016) and Ryu (2018) found a negative relationship between perceived risk and customer willingness to use Fintech transactions, and financial risk (loss) was the most consistent predictor of consumer behavioural intention.

Offering online products and services not only requires implementation costs from service providers. However, it needs maintenance costs of the system with periodic checks and updates as well upgrades for the system to be in line with the policy and guidelines based on authorities and regulators (Oghuma et al. 2016). Hence, in Fintech, it is assumed that service providers consider the potential financial risk that might occur. In turn, customers believe in the strong ability of the service provider to protect the transaction from breaches (Oghuma et al. 2016). This research tests the effect of financial risk on confirmation of expectations, through this hypothesis:

H8: Financial risk has a significant relationship to confirmation of expectation toward Fintech.

Hypothesis 9: Confirmation - Satisfaction

According to ECT, confirmation of previous expectations will affect both the user's satisfaction and the service provider (Oliver 1980; Mattila & O'Neill 2003; Hossain & Dwivedi 2015; Hossain & Quaddus 2012). According to that confirmation stage, it is crucial for service provider to measure provided service performance because when the actual user experience matches or exceeds the initial expectations at the confirmation stage; firms can convert customers from 'non-

recurrent' to 'recurrent'. Previous studies found confirmation to be an essential element that impacts customer satisfaction (Oliver, 1980; Mattila & O'Neill 2003; Hossain & Quaddus 2012; Venkatesh et al. 2011). Venkatesh et al. (2011) noted that when the experience meets or exceeds customer experience, confirmation is established leading to user satisfaction and subsequently leads to loyalty and lower intention to leave the relationship with the service provider. However, if the actual use of experience below the initial expectation leads to dissatisfaction. The same relationship should apply to Fintech use.

The current study suggests that consumer satisfaction is determined by confirmation of expectation based on customer evaluation of the service performance. Therefore, at the confirmation stage, Fintech users will compare the experience of their Fintech use with their initial expectations. If their expectation is confirmed, they will feel satisfied with Fintech and the service providers. Therefore, it is proposed that confirmation is positively related to satisfaction because it presents customer realization of expected benefits of service, whereas disconfirmation will have a negative impact on users' level of satisfaction indicating failure to achieve customer expectation. Therefore, it is hypothesized that:

H9: Confirmation is positively associated with customer satisfaction.

Hypothesis 10: Moderating effect - Familiarity

Drawn from literature, a user's familiarity refers to customer degree of understanding of service execution procedure of an entity, often based on previous learning, interactions, and experience (Gefen et al. 2003, p. 63). Kim, Ferrin and Rao (2008) marked that familiarity reduces user uncertainty and can be shown by understanding of ambiguity and complexity about the platform channels and procedures.

User familiarity varies in terms of the encouragement to use the service due to the level of knowledge and experience in adoption and awareness of risks. Stewart & Jürjens (2018) indicated that user's minimum familiarity and experience with technology are more willing to adopt and use new information technology as well as to express positive attitudes toward Fintech innovation. familiarity refers to how properly a client knows the methods in using website, consisting of what scenario and how to move approximately input data like credit card details to fulfill the transaction.

Familiarity connected with the user's prior experience which eliminates the complexity and enables users to bypass all non-useful methods and facts which enable the user's utilization in a less complicated and extra beneficial way for the entity. Subsequently, increased familiarity also improves other elements that are crucial in transactions mediated via an IT artefact, together with customer satisfaction, behavioural intention and being loyal to the entity. This is due to the fact an increased familiarity implies a certain level of accumulated knowledge derived from prior successful experience or learning of using the system (Gefen 2000).

Singh et al. (2017) indicated that the use of Fintech in finance created a disruptive innovation with complicated systems not only from a firm perspective but also for the customers who faced challenges in using applications. Specifically, Fintech is about the use of technology to operate outside traditional business models for financial services which are replacing the job of human employees and reducing physical branches and presences (Milian, Spinola & Carvalho 2019). Thus, these changes in the way of financial services are offered need customers' prior experience or adoption of knowledge to be willing to engage with the interactions of their finances. Nevertheless, not all the customers have the experience or knowledge; thus; the customer's level of familiarity may differ and impact, thereafter, engagement with using Fintech.

Previous research has found that customer familiarity (e.g. knowledge, learning, experience) positively affects on confirmation of service performance on using e-commerce websites for online trading (Ozturk et al. 2017; Zhou et al. 2018). Considering this finding in the current study, it is proposed that familiarity with Fintech acts as a moderating variable. In particular, a customer with a high level of familiarity is likely to exhibit different post-purchase reactions than a customer with a low level of familiarity. According to ECT, confirmation has an effect on customer satisfaction which is further related to continuous intention. On this basis, customer satisfaction has a significant evaluation on this study. Thus; it is proposed that customer level of familiarity will moderate the relationship between confirmation and customer satisfaction. Therefore, the following moderating effect of the user's level of familiarity is proposed:

H10 - The effects of confirmation on customer satisfaction are strengthened for users with a high familiarity of Fintech, and weakened for users with a low familiarity *of Fintech.*

Hypotheses 11 & 12: Customer Satisfaction - Repurchase Intention – Loyalty

In the service literature, many studies have provided empirical evidence supporting that customer satisfaction has positive relationship on customer loyalty and repurchase intention (Jacoby & Kyner 1973; Dick & Basu 1994; Fathollahzadeh, Hashemi & Kahreh 2011; Mbama & Ezepue 2018). For example, Mbama and Ezepue (2018) found that there is a significant relationship between customer satisfaction and loyalty in digital banking. Every customer feels related to specific service providers, leading to the retention of relationships and feeling committed and loyal to the place (Meyer & Schwager 2007).

Prior studies stated that customer satisfaction is the most influential factor on customer experience leading to effective customer experience (Oliver 1980; Keisidou et al. 2013). The term satisfaction describes the degree of meeting expectations and fulfilment that customers sense from dealing

with a company (Licata & Chakraborty, 2009). Oliver (1980) linked the level of customer satisfaction with the degree of loyalty to the company as determinants of customer experience, whereas customer satisfaction is defined as the difference between customer expectations of perceived services and the experience.

This study considers ECT model to investigate the post-consumption intention of the consumer on using Fintech provided by the banks. According to the ECT model, consumers generate a feeling of satisfaction based on their confirmation of expectation; hence, positive confirmation occurs leading to satisfaction, which ultimately affects repurchase intention. The main argument here is, when customer expectations are confirmed, not only will lead to repurchase intention, it also cultivates loyalty. According to Fathollahzadeh, Hashemi and Kahreh (2011) that costomers who are satisfacied with interent banking are more likely to engange in consistent relatonship with the bank and show loyal behaviour.

Different definitions of customer loyalty have been given by (e.g. Jacoby & Kyner 1973; Dick & Basu 1994; Fathollahzadeh, Hashemi & Kahreh 2011). While, Liang et al. (2009) and Klaus and Maklan (2013) suggested that customer loyalty is an emotional customer attachment to the place, repetitive purchasing behaviour and effective word of mouth, resulting in a high net profit to the place. Regarding technology adoption, limited research has considered a measurement of customer experience (Mbama & Ezepue 2018), but what leads to customer satisfaction in internet banking (Amin 2016; Raza et al. 2015), mobile banking (Jun & Palacios 2016) and digital banking (Mbama & Ezepue 2018) have been tested. The majority of these studies' antecedents have predominantly been tested using customer satisfaction, rather than customer experience, and the constructs were mainly considered positive elements leading to customer satisfaction, giving limited attention to negative factors. This is more likely to influence customer expectations.

Because Fintech is at the early stage of implementation in the banking sector, the need to measure actual customer experience is essential.

Fornell (1992) and Evans and Lindsay (1996) proposed the house of a quality model, and the concept of organization with customer content focus was expressed. Organizations with this focus have an opportunity to convert those customers on loyal who buy from them over an extended period. This concept was appreciated by researchers (Bowen & Chen 2001; Licata & Chakraborty, 2009). Bowen and Chen (2001) suggested that the more the customer is satisfied, the less need to switch service providers, the more intention to repurchase with the same service providers. Hence, in this manner, increasing repurchase intention eventually will increase the profitability of the organization.

Considerable empirical research supports the relationship between satisfaction and customer retention leading to loyal customers (Ladhari, Ladhari & Morales 2011; Keisidou et al. 2013; Mbama & Ezepue 2018). In this way, the following hypotheses are developed presenting the connection between satisfaction, repurchase intention and customer loyalty:

H11: Customer satisfaction has a positive effect on repurchase intention.

H12: Customer satisfaction has a positive effect on customer loyalty.

Hypotheses 13 & 14: Repurchase Intention - Loyalty - Financial Performance

Repurchase intention and loyalty are associated with individual behaviours, they have conceptual linkage to organizational level like level of retention and cross – buying. Many studies have suggested that both customer retention and cross buying behaviour are likely to increase income and lower costs, hence it influence firm performance (Mbama & Ezepue 2018; Hossain & Dwivedi 2015; Yeong 2009) and also they are conceptually essential to organization performance (Liang 2009; Keisidou et al. 2013). For example, according to Reichheld and Sasser (1990)

findings that loyal customers are less likely to switch between service providers, and their retention demands less ongoing relationship effort. The literature on customer satisfaction and post behaviour indicates that positive customer repurchase intention and loyalty have the potential to increase organization income in terms of profitability and lower costs, and consequently, lead to better firm financial performance (Liang 2009; Keisidou et al. 2013).

In the service industry, repurchase intention is measured by the individuals' process to repeat the purchase and its considered as an essential element in customers' behaviors (Pérez Sánchez et al. 2007; Srivastava & Sharma 2013; Keisidou et al. 2013). Pérez Sánchez et al. (2007) revale that marketing managers to anticipate sales and forecast service demand they must consider level of repurchase intention. Similarly, scholars often use repurchase intention as a proxy for repurchase behaviour and its impact on firm performance (Srivastava and Sharma 2013; Zineldin et al. 2006)

Loyalty in the banking sector explained as the repeated customer transactions with a certain bank for a long period of time (Ladhari, Ladhari & Morales 2011). This means that loyal customer is likely to repeat purchasing the product and services recommending to other customers. Repurchase intention is a person's positive attitude towards the company that will lead to repeatable buying behaviour (Zhou et al 2009). Prior researchers have claimed that studies in repurchasing intentions have been fragmented, and few studies have considered using a certified framework to analyze consumer repurchasing intentions and their attendants and effects on service providers (Zineldin 2006; Zhou et al. 2009; Kim et al. 2012). Studies have related customer satisfaction as a crucial factor that will make customers repeat purchases leading to loyal consumers (Kotler 2010; Kim et al. 2012), since, if customer satisfaction is properly fulfilled, then companies can easily guarantee repeat purchases in future and unlikely to switch to another company (Edvardsson et al. 2000).

Repurchase intentions have an important effect on companies' competitive advantage (Hellier et al. 2003; Lam et al. 2004; Reichheld et al. 2000; Zineldin et al. 2006). It is opined by marketing and management researchers that there is a positive relationship between a company's financial performance and repetitive purchasing of products (Anderson et al. 1994; Anderson et al. 1997; Bolton et al. 1998). Mbama and Ezepue (2018) investigated the relationship between customer experience, satisfaction, loyalty and financial performance of banks using ROE, Net Interest Margin (NIM) and cost-to-income ratio, while Keisidou et al. (2013) used ROA, ROI, NPM and ROE in showing the relationship between customer satisfaction, loyalty and financial performance.

Undoubtedly, multiple studies call for different ways of measuring financial performance. Regarding the banking sector, it is thought that increased customer satisfaction is likely to increase financial performance (Hallowell 1996; Ladhari, Ladhari & Morales 2011; Ibzan, Balarabe & Jakada 2016). For example, Ladhari, Ladhari and Morales (2011) found that a five per cent increase in customer loyalty results in an increase in organization profits by 25 to 85 per cent. Studies in financial performance are limited and not commonly considered in the literature (Keisidou et al. 2013). However, researchers who measured financial performance have used multiple forms of measurement. In essence, Chi and Gursoy (2009) asked hotel managers to rate a hotel's financial performance compared with competitors in terms of profitability, ROI and Net profit. On the other hand, Hallowell (1996) chose to measure financial performance using return on asset and non-interest experience. In the present study, the approach by Keisidou et al. (2013) will be adopted to measure the financial performance of banks, using profitability ratios namely; return on assets or investments, net profit margin and return on equity. Accordingly, the final hypotheses are therefore as follows:

H13: Repurchase intention has a positive effect on the financial performance of banks.

H14: Customer loyalty has a positive effect on the financial performance of banks.
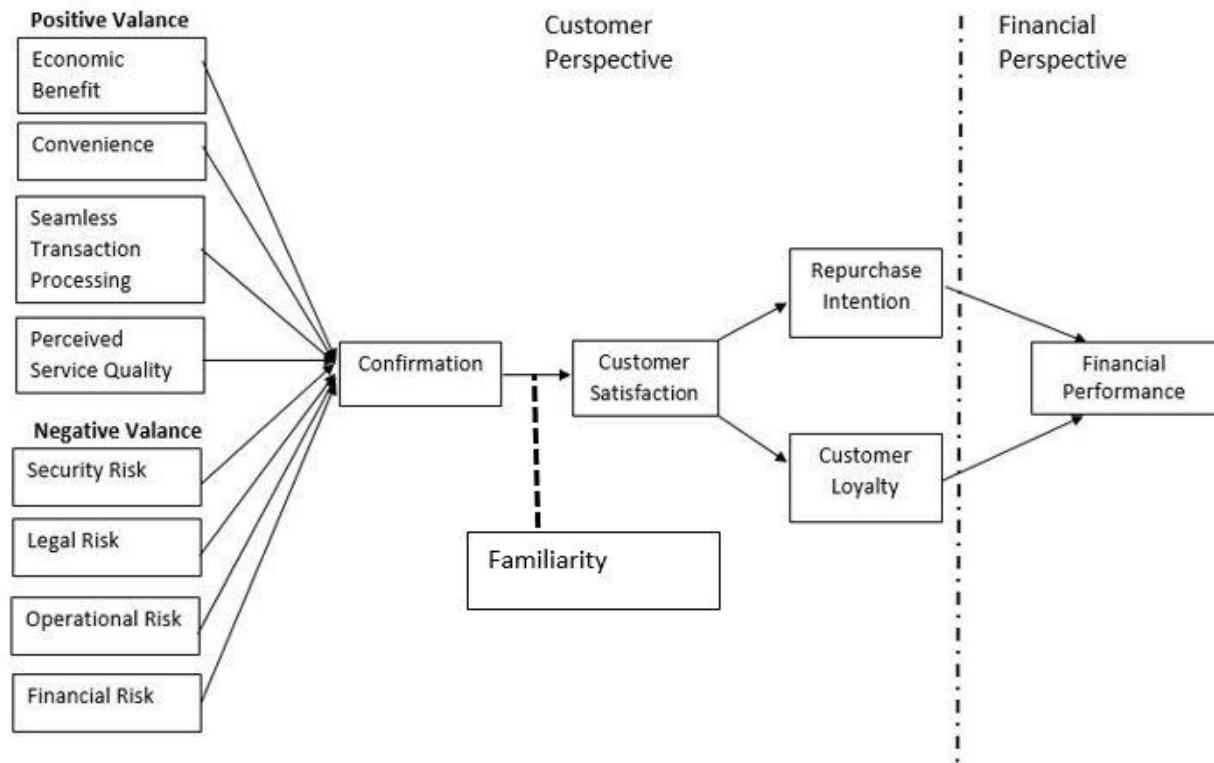
Figure 3.2 Research Conceptual Model

3.6 CONCEPTUAL FRAMEWORK

The research framework of this study draws on ECT and positive and negative factors associated with Fintech for the purpose of developing a theoretical framework to explain the purpose of the study. It is important to pause here to draw attention to the weak evidence of customer experience on using Fintech in the banking industry and how it is relevant to bank financial performance. Therefore, the current study acknowledges the importance of customer expectations and performance in operationalizing the confirmation of expectation as the main construct to evaluate customer expectation after the experience of the service. As suggested by Ryu (2018), the current study adopts positive and negative factors influencing customers' perception of using Fintech as

an adequate assessment factor for the perceived performance of Fintech. In fact, it is possible to extend these developed factors by adding perceived service quality as suggested earlier by Cronin and Tylor (1992) as a crucial dimension to analyze performance, particularly in a service industry. Figure 3.2 illustrates the conceptual framework for this research that depicts the behavioural sequence of behavioural intention and behavioural loyalty as the intervening variable between customer perceptions and financial performance. In the proposed model, there are potential relationships between positive and negative factors (economic benefit, convenience, seamless transaction processing, security risk, legal risk, operational risk, financial risk) with confirmation. Furthermore, confirmation has a significant effect on customer satisfaction through consideration of users' familiarity with Fintech, leading to better repurchase intention and loyalty. To remark that prior discussion of these constructs was developed; however, to the best of the researcher's knowledge, negative and positive factors associated with Fintech, satisfaction, familiarity, repurchase intention, loyalty and financial performance have not been combined in one model in light of Expectation Confirmation Theory as well as in the context of banking sector generally and in UAE in particular.

3.7 ADVANTAGES OF THE PRESENT RESEARCH FRAMEWORK

After the wide and in-depth study of the existing literature on Fintech, this study departs from a research model that incorporates Net Valance's perspective and ECT. Considering that Fintech is an integration of financial technology, e-commerce products and financial services, given the nature of financial services, have the effect of positive and negative factors related to Fintech features which are crucial to determining customer behaviour namely, satisfaction, loyalty and continuous intention to use Fintech through the bank. To the best of the researcher's knowledge, the new proposed model has not been tested before and it is the first time that such an approach

has been used to test customer satisfaction, loyalty, repurchase intention and financial performance which are being tested in the Fintech context.

The new proposed model hypothesizes that different Fintech user differences (i.e. familiarity) have various expected benefits and risks. The factors that have been selected to be studied in this study to examine the impact of users positive (economic benefit, convenience, perceived service quality and Seamless transaction) and negative valence (operational risk, security risk, privacy risk and legal risk) perceptions towards their confirmation of experience on Fintech. In addition, the investigation of the impact of individual differences variable (familiarity) on their satisfaction and thereafter repurchase intention and loyalty to the banks.

The majority of the selected factors (economic benefit, convenience, perceived service quality, operational risk, security risk, privacy risk, legal risk) were selected because they have been widely used in the Fintech literature. However, they have never been used to see the cumulative effect on customer satisfaction and reuse behavioural intention based on the actual utilization of Fintech and how customer satisfaction, loyalty and reuse behavioural intention can predict the financial performance of banks. Also, another reason for using these factors is that the United Arab Emirates banking sector is developed with the presence of local and international banks; hence, the customers are having prior knowledge of using digital banking systems as well as the government and financial institutions in the United Arab Emirates are incubators of innovation, especially in the service industry through establishing online banking (Mouakket 2009). Also, this study considers addition of service quality as a part of positive valance of using Fintech, since the study deem to reflect on the customer experience of using bank service, its encouraged in service delivery studies to consider service quality measures (Samen, Akroush & Abu-Lail 2013).

Banks that offer Fintech services are still considered limited in the Arab region when compared to Europe or the US (Mouakket 2009); however, a few pioneers have emerged among UAE banks to offer online banks, the service first was introduced by Emirates Bank International in 1996 (Emirates Bank Association, 2019). The UAE is a developing country with the most competitive banking sector in the Arab world, with an estimated 48 banks (21 local and 27 foreign banks) UAE (Central Bank 2020). Based on a recent report by Emirates Bank Association (2019), 93% of all banking transactions have been done on digital channels in most UAE banks. Hence, the adoption rate of individual customers has grown and is projected to continue growing. Given the emphasis on the banking sector in the UAE, it would be helpful to develop greater strategic insight into their use of Fintech services to better service both retail consumers and businesses and in turn to gain a market share, better margins and brand equity. However, there are many constraints related to privacy and infrastructure issues- that need to be considered which is about the evaluation of the development of Fintech in the Arab world.

This study focuses on the UAE which is considered to be one of the leading Arab countries in the advancement of information and technology in the banking sector (Mouakket 2009, Awamleh & Fernandes 2005). Technology in the service industry has proven to be affordable innovation to help companies to reach their customers more easily (Ahmad et al. 2018). However online privacy and risk concerns are highly sensitive issues in this region (Mouakket 2009). Hence, protection actions from central banks and government regulations are quite common in UAE (Emirates Bank Association 2019). Accordingly, the constructs employed in this study would capture the positive and negative factors of using Fintech as well as its relation to customer satisfaction, loyalty, repurchase intention and financial performance of banks. Therefore, when studying the service industry in the United Arab Emirates, it is crucial to consider both the benefit and risk factors of

using the service, plus it enables banks to allocate the budgets for expanding and marketing the service.

There are many academic advantages for the present framework; these include studying the customer experience of using Fintech and its impact on the bank's financial performance. Also, extending the Expectation Confirmation Theory by arguing that the grouping of positive and negative factors drawn from the Net Valance Perspective is essential to predict customer behavioural intentions and loyalty. Moreover, by adding familiarity dimension to the framework, through covering customer individual differences seeking to deeply understand its influence on consumer satisfaction of using Fintech. Furthermore, by adding the loyalty and continuous intention constructs, the study enhances the understanding of customers' post-consumption behaviour that can predict the financial performance of banks. Indeed, this study enhances the knowledge concerning the impact of confirmation and customer satisfaction due to positive and negative factors on behavioural outcomes; specifically, the proposed model is complete and detailed of customer satisfaction, loyalty and continuous intention and their effects on the financial performance in the banking sector.

The present framework also has many practical advantages and throws light on the significant component of positive factors specifically service quality, economic (price), convenience and the risks that may occur while using the service; collectively, these factors influence customer satisfaction intentions and loyalty. Considering that Fintech is a growing field in the financial industry with multiple supplies, service providers require to maintain a strong relationship with their customers to determine market share. In addition, the proposed framework helps to review the bank's policies, marketing strategies by evaluating the satisfaction level and behavioural

intentions of the customers. Furthermore, it provides the banking service provider with the driving reasons for customers to move into the satisfaction stage, through considering the fact of customer level of familiarity of using the service. Last but not least, the framework identifies the main elements that result in customer loyalty and continuous intention and joint effect on the financial performance in the banking sector.

3.8 CONCLUSION

The formulated hypotheses in this research have been developed to show whether the better customer perception of the positive and negative factors of Fintech is in the banking service provider, the more likely it is for customers to reflect on expectations and satisfaction, leading to the behavioural intention of repurchase and loyalty. Also, the financial outcomes can be achieved only when customers are loyal and repeat purchasers. This study framework uses fourteen hypotheses to show the relationships between variables. The independent variables are an economic benefit, convenience, seamless transaction processing, security risk, legal risk, operational risk, financial risk. While confirmation is the dependent variable in relation to these factors, customer satisfaction is the dependent variable in relation to confirmation. Finally, repurchase intention and loyalty are dependent variables in relation to customer satisfaction and independent variables to financial performance. Drawing on the theoretical consideration and prior research of Fintech and behavioural intention, this chapter has developed hypotheses to examine the research questions developed in chapter one. The next chapter discusses the research methodology and research design to examine the hypotheses developed in this part.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 INTRODUCTION

The previous chapter introduced the conceptual framework for the proposed study. Based on the review of the existent Fintech theoretical consideration and prior research in chapter two and the research questions identified thereon, the theoretical framework and research hypotheses were developed in chapter three. The following section will discuss the methodological approach for the research introducing the quantitative phase. Fourteen sections will be included in this chapter. This chapter will commence by discussing the research paradigm, and methodology selection will be explained; then it will be followed by research design and justification for research approach and tool. Subsequently, the research population, the research context, the sampling frame, the sampling method, the data collection process, the questionnaire design will be discussed. Ethical consideration for the selected research design and questionnaires will be explained followed by an explanation of statistical procedures and data analysis. Finally, a conclusion will end the chapter.

4.2 The Research Paradigm and Methodology

Research has been defined as the systematic investigation (Burns 1997) or establish query through the study of materials and gathered data to establish facts and reach new conclusions through taking the initiative to 'describe, understand, control or predict a psychological or an educational phenomenon or to empower individuals in these sorts of contexts' (Mertens 2005). O'Leary (2004) argued that something simple to describe forty or thirty years ago has become more complex in recent years due to the noticeable increase in the range of the research, especially in the applied social sciences (p.8). Accordingly, it has been proposed that the nature of the research is influenced by the theoretical framework of the investigator, with a theory that shows relationships among or

between constructs to explain a phenomenon through bypassing events and trying to link it to similar events (Mertens 2005).

Research is a systematic plan to study a specific matter that enables investigators to move from here to there, where it can be defined as a set of questions that must be answered, and there is a set of results to answer these questions (Yin 2003). Researchers are required to move on certain phases including data collection and data analysis to reach desired results. Based on (Oliver 2010) views that research design often employs theoretically consistent methods and procedures to fulfil the research objectives to carefully collect and evaluate evidence to test the hypothesis and draw a conclusion.

Research is a complex process and is associated with a variety of expectations. Given this complexity, it may not be surprising that researchers base their goals on different beliefs about how the research is conducted and what the results should achieve (Krauss & Putra 2005). It has been proposed by Filstead (1979) that multiple needs addressed in a paradigm are: (1) it frames guidelines to experts, presenting key issues in a particular situation in any discipline; (2) it creates theories and frameworks to enable researchers to find solutions and reach conclusions; (3) it presents tools to gather data (i.e. methodology, tools and data gathering); (4) it presents the processes and methods that must be considered if any issues encountered. Therefore, the methodology should match the particular paradigm and different paradigms might require the use of different methodologies (Krauss & Putra 2005). According to Chua (1986), there are three dominant paradigms in finance research - the positivist, interpretivist and critical research, which could be selected by researchers to guide particular research.

4.2.1 POSITIVISM

In the positivist paradigm, the objective of the research is determined independently from researchers, including the facts that are determined by considering the phenomena in a fundamental way to examine its components and discover knowledge and thus verify them through direct measurements of phenomena (Krauss & Putra 2005; Healy & Perry 2009). In the positivist paradigm, data is always collected quantitatively and analyzed using statistical methods (Krauss & Putra 2005; Peta et al. 1998); Landry & Banville 1992). In addition, researchers always develop hypotheses, then try to present and prove assumed relationships by directing the null hypotheses (Krauss & Putra 2005). Through the positivist paradigm, another researcher should be able to conduct the same study in the same way and achieve results that are comparable between the two studies (Peta et al. 1998). Therefore, based on the above discussion, this study uses deductive reasoning – starting with a theoretical framework and developing towards empirical evidence using quantitative method in order to define set of mechanisms used to predict the general practices and behavior of human activity (Krauss & Putra 2005; Landry & Banville 1992).

4.2.2 INTERPRETIVISM

The interpretivist paradigm initiated with the philosophy of Edmund Husserl's phenomenology and Wilhelm Dilthey's and other German philosophers' investigation of the interpretive process (Mertens 2005, p.12, citing Eichelberger 1989). The interpretivist research paradigm believes that the reality of the phenomenon is complex, with multi-layered concepts which can have multiple interpretations. In studying a phenomenon, interpretivist research is used to understand people's experience within their social environment, while positivist research considers that all people share similar human behaviours (Walsham 1995). The interpretative researcher believes that reality is constructed socially through the researcher's view that the world is explained by what

people perceive it to be (Trauth & Jessup 2000; Walsham 1995; Lincoln & Guba 2000). Hence, these researchers are interested in exploring the lived experience of humanity (Lincoln & Guba 2000).

The interpretivist researcher identifies what is essential to each individual and then becomes aware of each object that it's meaningful to individuals in general. This involvement allows researchers to explore socially constructed subjects based on the group of individuals' views (Trauth & Jessup, 2000). Hence, interpretivist involves refreshers to integrate human interest into the study, accordingly, interpretative researchers emphasize qualitative methods over quantitative analysis (Krauss & Putra 2005; Lincoln & Guba 2000). In general, this study tries to explain mechanisms and laws that can be predicted by using quantitative analysis. Hence, this is consistent with the application of the positivist paradigm, whereas, interpretivist paradigm focuses on exploring the context to obtain logical meaning utilizing qualitative approaches (Krauss & Putra 2005; Lincoln & Guba, 2000; Trauth & Jessup 2000). Therefore, it is not compatible with the objectives of this study.

4.2.3 CRITICAL THEORY

Critical research seeks to guide human rationality and brings social change through empowering people to have a better world for themselves (Krauss & Putra 2005; Healy & Perry 2000). Critical research achieves this approach by focusing on power, inequality, and social change. The critical paradigm has been linked to historical realism, in which historical realism views the reality of people's actions created and shaped by social, political, cultural matters (Guba & Lincon 1994, p. 110). Hence, realities are socially embedded under the internal influence. Accordingly, critical research believes that once people have surface delusions for what they are, they will consider the least internal force to change their lives. When superficial delusions affect people, they will

use the least internal force to change their lives (Krauss & Putra 2005; Healy and Perry 2000). The critical researchers present the research findings that lead to transformation through enabling realties to be examined considering historical, cultural and political stances. (Krauss & Putra 2005; Healy and Perry 2000). Critical researchers use both qualitative and quantitative methodologies in order to promote dialogical relations of the basic mechanisms to drive actions and events (Krauss & Putra 2005; Healy and Perry 2000).

The researcher chose not to use critical epistemology in this research, since the research purpose is to gather data quantitatively. Therefore, it would not be possible to collect data in an epistemological setting. Furthermore, the researcher's motivation for conducting the study is to explore aspects of positive and negative factors of using Fintech that influences bank financial performance through customer experience, customer satisfaction and loyalty. Hence, this study chooses the positivist paradigm.

4.2.4 JUSTIFICATION FOR USING THE POSITIVIST PARADIGM IN THIS RESEARCH

The key aim of this research is to explore the impact that consumer perceptions of positive and negative factors of using Fintech has on customer experience (through the confirmation of expectation), customer satisfaction, repurchase intention and customer loyalty as well as the overall association to bank financial performance. In accordance with the various theories and frameworks to explain customer behaviour, the researcher proposed a hypothesis-based framework. Based on the objective of the study to validate the research hypotheses, the researcher opted for using a positivist (quantitative) approach as this was more suited to the topic.

Hussey and Hussey (1997) proposed that the general procedure and practice in positivist research is to explore relevant theories, create a suitable theory model and formulate hypotheses. Thus, this research is established in accordance with the positivist approach instead of interpretivist principles.

Most prior studies have used quantitative methods to draw insights based on people's intentions and have not been linked with firm financial performance; hence, making it essential to comprehensively test the relationship. Most samples were small, conducted in developed countries and inhibit generalizability (Mbama & Ezepue 2018; Ryu 2018; Belanche & Flavián 2019). Therefore, this study used the survey method to obtain a larger sample from a developing country so that results can be generalizable to a larger segment of the financial institutes in the banking sector. Also, financial technology consumer behavior is under-researched to be merely handled by a quantitative research method. Finally, the positivist approach suits the proposed study to have a clear theoretical, economic and financial data collection (Hussey and Hussey, 1997). Accordingly, this study adopts the positivist paradigm as it is the most appropriate to address the research objectives and hypotheses. Prior studies in consumer perception towards technology in the banking sector are considered positivist paradigm like Al-Malkawi, Mansumitrchai & Al-Habib 2016; Mbama & Ezepue (2018); Ryu 2018; Belanche and Flavián (2019). Hence, this supports the use of this paradigm in this study.

4.3 RESEARCH DESIGN

Research design has been referred to as the general approach explaining the way the researcher intends to answer the research questions, detailing the sources of data, data collection methods and data analysis (Saunders, Lewis & Thornhill 2012). Hair et al. (2003) explained the research design as the research master plan in determining the type of data to be collected and the method to be

used, as well as sampling methods. Hence, the research design is a framework that enables researchers to find answers to the raised research questions in relation to the philosophical discussion, present validity, reliability and generalisability of results and thus establish a general theoretical approach (Chua, 1986; Galliers and Land 1987; Mingers 2001; Chen and Hirschheim 2004).
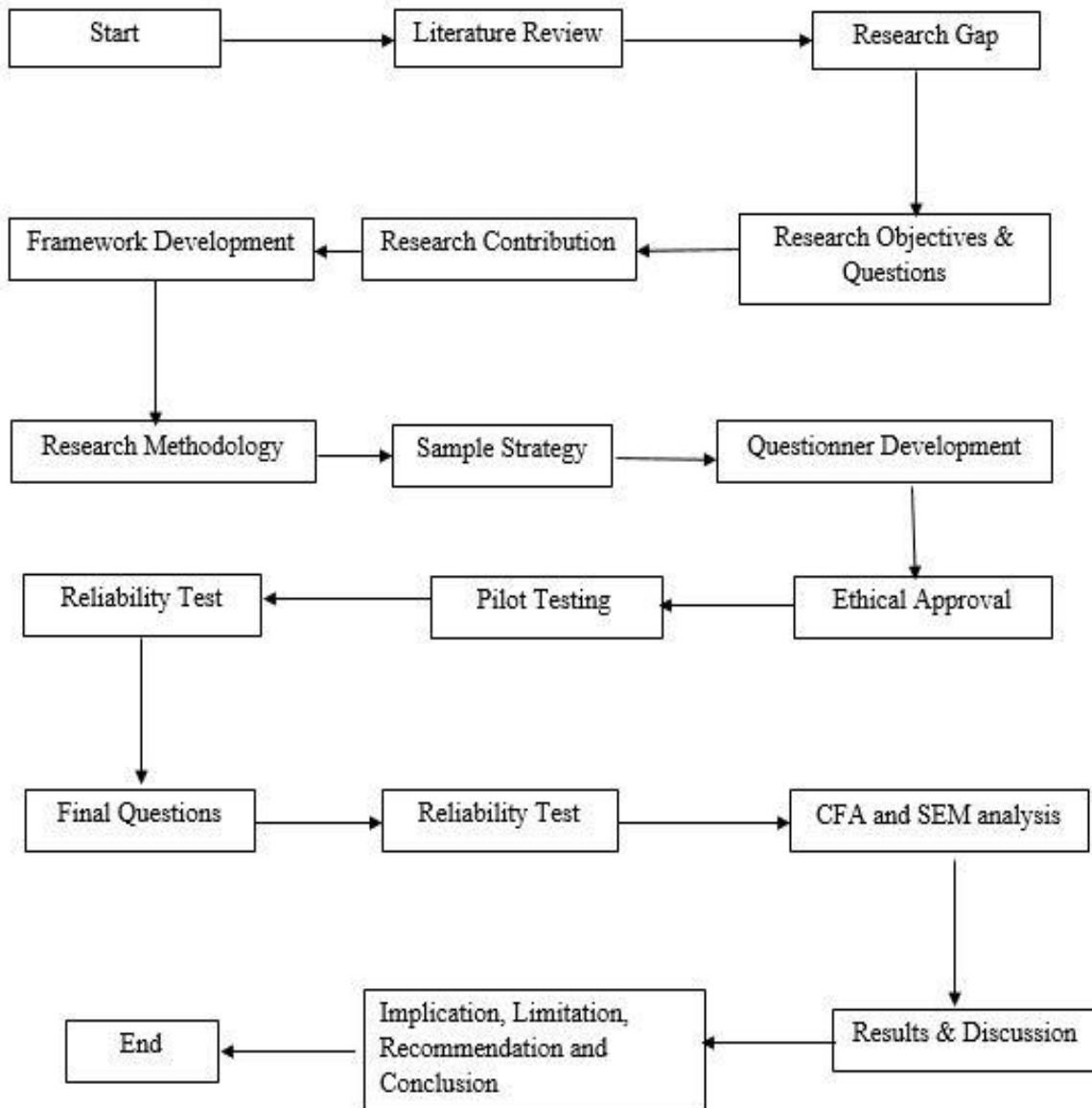
Figure 4.1 Research Design

Based on the literature on research design, three types were identified: exploratory, descriptive, and explanatory design (Cooper & Schindler 2001). For researchers to address the research objectives, sometimes using three types of research is essential. Burns and Bush (2002) stated that the researchers use all three types of research designs at various stages. Figure 4.1 outlines the research process, which explains the research design of the current study. At the primary stages of the study, the researcher applied exploratory research to collect information on the research problem, identify the gap and formulate hypotheses. Thus, as presented in the previous chapter, the hypotheses were outlined in accordance with previous studies and related literature; and the research purpose and problem were determined.

At the next stage, the researcher considers a descriptive research design to identify the participants, data frequencies, means and standard deviations. Descriptive research is essential to explain the correlation between research framework constructs (Zikmund 2000). Researchers pointed out that descriptive research designs are quantitative research method that attempts to collect quantifiable data used for statistical analysis of the population sample (Burns & Bush 2002; Churchill and Iacobucci 2004; Hair 2003). Multiple researchers noted out that there are two basic types of descriptive research; Cross-sectional and longitudinal (Malhotra 1999; Burns & Bush 2002; Hair 2003). Cross-sectional research methods require collecting data from a defined population sample at a specific point in time in which participants asked structured questions concerning their beliefs, thoughts and actions (Hair 2003; Neuman 2007). Longitudinal research observes the sample within a given timeframe either short or long period (Burns & Bush 2002).

In this research, a cross-sectional technique is used as opposed to a longitudinal method. Thus, data is collected from the specified population at one point in time. The technique is the most suitable since the search is not aiming to identify patterns. A survey method is used because this

type of method can specifically provide an understanding of participants' thoughts and opinions (Yin 1994). Moreover, it can complement the robustness and generalizability of findings to the entire population that enables the researchers to generate conclusions (Creswell 1994). Furthermore, the survey method is generally, faster, cheaper and can be distributed to a large sample of the population (Churchill 1995; Sekaran 2000; Zikmund 2003).

The researcher's key objective is to explore the correlation among the main research constructs. Data was collected from participants to address the research problem. In this study, an online survey technique was applied to reach an enormous number of Fintech customers in the banking sector.

This present study applies a two-stage Structural Equation Modelling (SEM). The first step is required to assess the measurement model overall fit, factor analysis, reliability and validity of constructs. Confirmatory factors analysis (CFA) is used for this. At the second stage, this research uses the SEM model to test the strength of the connections between the research model's latent constructs. Therefore, SEM allows the researcher to analyze which observed variables are good indicators of the latent variables.

4.4 RESEARCH POPULATION

Sample selection has a profound impact on the final quality of the research (Morse 1991). This relationship has been explained in quantitative research connecting the sampling method with the reliability, validity and generalisability of the study. Thus, in quantitative research, a key characteristic of the sample must be representative of the targeted research population. Hence, the selection of an adequate and appropriate sample is critical to ensure that the findings of the study are fairly accurate and applicable to the population from which the sample is drawn. This refers to the sample's representativeness. It has been noted that researchers should consider sample

representativeness in their studies since it allows generalisability of the findings (Sarantakos 1998). As representativeness develops, findings become more reliable, generalisable and the research quality increases (Morse 1991). To support the process of representativeness of the sample, statistical techniques determine the adequacy of the sample size. Onwuegbuzie and Collins (2007) pointed out that the adequate population for the research is a particular group that the researcher wants to focus on. It is the accumulation of groups that the researcher wishes to get findings from to draw inferences and generalize results. It is impossible to study the entire population as there are time and resource constraints (Singleton & Straits 2005).

The chosen population in the present study is United Arab Emirates banking customers aged 21 and above, who are residents in the country and have a bank account. Targeting a particular age group is a critical factor in this study since utilizing Fintech products and services in the banking sector requires an independent income and the understanding of the functionality of Fintech channels is critical in order to get the best response results. Also, to ensure the target population fully understood the survey and fit the target group initial screening questions are asked to determine whether they used or are using Fintech provided by their banks and select the type of Fintech services. If the responses were negative, they would not be allowed to participate in the survey. The research employs a cross-sectional approach and collects data from a specific point in time. The exact population size is unknown and cannot be confirmed. Zafar et al. (2019) pointed out that it is difficult to obtain probabilistic samples in the United Arab Emirates.

4.5 SAMPLING FRAME

A sampling frame is crucial in probability sampling because if the sampling frame is not drawn appropriately from the population of interest, the frame cannot address the research problem (Oates

2005). Oates (2005) added that generalisations can be made 'only' to the actual population defined by the sampling frame. Smith et al. (2005, p.505) defined a sampling frame as 'a physical listing of the whole population elements of people that might reasonably be expected in a survey, from which researchers choose a sample. After identifying the research population, the researcher chooses the relevant sampling frame. A sampling frame is known as a critical task to the researcher to make it as close as possible to the identified population elements (Blair, Czaja & Blair 2013). In the proposed research, the sample must be representative and accurate to limit bias; hence, a significant correlation must be between the sampling frame and the research population. Furthermore, the sampling process must be drawn based on the determined sampling frame and effectively select research participants. Possessing a Fintech transaction with a UAE bank makes research participants eligible for this study. Thus, the research sample must be selected from those who were bank consumers and also users of Fintech platforms.

4.6 SAMPLING TECHNIQUES

Oates (2005) described sampling techniques as methods considered by the researchers to assure participants being distinguished which are most likely to enrich the research. It was also asserted by Thornhill, Saunders & Lewis (2009) that two key sampling processes exist: probability and non-probability sampling. (Figure 4.2 Sampling Techniques below).
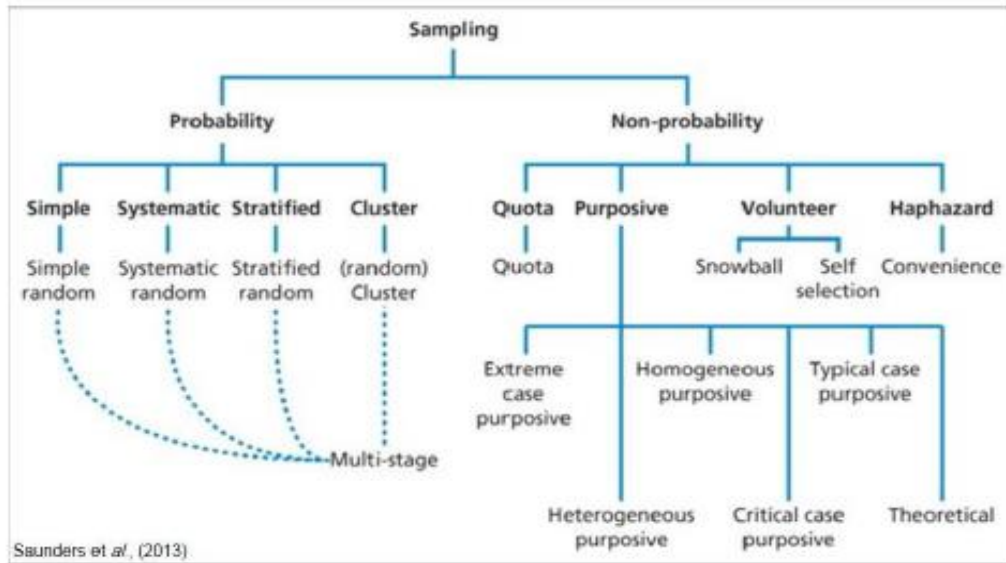
Figure 4.2 Sampling Techniques

(Source: Saunders et al. 2013)

Coulston et al. (2012) pointed out that probability sampling requires that everyone within the population of interest has the same probability of being chosen to take part in the research. On the other hand, non-probability sampling requires that the subject selection in the research is not approximated. Numerous advantages of probability sampling include: The results can be generalized to the entire population, and a representative sample is achieved from the entire population. However, the main drawback of this approach, demands a significant increase in the researcher's cost and time (Saunders, Lewis & Thornhill 2012). Non-probability sampling's main advantages are; low sample size, fewer costs and less time. However, the study gathered results using a non-probability sampling technique. In other words, the researcher is not assured to what extent the research sample is representative of the population of interest. Despite non-probability samplings faults, it is widely used for most research studies due to the related cost and time constraints (Oates 2006).

Saunders, Lewis & Thornhill (2012) demonstrated that probability sampling is the most reliable method used to draw conclusions and make plans. Oates (2006) contended that probability

sampling may be carried out using different techniques such as random sampling, systematic sampling, stratified sampling and cluster sampling. Random sampling is crucial in probability sampling; where participants in the research are randomly selected. Hence, every individual within the population is equal to be chosen with no characteristics. Although participants in the stratified sampling were chosen randomly. However, there must be some particular traits that should be met in the selection process. For example, research needs to have one thousand students to be interviewed, and 40% must be postgraduates. Contrastingly, systematic sampling requires participants to be selected from a larger population, selection is made randomized, fixed at the start on an interval basis. Cluster sampling is mainly used to group participants based on census tracts or countries.

Malhotra, Nunan and Birks (2017) use various non-probability techniques such as snowball, quota and convenience sampling. Participants in the research are not selected randomly. Snowball sampling starts with a small number of participants, and then the number gradually increases based on necessity. In quota sampling, the researcher identifies individuals for participation and willingness to take part. This might generate a researcher bias. Convenience sampling is manifested in the fact that the researcher systemizes the basis of selecting participants within the population of interest (Coulston et al. 2012). It was seen that convenience sampling is the most used technique in research due to the lowest cost of getting a sample (Shavelson, Webb & Rowley 1992).

For generalizing the findings, the random sampling technique is considered as the most valid technique (Pruchno et al. 2008) and this study will use random sampling. Below section provide brief description of random sampling to support researcher choice to use in this study.

4.6.1 JUSTIFICATION FOR USING RANDOM SAMPLING TECHNIQUE IN THIS STUDY

This research adopts a probability sampling technique using random sampling, the main approach of the research is to have access to a wide selection of Fintech customers in UAE banks, this method can provide every Fintech user with the same probability in participating in the survey. Plus, it enables the researcher to choose the size of the target participants and gather data. Additionally, random sampling is being the most widely used among probability sampling (Hair et al. 2003) as it is not possible to include every subject in the study because the population is (in)finite (Explorable 2009); however, it ensures the participation of target participants. Also, it is frequently used in marketing and management research; thus, studies by (Zhou et al. 2019; Mbama & Ezepue 2018; Keisidou et al. 2013); Liang 2008) all used this method of sampling.

The purpose of designing the survey is to measure users' continuous intention of using Fintech and being loyal to the financial firms; hence, responses were collected if the users had used Fintech. Random sampling allows researchers to provide accurate data analysis of the subject matters collected with the least margin of error. Olken (1986) claimed that the random sample method can reflect on the entire population and allows the generalizability of the findings (Pruchno et al. 2008). Random sampling provides fairness to the research by allowing everyone within a defined target market to have an equal chance of being included in the research. Most researchers argue that random samples are regarded because of researching subjects that are easily accessible to the researcher (Explorable 2009).

Simple random sampling method produces a low bias that enables to get findings that can apply to the entire population. This is the rationale behind using this method by most researchers (Pruchno et al. 2008). Random sampling was also known as an unbiased surveying technique,

where the target population needs to meet certain criteria, such as geographical factors, easy accessibility, availability at a given time as well as the willingness to participate in a sample (Nechval & Nechval 2016)

The target population is Fintech users in the banking sector in the United Arab Emirates. It is assumed that the banks would not share information of their customers who are dealing with Fintech within the bank, so in this case, it is problematic to reach those customers. Thus, random sampling is the most appropriate in this case. The target group here is unique, assuming multiple problems can arise in surveying them. Hence, a simple random method can allow researchers to manage available resources and ensure the reliability of the collected data.

4.7 SAMPLE SIZE

The sample size is an important consideration in any research study. It has been indicated that the size of the sample depends on the sampling frame, data analysis technique and financial consideration (Malhotra 1999). Hence, when the researcher determines the sample size, financial and statistical issues are essential to consider. While a large sample size may help to reduce sampling error in statistical analysis, a large sample size makes analysis complex (McDonald & Wilson 1999); and a balance needs to be achieved with the associated costs and time involved in the data collection phase (Malhotra 1999). Bartlett et al. (2001, p.50) see that using an adequate sample size with consideration of high-quality data collection results in getting reliable, valid and generalizable results.

It is challenging to determine the sample size since the sampling process depends on the overall population size, level of certainty, a statistical method used and margin of errors (Saunders, Lewis & Thornhill 2016). As has been asserted by Saunders, Lewis and Thornhill (2016) a large sample size allows researchers to better determine the reliability of the results and representative of the

population for implementation, as it requires a lot of time and effort. Jackson (2001, 2003) opined that sample size has a limited impact on model fit and recommend a minimum sample size of 200 using SEM analysis.

Anderson and Gerbing (1988) suggested that, in general, SEM requires a sample size between 150 to 200 respondents an adequate sample size; sizes between 400 – 500 respondents are much better and easier for the model to give accurate findings. Bentler and Chou (1987) defined sample size in SEM by respondents to independent value ratio should be (5:1). Furthermore, Zafar et al. (2012) and Chen et al. (2012) suggested ten respondents for each parameter by the 10:1 ratio. In this proposed study, 52 items are proposed making the minimum adequate sample size as 260 and 520 responses are considered to be ideal.

Also, Kothari (2004) recommended that the sample size of research needs to be large and representative of the population to allow for the generalization of results. Comrey and Lee (1992) and Tabachnick & Fidell (2001) suggested a scale of sample size adequacy: 300 participants is an adequate sample size, whilst 500 subjects are much better. However, larger sample size was recommended due to the possibility of modelling misspecification, complicity, or non-normality of data and reducing parameter estimator bias (Hair et al. 2003).

The final sample used in the present study is 590 respondents, indicating an overall usable response rate of 97% (see appendix C).

4.8 DATA COLLECTION PROCESS

Drawing from the research motive of this study: 1) to understand consumer behaviour towards Fintech and 2) to study the effects of consumer behaviour of Fintech utilization to the financial performance of service providers. In order to fulfil the first motive: - a web survey has been used to collect data from this study; specifically, the researcher used Google drive software – an

internet-based survey that allows the researchers to create free online surveys for academic purposes. Google drive program is accessible through a particular link/URL for creating surveys free of cost. The URL can be shared easily with participants and allow for the researchers to track participants' responses. In this research the researcher posted the online survey on Facebook, Twitter, LinkedIn, WhatsApp and other social networks. The potential target participants in this study are (21 years+) banking customer's residents in the UAE, having at least some previous experience with Fintech available in the financial institution. The researcher has distributed the questionnaire to various social networks connected to the researcher, and they were requested to share the questionnaire URL/content with their contact groups to reach more potential respondents. Therefore, the usage of social networks is a tool to distribute the survey and URL to respondents rather than administer the questionnaire. Furthermore, the Google drive program provides a secure platform for the collected data which does not allow the access of a third party except the survey creator who is, in this case, the researcher. In addition, the researcher is aware of the individual respondent's privacy and security of responses as per the British University of Dubai Research Ethics Protocol. Thus, data protection is considered.

The growing use of social media in carrying out online surveys for academic purposes has been well regarded and considered (Matute, Polo-Redondo & Utrillas 2016; Sohn 2017). The advantages of using online surveys distributed using social networks are numerous: surveys are useful and effective in reaching participants. A large number of academic researchers have used web-based surveys in exploring consumer behaviour (Belanche, Casaló & Flavián 2019; Sohn 2017; Stewart & Jürjens 2018; Keisidou et al. 2013; Mbama & Ezepue 2018). Also, online surveys enable researchers to reach target respondents regardless of the demographic barrier.

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Importantly, cost-effectiveness and efficiency in delivering, completing and collecting respondents using online surveys.

In addition to the fact that on-line based surveys have benefits, Sincero (2012) pointed out some disadvantages; including:

- Absences of interviewer administration;

- Inability to engage participants to complete the survey;

- Inability to reach challenging population;

- Survey fraud;

- Might lead to biased data due to wide.

Furthermore, to meet the second motive of this research, firm performance is examined using secondary data source which is known for their sufficiently to justify the research purpose (Choy 2014). Financial performance data concern 2019 of banks that customers have specified of using Fintech and later collected through annual reports published in 2020. Hence, public listed banks both local and private financial institutes, operated in the United Arab Emirates, offer Fintech products and services to the consumer are shortlisted and included in the study.

4.9 QUESTIONNAIRE DESIGN

The main responsibility of the researcher is to check, edit and create questionnaires to fulfil the needs of the study. While designing the questionnaire, the researcher considers many aspects such as survey length and question-wording (Brace 2018). Saunders, Lewis and Thornhill (2016) pointed out that checking and editing questionnaire reduces participants' bias and enhances reliability. A survey is created to collect relevant data for this study and investigate the correlations between positive and negative factors, confirmation, customer satisfaction and loyalty, repurchase

intention among bank customers using Fintech. The questions are in the form that pertained to the customer's actual behaviour and intentions. The survey uses closed-ended questions and scaled-response questions, to reduce the bias of participants' understanding of questions and predisposition.

The questionnaire consists of three parts: the first part is the identification of the research purpose. The second part is about the participant's demographic factors such as age, gender, education, income, etc and the third part consists of the 52 questions. Before posting the questionnaires, pilot testing is considered to avoid any misunderstanding and ensure that instruments are normally understood and reliable to be employed in the final study. All questions are measured on a seven-point Likert scale except for bank financial performance and customer profile. 'One' indicated a strong disagreement whilst 'seven' indicated a strong agreement. A copy of the questionnaire can be seen in Appendix B.

4.9.1 JUSTIFICATION FOR USING LIKERT SCALES

The current study applies a scaled-response scale to enable participants to choose their level of agreement against each item (Alreck & Settle 1995). The scaled response is called a Likert scale. It is considered to be the most popular and common survey format to gather data from respondents. Preston and Colman (2000) suggested that Likert scale is likely to be used in self-administered surveys to obtain data. The researcher can use Likert scale to determine participants' opinions and attitudes by using rating scales such as 'agree' or 'disagree' (Preston & Colman 2000; Chan-Olmsted and Chang 2006).

4.10 OPERATIONALIZATION OF VARIABLES

Operationalization of variables is a crucial step for the researcher to consider before developing data collection tool (Brace 2018; Hellerstein 2008). The operationalization process describes precisely what researchers intend to research and refer to the variables in the study. Thus, this chapter explains the meaning and measurements of the variables. The common approach of operationalization of constructs is to have two or more indicators of each construct (Ilieva, Baron & Healey 2002) and all constructs must be operationalized in terms of scale item and type (Hinkin 1995).

In this study, the survey consists of four parts: the first part is about key participant's attributes (age, education, income, etc.) and the second part focuses on data on positive and negative factors related to Fintech (economic benefit, convenience, perceived service quality, seamless transaction processing, perceived operational risk, perceived security risk, perceived privacy risk, and perceived legal risk). The third part aims to verify confirmation and customer satisfaction. The fourth part contains constructs on repurchase behavioural intentions and customer loyalty. The researcher developed the questionnaire using prior literature due to the suitability of UAE financial institutions context, as well as to achieve the best response results to meet the research aim, objectives and hypotheses.

4.10.1 ECONOMIC BENEFITS

Economic benefits are related items that deal with the cost of transactions, applied interest rates and pricing of services that are established by firms (Featherman & Pavlou 2003; Mohammed et al. 2019; Levesque et al. 1996; Lee & Cunningham 2001). Therefore, items 1, 2 and 3 are specific extrinsic motivational characteristics for the consumer to use Fintech in the banking sector. In addition, item 4 was included to obtain the extent to which Fintech utilization worth customer extra

effort in dealing from a cost-pricing point view (Lee & Cunningham 2001). These three items allowed measuring the extent to which Fintech is utilized by the consumer for the perceived economic /save money factor (Ryu 2018). Therefore, based on the measurement of prior studies (Featherman & Pavlou 2003; Lee 2009) asking respondents ― "whether customers perceive economic benefit by using Fintech products and services, and it is worth the extra effort it takes". Table 4.2 shows the details of items of Economic benefit.

Table 4.1: Items for Measuring Economic Benefit

Variables	Items	Scale	Sources
Economic Benefit	1. Using Fintech is cheaper than using traditional financial services. 2. I can save money when I use Fintech. 3. I can use various financial services at a low cost when I use Fintech. 4. To get an economic service, Fintech is worth the extra effort it takes.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Featherman and Pavlour (2003); Lee (2009); Roy and Sinha (2014)

4.10.2 CONVENIENCE BENEFIT

Convenience benefit is referred to the level of convenience in financial services when using Fintech towards, time, place, executions that users feel and lower the cognitive emotional and physical burdens for a user (Kim & Bernhard 2014; Seiders et al. 2007; Okazaki & Mendez 2013). Consistent with the measurement used by Kim and Bernhard (2014), Seiders et al. (2007), Okazaki & Mendez (2013), respondents are asked to indicate to what extent the Fintech perceived convenience in using financial services. Therefore, items from 1 to 6 measure the effects of convenience factor on user experience in using Fintech. The details are shown in Table 4.3.

Table 4.2: Items for Measuring Convenience Benefit

Variables	Items	Scale	Sources
Convenience Benefit	1. I can use financial services very quickly when I use Fintech. 2. I can use financial services anytime and anywhere when I use Fintech 3. I can use financial services easily when I use Fintech. 4. I believe Fintech eliminates the time-consuming application processes. 5. I believe Fintech provides convenience in financial service because it eliminates the need to have an intermediary or bank physical presence.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Okazaki and Mendez (2013); Kim and Bernhard (2014); Seiders et al. (2007

4.10.3 SEAMLESS TRANSACTION PROCESSING

In this study, seamless transaction processing is referred to the transaction-related benefit of using Fintech for money payments, money transferring, lending and investing (Ryu 2018; Abramova & Böhme 2016). The seamless transaction processing provided in Fintech transactions is a fundamental characteristic that makes traditional institutions like banks change the methods of transactions, especially in the financing process. It allows users to manage transactions on a cost-effective platform which results in simple and fast financial transactions (Chishti 2016; Zavolokina et al. 2016). Hence, for measuring seamless transaction processing, the present study applies the measurement developed by Chishti (2016) asking the respondents to ―determine whether Fintech has helped to faster transaction process digitally in financial services. The details of the measurement of seamless transaction processing are demonstrated in Table 4.3.

Table 4.3: Items for Measuring Seamless Transaction Processing

Variables	Items	Scale	Sources
Seamless Transaction Processing	1. I can control my money without the middleman when I use Fintech. 2. I can use various financial services at the same time (e.g. one-stop processing) when I use Fintech. 3. I can have peer-to-peer transactions between providers and users without a middle man when I use Fintech.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Chishti (2016)

4.10.4 PERCEIVED SERVICE QUALITY

Service quality referred to meeting and exceeding customer expectations, being an accessible and reliable source of transactions in financial platforms. In this study, service quality is viewed as the consumer's overall perceived evaluation and judgment on the quality of the services that are delivered through the internet provided in financial services in terms of meeting and exceeding users' expectations, accessibility and reliability of an application (Keisidou et al. 2013; Parasurman et al. 1988; Amin 2016; Ladhari, Ladhari & Morales 2011). Consistent with the measurement used by Parasuraman et al. (1994), Roca et al. (2006) and Oghuma (2016), respondents are asked to evaluate provided service quality in Fintech by reflecting on application user-friendliness, the efficacy of website or application using measurers from 1 to 6. The details of the measurement of perceived service quality are in Table 4.4.

Table 4.4: Items for Measuring Perceived Service Quality

Variables	Items	Scale	Sources
Perceived Service Quality	1. I feel comfortable in using Fintech functions and services provided by the bank. 2. The bank provides services with a sincere attitude when I face service and system problems related to Fintech. 3. Fintech information provided by the bank is accurate and reliable 4. The bank gives me prompt services when I use Fintech 5. The bank gives me the right solution to my request during service and system failures related to Fintech 6. The overall quality of Fintech services provided by my bank is excellent	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Parasuraman et al. (1994), Roca et al. (2006), and Oghuma (2016)

4.10.5 PERCEIVED OPERATIONAL RISK

Perceived operational risk refers to the potential loss due to security flaws or incidents of stolen passwords (Vasek et al. 2016; Grant & Hogan 2015), system's vulnerabilities and the irreversibility of Fintech transactions (Abramova & Böhme 2016; Eyal & Sirer 2014; Karame, Androulaki & Capkun 2012), and failed internal operational implementation systems and processes (Barakat & Hussainey 2013). Drawing from Barakat and Hussainey (2013), Grant and Hogan (2015) and Eyal and Sirer (2014), measures of operational risk are gathered. Respondents are asked to evaluate operational risk based on their experience of doing financial services in Fintech. The details of the measurement of operational risk are in Table 4.5.

Table 4.5: Items for measuring operational risk

Variables	Items	Scale	Sources
Operational Risk	1. When using Fintech provided by the bank I do not worry about losses due to application modification or weaknesses. 2. When using Fintech provided by the bank I don't worry about Fintech application lacks mechanisms to reverse wrong transactions 3. The bank is willing to solve issues when financial losses or financial information leakages occur of any transactions done via Fintech. 4. The bank responds to any financial losses or financial information leakages that occur for Fintech transactions.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Barakat & Hussainey (2013); Grant & Hogan (2015); Eyal & Sirer (2014)

4.10.6 SECURITY RISK

Security risk is viewed as the possible invasion of customer privacy and personal information which affects the effectiveness of transactions, thereby this is a critical concern to customers when using online for financial service (Cheung & Lee 2006; Casaló et al. 2008; Susanto et al. 2013). Definition of security risk in online transactions is the possible loss due to cyber-attack and fraud that compromise the security of the financial transactions; thereby, the cause harm to the user's transactions. Hence, this study looks at the effect of security risk on customers' experience when they use Fintech. The details of measurements are shown in Table 4.6.

Table 4.6: Items for Measuring Security Risk

Variables	Items	Scale	Sources
Security risk	1. The bank implements security measures to protect all of its Fintech users. 2. The bank has the ability to verify Fintech users' identities for security purposes. 3. The bank shows great concern for the security of any transactions done via Fintech. 4. I feel secure using Fintech services provided by the bank.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Cheung & Lee (2006); Casaló et al. (2008); Susanto et al. (2013)

4.10.7 FINANCIAL RISK

Financial risk is derived from the potential loss of money in the financial transactions of Fintech. Forsythe et al. (2006) included consumers' sense of insecurity regarding the usage of online payment, which has been evidenced as a major obstacle to mobile payment (Osturk et al. 2017). Therefore, similar to Featherman and Pavalou (2003) and lee (2009), respondents are asked to indicate the degree to which the financial institute perceives financial risk when users use Fintech. The details of measurements are shown in Table 4.7.

Table 4.7: Items for Measuring Financial Risk

Variables	Items	Scale	Sources
Financial Risk	1. The bank has the ability to identify financial and payment frauds on Fintech Transactions.	7-point Likert Scale: 1-Strongly disagree	Featherman & Pavlou (2003); Lee (2009)

Variables	Items	Scale	Sources
	2. The bank has the ability of interoperability with other bank services to reduce financial losses when I use Fintech	7-Strongly agree	
	3. I do not worry about financial losses using Fintech provided by the bank.		

4.10.8 LEGAL RISK

The legal risk is measured with the lack of laws and regulations, unclear legal status and lack of universal regulations and uncertainty on using Fintech for financial transactions derived by (Grant & Hogan 2015; Bohr & Bashir 2014; Abramova & Böhme 2016; Ryu 2018). This study uses a measure developed by Barakat Hussainey (2013) and Abramova and Böhme (2016), asking respondents to evaluate the legal risk of financial transactions when they used Fintech. Details are shown in Table 4.8.

Table 4.8: Items for measuring legal risk

Variables	Items	Scale	Sources
Legal Risk	1. My use of Fintech is confirmed due to the numerous regulations that the bank follows. 2. I think the availability of bank regulations makes Fintech transactions easy for all users. 3. There is no legal uncertainty for Fintech users. 4. It is difficult to use various Fintech applications due to the government and bank regulations.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Barakat & Hussainey (2013); Abramova & Böhme (2016)

4.10.9 CONFIRMATION

Hossain and Quaddus (2012) defined confirmation as the alignment between performance and expectation. Confirmation is the extent to which the actual use of experience confirms the initial expectation about the service. Confirmation of previous expectations can affect both the user's satisfaction and the service provider (Oliver 1980; Yoon & Zahedi 2002; Hossain and Quaddus 2012). According to Hossain and Dwivedi (2015), the confirmation stage is crucial for service offering providers because when the actual use of experience matches or exceeds the initial expectations at the confirmation stage; firms can convert customers from 'non-recurrent' to 'recurrent'. Hence, Table 4.9 shows two items adapted from Lin and Bhattacherjee (2008) which were used to assess consumers' confirmation of expectation on Fintech.

Table 4.9: Items for measuring Confirmation

Variables	Items	Scale	Sources
Confirmation	1. My experience with using Fintech is better than what I expected. 2. The service level provided by Fintech is better than what I expected. 3. The overall majority of my Fintech expectations were met.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Lin & Bhattacherjee (2008)

4.10.10 FAMILIARITY

Customer familiarity has been described in behavioural psychology by Gefen, Karahanna and Straub (2003, p.63) as a person's understanding of an entity, often based on previous learning, interactions, and experience of "what, who, how, and whilst of what is going on". A high level of familiarity affects enterprise relationships by lowering social uncertainty and growing the

knowledge of what's taking region in the present leading to a high level of satisfaction (Kumar 1996; Gefen 2000). Luhmann (1979) marked that familiarity reduces user uncertainty of expectation through the evaluation of the performance of what has taken place in the past. Familiarity connected with user previous consumption related to the experience that eliminates complexity, enables users to bypass all non-useful methods and facts which enable user's utilization in a less complicated and extra beneficial way for the entity. Subsequently, increased familiarity also improves other elements that are crucial in transactions mediated via IT, together with customer satisfaction, behavioral intention and being loyal to the entity. Accordingly, this study adopts familiarity measures developed by Gefen (2000) and previously used in consumer adoption of technology researchers (Zhou et al. 2018; Flavian et al. 2019).

Table 4.10: Items for measuring Familiarity

Variables	Items	Scale	Sources
Familiarity	1. I am familiar with the range of Fintech products offered by the Bank 2. I am familiar with Fintech through bank marketing channels or online social media 3. Throughout my life, I have had experience using Fintech through the bank 4. I have worked with or studied Financial Technology (i.e., artificial intelligence, blockchain. digitalization. etc)	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Gefen (2000), Belanche, Casaló & Flavián (2019)

4.10.11 CUSTOMER SATISFACTION

Customer satisfaction explained by (Oliver 1980), "satisfaction can be seen as a function of the expectation (adaption) level and perceptions of disconfirmation". Hence, in in-service markets, a

user expectation is positive when a service is performed as expected or negative when a service is performed poorly than expected (Trasorras et al. 2009). Since this study focuses on Fintech which is at an early stage of offering to the customer, the goal of banks is customer retention; which is typically driven by managing customer expectations in the offered services. Accordingly, this study incorporates measures adopted from prior studies of customer satisfaction on using Fintech (Levesque et al. 1996; Amin 2016). Details are shown in Table 4.9.

Table 4.11: Items for measuring Customer Satisfaction

Variables	Items	Scale	Sources
Customer Satisfaction	1. Considering everything, I am extremely satisfied with my bank Fintech products, services and transaction processing. 2. I am generally pleased with my bank Fintech services 3. I believe that I did the right thing when I chose to use fintech provided by my bank 4. The overall fintech services provided by my bank is excellent	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Levesque and McDougall (1996); Amin (2016)

4.10.12 REPURCHASE INTENTION

Repurchase intention is a person's positive attitude towards the company that leads to repeat buying behaviour (Zhou et al. 2009). Repurchase intention is associated with individual behaviours (Mbama & Ezepue 2018; Hossain & Dwivedi 2015; Yeong 2009), also it is conceptually essential to organization performance (Liang 2009; Maditinos et al. 2013). As it is

indicated by Liang (2009), positive customer repurchase intention and loyalty have the potential to increase organization income and lower costs, consequently better firm financial performance. Considering Fintech is a phenomenon of unprecedented growth across industries, which is having an impact on firm economic and labour domains (Acemoglu & Restrepo 2017), it is crucial to study customer repurchase intention to determine the level of technology advancement needed. Table 4.11 outlines the four items used to assess repurchase intention. These were adapted from Srivastava and Sharma (2013) and Hellier et al. (2003) studies.

Table 4.12: Items for measuring Repurchase Intention

Variables	Items	Scale	Sources
Repurchase intention	1. In the future, I will continue to use Fintech services provided by my bank 2. I prefer to use Fintech services offered by my bank 3. I predict I will not switch my current Fintech service provider 4. I would positively consider Fintech in my choice set	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Srivastava and Sharma (2009); Hellier et al. (2003)

4.10.13 CUSTOMER LOYALTY

The degree of customer loyalty regarding Fintech usage by their banks is measured by attitudinal and behavioural items derived by (Jacoby & Kyner 1973; Fathollahzadeh et al. 2011; Akhter et al. 2011; Klaus & Maklan 2013; Amin 2016; Trasorras et al. 2009). Attitudinal measurements focus on the customer's emotional attachment to the place that underlies purchasing motives and future actions (Fathollahzadeh et al. 2011; Klaus & Maklan 2013). While behavioural measurements reflect customers purchasing behaviours being loyal to the place through purchasing

history (Fathollahzadeah et al 2011; Akhter et al 2011). This study used the measures developed by Amin (2016); Fathollahzadeah et al (2011); Russell (2009) asking respondents to evaluate their emotional attachment to the firm, repetitive purchasing behaviour and effective word of mouth results in a high net profit to the place. Details are shown in Table 4.11.

Table 4.13: Items for measuring Customer Loyalty

Variables	Items	Scale	Sources
Customer Loyalty	1. I have positive things to say to other people about using Fintech in my bank. 2. I will recommend my bank to do Fintech to people who seek my opinion. 3. I would encourage friends and relatives to do financial services/business through Fintech in this bank. 4. I consider my bank as my first choice to do financial services via Fintech.	7-point Likert Scale: 1-Strongly disagree 7-Strongly agree	Fathollahzadeh et al. (2011); Amin (2016); Russell (2009)

4.10.14 FIRM PERFORMANCE

Sangwan et al. (2019) explored the path ahead for Fintech to streamline the impact of Fintech into stakeholders namely, consumers, fintech supporters, market regulators and service providers. On one hand, fintech offers benefits to consumers; however, it has introduced challenges to service providers since it threatens and challenges the established business models in terms of traditional financial services. Prior studies support those main financial goals pursued by firms of the service industry which refer to its profitability (Anderson, Fornell & Lehmann 1994; Keller 1993). All others are being equal. It is a realistic approach to measure the financial performance of a company using profitability ratios (Keisidou et al. 2013).

In service management research, financial ratios are used to reflect the relationship between customer experience and firm financial performance. For instance. Mohammed and Ward (2006) explored the relationship between customer perception of service quality and bank financial performance in adopting the new automated banking services in Australia. They used ROA and ROE to measure bank financial performance. Likewise, a recent study by Eklof et al. (2017) developed a model to examine the impact of customer perception of i.e. (product attributes, benefits, customer satisfaction, trust, commitment and customer behavioral loyalty) in firm financial performance. This study used profit margin, return on assets, return in operating net assets, and return on equity to measure financial performance. Hence, most of the practices supported using ROA, NPM and ROE as a common measure for financial performance. It is an accounting-based measure. The above studies linked customer experience with customer satisfaction and loyalty, which supports the purpose of this research.

As far as the researcher knows, Fintech researchers are slow to measure the effects of customer's experience of Fintech, customer satisfaction, loyalty and repurchase intention factors on the financial performance in the banking sector. Thus, the present research aims to fill this gap considering bank financial performance as the main outcome for this study. Hence, this study adopts the approach by Keisidou et al. (2013) to measure the financial performance of banks, using profitability ratios namely; return on assets or investments (ROA / ROI), net profit margin (NPM) and return on equity (ROE).

Banks' financial performance ratios were obtained using secondary data from the banks' published financial annual reports of 2020 are extracted and used to analyze bank profitability gained through usage of financial technology platforms. Every participant in the survey was asked to choose one bank that they consider as their main bank for Fintech services, and these banks' financial ratios

were included in the study. Accordingly, the financial ratios are used as dependent variables to investigate whether the banks' performance depends on their financial ratios which determine their performance. Hence, various statistical tests are employed to measure the relationship of the positive and negative factors related to Fintech, confirmation, customer satisfaction, loyalty and repurchase intention factors and how these results underpin the financial performance of banks.

4.11 PILOT TEST

Pilot test, (also called a 'pre-testing' or 'feasibility' study) is an important stage of any research design, is considered as a guide towards the development of the research plan (Prescott & Soeken 1989). Saunders, Lewis and Thornhill (2016) described pilot testing as a small-scale test of a particular research instrument (such as a questionnaire or interview) before the final full-scale study. The reason for that is to reduce possible issues that participants may face while completing the survey. Although pilot testing involves a smaller scale of participants for later use of larger groups, it provides feedback to develop the final (larger) study. Based on the feedback of participants on the pilot study, the researcher assesses the reliability and validity of the collected data to make adjustments, whereas it is appropriate to refine the questionnaire before using it for the final study.

Saunders, Lewis and Thornhill (2012) stressed the significance of a pilot study before its implementation on a larger scale. It is a crucial element of a good study, as it provides strength to the design of the survey before the real data collection starts (Prescott & Soeken, 1989). In piloting a study, the primary motive is to increase the likely success of the survey as it helps the researcher to test the reality on how the research process works, as well as identify if participants face any problem while responding to questions or refining a research question. Additionally, it guarantees

that the researcher might not face issues while analyzing and recording the data. Teijlingen and

Vanora (2018) outlined the following twelve reasons for conducting pilot tests:

- It helps to develop and test the sufficiency of research tools;

- It helps to assess the full-scale study of feasibility;

- It can design the research protocol;

- It can assess whether the research protocol is effective and realistic;

- It can determine the effectiveness of the sampling frame and method;

- It can identify the possible logistic issues that may occur using the proposed method;

- It can help in determining the study sample size by estimating the variability of outcomes;

- It assists in collecting preliminary data for which the study is carried out;

- It assists in predicting the need for resources (i.e. financial, staff) that might be needed for the proposed study;

- It helps to assess the applicable data analysis methods in the proposed study to eliminate any potential issues;

- It helps in creating the research questions and plan;

- It educates the researcher with the research procedure.

The key purpose of this pilot study is to examine the validity of the research instrument, namely

the questionnaire, and also highlight any issues related to the wording, format, grammar and length

of the questionnaire. Checking the comprehensibility and clarity of the survey questions was an

important element in order to guarantee the accuracy of the gathered data and a meaningful

analysis thereof. Peat et al. (2002) identified the following procedures to improve the validity of

the questionnaire when pilot tests were carried out:

- To conduct the pilot study the same way as the main study is carried out;

- To obtain participants' feedback that can be used to remark unclear or difficult questions;

- To monitor time taken to complete the survey that can be used to decide if the time is reasonable;

- To amend questionnaire by removing all unnecessary, difficult, or ambiguous questions;

- To check if all questions were answered and reword any questions that were not answered;

- To evaluate answers to questions in terms of whether each question gives an adequate answer;

- To amend overall survey questions by shortening or revising.

A pilot test was carried out in July 2020 to assess the reliability and correct errors of the questionnaire. Participants were over 21 years of age, resided in the United Arab Emirates and were consumers of financial firms. After developing the initial questionnaire, a pilot study was conducted among Fintech users, the researcher identified the participants in order to be representative of the culture and demography of the target population in the final study. Fink (2003) recommended that the researcher in the pilot study must consider the involvement of most representative participants of the target population. Likewise, Hussey and Hussey (1997) indicated that, for the successfulness of pilot testing, respondents with similar characteristics and demographics to the target population are required.

The present study used three methods to validate the survey questions. Firstly, three university professors at the British University of Dubai reviewed the questionnaire and then a final draft was produced. All the professors were requested to comment on the survey and highlight any issues. They suggested that some changes be made concerning the length of the questionnaire and add

additional items on participants' personal information namely; length, frequency of Fintech usage and number of bank visits in the last months. As a result of the feedback, minor changes were made to the wording of the questions and additional two questions on the respondent's personal information were included. The survey was further refined by pilot testing the instrument by 12 participants within the sample frame. Whilst some researchers recommend a pre-test of 30 participants (Hunt et al. 1982), others recommend a sample of 12 participants as a rule of thumb for a pilot study (Julious 2005). Each participant took between 10 to 20 minutes to complete the questionnaire. Finally, twelve surveys were completed and collected; subsequently, the statistical software SPSS version 23 was used to test whether the study instruments are valid and reliable. Appendices A and B show the final survey and the accompanying cover letter.

4.11.1 THE DEMOGRAPHICS OF THE SAMPLE

Table 4.14 summarizes the characteristics of the participants; 12 participants took part in the pilot study. In total, 66.7% of the participants were male participants, whereas female participants made up the remaining 33.3%. In terms of the participant's age range, about 58.3% of the respondents fall into the 25 and 34 age group, while 25% were aged between 35 and 44. Furthermore, 16.7% only of participants fell into the 45 and 54 age categories. As far as the respondents' level is concerned, 8.3% indicated that they had a diploma degree, whilst 50% had a bachelor's degree, and the remaining 41.7% had master's degrees.

The pilot study results indicated that the participants were customers of 5 major UAE banks. 58.3% of participants possessed an account with the Emirates Islamic Bank, 16.7% with Emirates NBD Bank, 8.3% with HSBC Bank Middle East Limited, 8.3% with First Abu Dhabi Bank, and finally, 8.3% possessed an account with Abu Dhabi Commercial Bank (ADCB). In terms of the duration

of time for which customers stayed with each bank, 50% of the participants have been customers for 6 to 10 years, 33.3% for 1 to 5 years and 16.7% for more than 11 years.

Regarding the most used type of Fintech services, 25% of the participants used Apple pay, while 8.3% used Samsung pay, 16.7% used Fintech in stock trading, 16.7% used mobile remittance, 8.3% used mobile payment and the remaining 8.3% got personal financing. In terms of the used Fintech channel to conduct banking transactions, 66.7% of the participants used mobile banking, while internet banking made up the remaining 33.3%.   In terms of customer experience of using Fintech, 66.7% had used Fintech for more than 24 months, while 16.7% had used Fintech for 3 months, 8.3% within 12 months and 8.3% used Fintech for 18 months. The frequency of Fintech use among participants indicated that 50% of participants used Fintech on a daily basis, followed by 25% on weekly basis and 25% on monthly basis.

Table 4.14: Pilot study demographic data

Demographic characteristics	Frequency	Percent
Gender:		
Male	8	66.7
Female	4	33.3
Age:		
25 – 34	7	58.3
35 – 44	3	25
45 – 54	2	16.7
Education:		
Bachelor's degree	6	50
Master's degree	5	41.7
Diploma	1	8.3
Bank Name:		
Emirates Islamic Bank	7	58.3
Emirates NBD Bank	2	16.7
First Abdu Dhabi Bank	1	8.3
Abdu Dhabi Commercial Bank	1	8.3
HSBC Bank	1	8.3
Length of stay (with bank):		
1–5 years	4	33.3
6–10 years	6	50
11–15 years	2	16.7
Fintech type		
Apple pay	3	25
Samsung pay	1	8.3
Mobile payment	3	25
Mobile remittance	2	16.7
Personal financing	1	8.3
Stock trading	2	16.7
Most used Fintech channels		
Internet banking	8	66.7
Mobile banking	4	33.3
Fintech period of use		
~3 months	2	16.7
~12 months	1	8.3
~18 months	1	8.3
~Over 24 months	8	66.7
Fintech frequency of use		
Daily	6	50
Weekly	3	25
Monthly	3	25

4.11.2 RELIABILITY AND VALIDITY OF THE INSTRUMENTS

The measurement model was assessed in the pilot study results to ensure that the measurements contained in this study were valid and reliable, and it is often used to establish scale's reliability. According to the recommendations of Hair et al. (2014) and Wu and Chuang (2010), Cronbach's alpha is the main indicator of data internal reliability, and values must exceed 0.7. Testing the scale reliability used in a study is a crucial factor that the researcher needs to consider to improve the values of alpha for the data if required. Peter (1979) suggested that internal consistency reliability would be different based on the type of scale implemented in the study. A reliability coefficient of 0.5-0.6 is reported to be satisfactory to indicate reliability (Peter 1979). However, serval arguments made that the basic research reliability of over 0.7 is sufficient to indicate the reliability of a construct (Craig et al. 2003) or must exceed 0.6 (Garg et al. 2014). Hence, the reliability cut-off point has been a matter of controversial debate. Hinton et al. (2004) proposed four cut-off points for Cronbach's alpha; namely excellent reliability (if value is 0.90 and above); high reliability (value 0.70 - 0.90); moderate reliability (value 0.50 - 0.70); and low reliability (value 0.50 and below). Hence, during the initial stage of the research, the researcher analyzed the pilot study reliability results by examining the Cronbach's alpha value using the statistical software, SPSS (Statistical Package for the Social Sciences, 23). In general, the researcher has not identified low reliability on constructs. Hence, Cronbach's alpha enables the researchers to add items to the construct or decide to remove items in order to improve the scale reliability measurement.

The Cronbach's alpha for the pilot study was 0.967, which collectively measures Fintech positive and negative factors, confirmation, familiarity, customer satisfaction, followed by repurchase intention and finally customer loyalty. Thus, reflecting high reliability of the data. As can be seen in Table 4.15, every item has been measured using the Cronbach alpha tool to determine each

cluster item's reliability, and the results showed appropriate internal reliability of the data ranging from 0.717 (legal risk) to 0.956 (financial risk). The results demonstrated reliability of each cluster were: economic benefit (0.874), convenience benefit (0.909), seamless transaction processing (0.901), perceived service quality (0.919), operational risk (0.949), security risk (0.902), financial risk (0.956), legal risk (0.717), confirmation (0.938), familiarity (0.798), customer satisfaction (0.935), repurchase intention (0.720), customer loyalty (0.913).

Table 4.15: Analysis of Pilot Study Reliability Test

Constructs	Cronbach's alpha
Economic Benefit	0.874
Convenience Benefit	0.909
Seamless Transaction Processing	0.901
Perceived Service Quality	0.919
Operational Risk	0.949
Security Risk	0.902
Financial Risk	0.956
Legal Risk	0.717
Confirmation	0.938
Familiarity	0.798
Customer Satisfaction	0.935
Repurchase Intention	0.720
Customer Loyalty	0.913
All Items	0.967

4.12 ETHICAL CONSIDERATIONS

The researcher exhibits awareness of the research ethics related to question formulation, clarification and design research topic, and approach individuals to collect, store and analyze data, and write up research findings in an ethically responsible way. Saunders et al. (2009) argued that "Ethics refers to the appropriateness of your behaviour in relation to the rights of those who become the subject of your work, or are affected by it". Similarly, the researcher completes and signs the research ethics consent form in accordance with the British University of Dubai Code of ethics before starting data collection. Before posting the questionnaires, a cover letter (see Appendix A) supplements the questions explaining the nature and purpose of the study and the time for completing the questionnaire. Importantly, respondents were informed about the confidentiality of the study and all access to reports of the study. Also, respondents were informed to get a copy of the study summary they require to provide their contact numbers. Besides, the researcher avoids accessing personal data and confidential information without the participant's permission.

4.13 STATISTICAL PROCEDURE AND DATA ANALYSIS

The most important step in the research is to choose the most suitable statistical technique required for the research. Zeithaml, Parasuraman and Malhotra (2000) outlined the important components of research such as objectives, questions, aims, data characteristics and features of statistical tools as a crucial step to be monitored by the researchers. The proposed research is carried out by using SPSS version 23.0 software to analyse data; the reason for this is that SPSS statistical provides a collective statistical package to perform statistical calculations which are required and used by

researchers. SPSS enables to do the following: descriptive, correlation, reliability and validity analysis, in addition to Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). Hence, the statistical analysis in the proposed research makes use of SPSS version 23 to conduct systematic investigations to find answers to questions and to enable drawing appropriate conclusions. The purpose of this specific statistical package that it gives the key calculations that are required. These encompass the following: descriptive and reliability analysis, correlation techniques, confirmatory factor analysis (CFA) and SEM. These statistical tools of analysis are crucial to drawing appropriate conclusions. Also, SPSS is known for its ease of use and user-friendliness; in other words, it requires minimal effort to use. The planned statistical methods and tests for this study are described below.

4.13.1 DESCRIPTIVE STATISTICS

Descriptive statistics are defined by Burns and Bush (2006, p.7) and Kassim and Bojei (2002) as the process of collecting and presenting data in some manner that can be analyzed and interpreted easily, ultimately giving a meaningful description of the data. This is the type of analysis that considers describing and summarizing the data through giving graphical presentations, tabulated frequencies, measures of central tendency (i.e. mean, median, and mode) and variability analysis (i.e. variance, standard deviation and interquartile range) (Burns & Bush 2006, p.7). In the present study, descriptive statistics are used to calculate, describe and summarize the collected research data set logically, helping to present a comprehensive overview of the sample characteristics considered in this study. Hence, performing exploratory data analysis of the research is considered in this study among factors which are related to Fintech, confirmation, customer satisfaction, customer loyalty and purchase intention and how the results underpin financial performance ratios.

4.13.2 CORRELATION ANALYSIS

In quantitative studies, testing correlation analysis is crucial to evaluate the degree of correspondence between variables (Burns & Bush 2006, p.7). In investigating the relationship through correlation analysis, the researcher aims to examine the strength of the connection between variables by showing the coefficient of these relationships (Robson 2002). The correlation coefficients between variables are measured through scale value between 0.20 to 0.91; 0.20 being the least, 0.20 to 0. 0.40 deemed to be weak, 0.40 to 0.71 deemed to be moderate, 0.71 to 0.91 deemed to be strong (Bagozzi & Edwards 1998). Generally, researchers are interested in testing hypotheses on a correlation matrix, testing correlation between variables is essential (Robson 2002). In this study, the researcher considers using the Pearson correlation coefficient to measure the strength between variables. The purpose of this is to evaluate the extent relationship between variables, by identifying the high and weak correlation between variables enabling to demonstrate interdependence between them. Hence, the paired correlation between the research data factors is a crucial measure to consider based on the aim of the study.

4.13.3 RELIABILITY

Cronbach alpha coefficient is the measure of the extent to which we assess the reliability of a measurement scale with multiple elements (Hayes 1998). The reliability and internal consistency would be different based on the type of scales implemented in the study (Peter 1979). Cronbach alpha ranges from 0 to 1 based on the level of homogeneity perceived within items. According to Peter (1979), the reliability coefficient can be between 0.50 - 0.60 which is satisfactory to indicate reliability. However, serval arguments have been made that basic research reliability exceeds 0.70, which is sufficient to indicate the reliability of a construct (Hair et al. 1995). Hence, if the Cronbach alpha value exceeds 0.70, then the measure is deemed to be extremely reliable (Craig et al. 2003).

In the present study, the Cronbach alpha coefficient measure is considered to establish an evaluation threshold.

4.13.4 VALIDITY

Validity is commonly used in research to measure the extent to which a construct adequately measures what is supposed to measure (Burns and Bush, 1995). Validity tests can be applied for both constructs and content. Content, convergent and discernment validity are explained hereunder.

4.13.4.2   CONTENT VALIDITY

Cooper and Schindler (2001) describe content validity as the extent to which the item on the test can measure what is designed to measure. This research considers the importance of content validity in the following way:

- Churchill and Iacobucci (2004) asserted that when constructs are taken from prior studies where validity measures are considered in research. In this study, research variables were extracted from management and marketing disciplines and were deemed to be valid since being assessed in previous research.

- The researcher has considered conducting a pilot study that involves a sample from the target population.

Construct validity is also a measure of the degree to which a hypothetical survey measures the component based on the theoretical concept applied in the research (Malhotra 1999). Also, this study considers both convergent and discriminant validity.

4.13.4.3   CONVERGENT VALIDITY

Convergent test is often considered in sociology and behavioural sciences. It refers to the degree to which two variables within constructs are related and have a shared variance (Hair, Bush &

Ortinau 2006). Hence, measurement of the convergent validity of every construct is essential and can be achieved through the use of factor loadings, variance extracted (AVE), and construct reliability (CR). In this research, convergent validity is met by the measurement of Cronbach's alpha coefficient which is used for reliability, and the model is considered to be 0.7 or above. Similarly, AVE must exceed 0.5 and reliability must exceed 0.7.

4.13.4.4   DISCRIMINANT VALIDITY

Hair, Bush & Ortinau (2006) asserted that discriminant validity assesses the relationship between one latent construct and other constructs. Distinct validity is measured by comparing AVE for constructs against a squared inter-construct correlation matrix (SIC).

4.13.5 CONFIRMATORY FACTOR ANALYSIS (CFA)

CFA is used to test the hypothesis of items that pertain to a specific factor (Ishiwatari et al. 1999). CFA is referred to as a type of multivariate statistical method that is used to assess the effectiveness of variables in measuring constructs. CFA is a tool used to describe variability and correction among variables and to determine the reduction of a large number of variables into a few factors (Ishiwatari et al. 1999). There are two types of factor analysis exploratory and confirmatory factor analysis; both of them are used in this study. Exploratory factor analysis is used to present the interrelationship among items and group them in one component factor presenting a unified concept. While confirmatory factor analysis is used to test the hypotheses of items that pertain to a specific factor (Ishiwatari et al. 1999). Both of them are tested and measured in the present study. By measuring CFA, the researcher can test the hypothesis related to the relationship between the latent variable and the corresponding latent constructs or indicators (Fox 2010). Noar (2003) deemed that CFA is a well-recommended tool by theoretical and empirical literature, enabling to test hypotheses using statistical tools and analyze relationships. Byrne (2006) claimed that CFA is

a part of SEM, called covariance shape that can be assessed using SEM software, which indicates relationships between latent variables and their respective constructs. SEM has two parts; the first part of SEM is that it links observed variables to smaller units of latent variables. The second one is a structural component, or a path model showing how the latent variables are connected through both recursive and non-recursive patterns. Hence, the researchers can conduct CFA, alone, path analysis or run full SEM.

Truxillo (2003) mentioned the subsequent 8-steps techniques to assess CFA:

1. Develop a conceptual framework to support a specific framework;

2. Define the contextual framework using equations and pictures;

3. Allocate framework identities, so that the precise values can be developed for parameter measurement and to ensure positive values of stages of freedom (DF) for model evaluation;

4. Data collection;

5. Describe the preliminary descriptive statistical analysis along with scaling, removed values and collinearity elements;

6. Check the framework parameters;

7. Analyze model fit;

8. Discuss the findings;

To support the conduct of CFA, the following procedure needs to be considered by the researcher.

1. To have detailed literature: explaining the constructs measured on the study. In the present study, the researcher included dimensions of using Fintech perceived benefits, perceived risks, confirmation, familiarity, customer satisfaction, customer loyalty, customer behavioural

intention when developing the theoretical framework. This can be maintained through developing hypotheses related to the effects of positive and negative factors of using Fintech on consumer intention and loyalty through confirmation, familiarity impact and customer satisfaction.

2. Develop a measurement framework theory: Uni-dimensional concept needs to be considered in CFA, which falls between the construct error variance. For proper measurements and results, there must be three factors per construct and a minimum of four constructs.

3. Planning results: A measurable model must be set indicating loading estimates for each construct.

4.13.6 EVALUATE THE MODEL OVERALL VALIDITY

The objectives using exploratory factor analysis and confirmatory factor analysis are the central important procedures to determine the research model goodness of fit before structural equation modelling (SEM) and path analysis. The objective of this research is to present the causal relationships among theoretical constructs and determine the contributions of customer competencies on firm performance. Accordingly, SEM is used for these studies to model the relationships between determined measurements and their latent variables, and route evaluation models to check causal relationships among variables (Fornell & Larcker 1981). This approach is preferred among business researchers consistent with Hair, Ringle and Sarstedt (2011) for explaining the cause and impact of construct relations among latent variables. SEM is either covariance-primarily based (CB-SEM) or partial least squares (PLS-SEM) approach. The CB-SEM approach discounts the difference between the theoretical and the predicted covariance matrix and involves the fulfilment of some assumptions which include normality of records and the presence of minimum sample length. However, PLS-SEM maximizes the latent constructs

explained variance, and underlines an effective estimation approach, while the assumptions of CB-SEM are violated, and the research goal is primarily the illustration of structural relationships. This study aims to confirm the relationships between theoretical constructs, and the SEM is applied for the model estimation and hypothesis testing (Hair et al. 2012).

Hair et al. (1998) asserted that CFA has three main indices measure: absolute, incremental and parsimonious. Absolute indices are used to evaluate the overall model fit. These include root mean square error of approximation (RMSEA), standardized root mean squared residual (SRMR) and goodness-of-fit index (GFI). Incremental fit indices are also known as comparative indices (Miles and Shevlin, 2007). These include indices of Normed Fit Index (NFI) or Comparative Fit Index (CFI). Adjusted Goodness-of-Fit Index (AGFI) is part of parsimonious indices. To determine the validity of the proposed model, the researcher considered the importance of evaluation of overall model fit by determining Indices of Goodness of Model Fit as suggested and agreed scholarly. Table 4.14 indicates the model fit indices and their cut-off for acceptance. Thus, the suggested acceptance indices below are simply a guideline for a researcher to analyze and interpret.

Table 4.16 Indices of Goodness of Fit Model

Model Fit Statistics	Level of acceptance
Comparative Fit Index (CFI)	>0.9 (Browne & Cudeck, 1993)
Root Mean Square Error of Approximation	<0.08 (Browne & Cudeck 1992) <0.05 (Browne & Cudeck, 1993)
Standardized root mean squared residual (SRMR)	<0.05 (Browne & Cudeck, 1993)
CMIN / DF	< 5.0 (Carmines and McIver, 1981)
Goodness of Fit index (GFI)	>0.90 (Browne & Cudeck 1992)
Parsimony Comparative Fit Index (PCFI)	> 0.8 (Hair, Bush & Ortinau 2006)
Normed fit index NFI	>0.90 (Hair, Bush & Ortinau 2006)
90% Confidence interval for RMSEA	Upper limit < 0.08 (Browne & Cudeck 1992)

4.14   STRUCTURAL EQUATION MODEL (SEM)

The final step following the constructs measurement reliability and validity is model hypothesis testing. This research uses maximum likelihood estimation in SEM to best analyze the relationships between model constructs of the conceptual framework, test the hypotheses, and answer the research questions. Hence, this analysis demonstrates the significance of relationships among variables and explain the contribution of Fintech consumer competencies towards firm performance. Bagozzi (1980) asserted that SEM is a multivariate statistical analysis tool that is used to analyze structural relationships and -considered in management research. This technique combines factor analysis and general regression that is used to analyze structural relationships between independent and dependent variables for a large sample size. SEM also considers the hypothetical latent constructs due to groups of observed variables, and it allows to analyze the relationships between the observed and latent variables. It was claimed by MacCallum and Austin (2000) that SEM is suggested to use theories where investigations and assessments are limited. Also, SEM is among the assessment methods that have been widely considered in social and Behavioral Science (MacCallum & Austin 2000).

SEM has two elements: the first element is a measurement used for CFA and SEM. Explained as a multivariate regression that is used to assess relationships between observed dependent variables and groups of latent variables. The second element that SEM is a structural framework that enables the study of relationships as follows: the relationships between observed variables, the relationships among observed factors, the relationships between observed variables and factors that do not appear as key factors. As in which these relationships integrate the linear regression equation for developing a constant observed dependent variable or a combination of censored normal, censored-inflated normal, censored-inflated normal regression equations for binary, or

ordered categorical observed dependent variables. The variables are taken into consideration to be a collaboration of multinomial logistic regression equations regarding the categorical established variables and Poisson, or 0-inflated Poisson regression equations, for counted observed structured variables (MacCallum and Austin 2000)**.**

4.14.1 REASONS FOR USING SEM

SEM is a statistical instrument that combines factor analysis with regression enabling the evaluation of the relationships between multiple constructs (Hair, Ringle & Sarstedt 2011). SEM is extensively used to explore probably correlations between different factors and to establish any inter-linked managerial issues. SEM was used for investigations of theories applied to a specific domain, which is limited (MacCallum and Austin 2000). SEM is broadly used in research that investigates consumer behaviour, management, human, marketing, banking services and supply chain management as it involves a large population (Caruana, Pitt & Berthon 1999; Dawes 2000; Elangovan 2001; Cano, Carrillat & Jaramillo 2004; Gounaris, S.P Stathakopoulos, V Athanassopoulos 2003; Dinev & Hart 2006).

SEM is deemed to be combining a multiple regression and factor analysis. This means that it enables researchers to raise dialogue concerning the links present in a single framework of evaluation and combines the rationality of multiple regressions and enables path analysis. Hoyle (1995) explained that SEM consists of a measurement and structural model that is used to validate the theoretically-driven model through assessing relationships and hypotheses. Bentler (1980) and Cheng (2001) considered that it could as a result efficiently perceive the existence of mediating variables that exist between exogenous (independent) variables and endogenous (dependent) variables. Furthermore, it could explain the direct and indirect consequences of individual exogenous variables. For example, maybe customer satisfaction impacts customer intention

behaviour or loyalty, whereas an indirect impact can be caused by other factors that affect exogenous variables on an endogenous variable when mediating factors are applied.

The reasons for choosing SEM in the present study are outlined below:

According to Hair, Ringle and Sarstedt (2011), SEM can explore numerous dependent relationships, and the extent it is influenced by independent variables, while each variable has a different impact on the dependent variable. Also, Tabachnick and Fidell (2006) stated that SEM enables to test both theories and hypotheses. Thus SEM is considered in this study to test the relationships between independent and dependent variables; namely: exogenous variables (such as economic benefit, convenience, perceived service quality, seamless transaction processing, perceived operational risk, perceived security risk, perceived privacy risk, and perceived legal risk) and endogenous variables (such as confirmation of expectation, customer satisfaction, repurchase intention and customer loyalty) and triangulate the relationships in the factor analysis. Also, the moderating factor familiarity is considered on testing through SEM to assess the extent of its impact on late customer satisfaction and customer behavioural intention.

SEM is deemed to be a useful statistical tool to measure relationships between constructs considering the minimal chance of error (Hair, Ringle & Sarstedt 2011). Also, SEM is well suited to use in social and behavioural sciences. Hence, based on the research motive to study customer behaviour towards Fintech, the use of SEM is justified.

4.15   CONCLUSION

In this chapter, the research methodology of the proposed study was presented. This research makes use of a quantitative research approach to gather data in order to investigate the relationship between constructs and validate the research model. The use of survey as the main methodological

instrument for gathering data to analyze bank financial performance. The questionnaire design, sampling process and sampling size were outlined. This present study tends to apply a two-stage Structural Equation Modelling (SEM) for data analysis. The first step is to assess the measurement model, factor analysis, reliability and validity of constructs. Confirmatory factors analysis (CFA) is used for this. At the second stage, this research uses the SEM model to test the strength of the connections between the research model's latent constructs. Therefore, SEM allows the researchers to analyze which observed variables are good indicators of the latent variables. The subsequent sections discuss data analysis and the research findings.

CHAPTER FIVE: RESEARCH RESULTS

5.1 INTRODUCTION

This chapter will introduce the data analysis of the questionnaire which was previously outlined in the previous chapter. This study used the Statistical Package for the Social Sciences (SPSS) for data analysis and selected Analysis of Moment Structures (AMOS) to conduct Structural Equation Modelling (SEM) for the analysis of the data collected from the questionnaire. SEM was performed in this research for hypotheses testing of the proposed model, meditation analysis and validate the performance. This chapter presents the final research results of the SEM, exploratory factor analysis (EFA), confirmatory factor analysis (CFA). Besides, the preliminary data analysis is the data preparation process like assessing missing values, normality test, outliners, collinearity test and descriptive statistics. Section 5.2 presents the preliminary data analysis. Section 5.3 presents exploratory factor analysis. Section 5.4 provides a common method bias test. Section 5.5 reports the results of the correlation tests. Sections 5.6, 5.7. 5.8 and 5.9 present the results of Confirmatory Factor Analysis, Validity Assessment, Convergent Validity, Discriminant Validity, Structural Equation Modelling, Goodness-of-fit indices, Hypothesis testing and moderation analysis. Finally, the chapter concludes with Section 5.10 providing a chapter summary.

5.2 PRELIMINARY DATA ANALYSIS

5.2.1 CHECKING MISSING VALUES

Missing data typically refers to the absence of values within one or more study variables included in a dataset. The development of this issue occurs as a result of participants considered not responding to the study survey. This issue represents a greater challenge to the researcher during

data analysis, especially if there is a high number of missing values as it challenges the generalizability of study findings. Moreover, missing data can yield biased estimates, and can reduce the statistical strength of the study leading to inaccurate inference about the data. According to (Hair et al. 2014), missing value data analysis is an effective approach to accommodate missing data, and prevent drawing invalid conclusions about the study. Researchers recommended if the number of cases of missing values was small; researchers may omit these values from the study (Hair et al. 2014, 2010). For this study, the number of missing values cases was extremely small estimated by less than 3%. Therefore, a total of 610 responses were collected from the target population explained in chapter four using online survey method that posted on Facebook, Twitter, LinkedIn, WhatsApp and other social networks. After screening and filtering out incomplete responses, of which 20 were classified as incomplete and eliminated. A total number of 590 responses were included and used for data analysis, indicating an overall usable response rate of 97% (see Appendix C). From the obtained, results we can observe that the missing values were not the problem for this data analysis.

5.2.2 CHECKING FOR OUTLIERS

Outliers present data points in a dataset that are distant significantly from all other observations in the sample. Overall, an outlier sets outside the overall dataset distribution. The presence of outliers may indicate variability in the measurements or experimental error on the dataset, whereby it causes problems in statistical analyses that could distort the results of the study. Many tools have been developed to detect and handle outliers (Hair et al. 2014). The univariate detection method is largely applied in this research area, and the researcher in this study chose to apply it. The univariate detection method enables the identification of extreme values. This method allows detecting outliers by looking at every single variable individually. Univariate outliers can be

observed as values that are set too far from the central distribution. In univariate outliers, the data are converted to z-scores; basically, z-scores are standard values and based on the benchmark of the z-score; then researchers will identify which score is an outlier. Researchers have considered outliers whenever they are more extreme than the mean, presenting values of 2.5 or higher for 80 or fewer observations. Hair et al. (2014) argued to extend these cutoff values to 4 for more large samples. In this research, the threshold values were less than 4. Thus, this result highlights the absence of outliers and confirms that all observations are preserved for further analysis.

5.2.3 ASSESSING DATA NORMALITY

It is essential to examine data normality to determine the statistical methods required for data analysis (Kim, 2013). Normality test indicates whether a sample of data fits standard normal distribution presented by the shape of data distribution. There are various statistical methods to assess the normality of data. According to Hair et al. (2014) the most popular methods in testing normality for small to medium sample size (n < 300) are Shapiro–Wilk test and Kolmogorov–Smirnov test. Despite the importance of these tests however may give unreliable tests for a large sample size (Lee, Park & Kim 2013). Skewness and kurtosis statistics showed its applicability to use for both small and large sample sizes greater than 300. Thus, this research will use skewness and kurtosis using to determine data distribution in terms of the degree of normality since it considers a large sample size of 590 respondents. Also, a large sample size is deemed to reduce the impact of the non-normality of data variables (Hair et al. 2014). According to this, this research will consider the z-value of skewness and kurtosis indices, and in case these indices exceed the Z - critical value for a two-tailed test 2.58 at 0.01 significance level, 1.96 at 0.05 or 1.645 at 0.10 then the distribution is non-normal (Hair et al. 2014).

This research study has used normality tests ascertained on skewness and kurtosis indices to determine data distributions. Skewness and kurtosis measures must be less than or equal to 2 and 7 respectively as suggested by Lee, Park and Kim (2013) and Curan, West & Finch (1996). Figure 14 shows normality tests of these research variables. The histograms are roughly normal and bell-shaped, assuming data normality. The results of normality tests are as follows: the economic benefit absolute value of skewness and kurtosis are -1.160 and 1.711, respectively. The convenience benefit absolute values of skewness and kurtosis are -1.319 and 2.288, respectively. The seamless transaction processing absolute values of skewness and kurtosis are -1.145 and 2.450, respectively. The perceived service quality absolute value of skewness and kurtosis are -1.072 and 1.260 respectively. The operational risk absolute values of skewness and kurtosis are 0.323 and -0.865, respectively. The security risk absolute value of skewness and kurtosis are -0.999 and 1.197, respectively. The financial risk absolute values of skewness and kurtosis are -0.155 and -0.997, respectively. The legal risk absolute value of skewness and kurtosis are -0.118 and -1.090, respectively. The confirmation absolute values of skewness and kurtosis are -0.810 and 0.946, respectively. The familiarity absolute values of skewness and kurtosis are -1.246 and 1.370, respectively. The customer satisfaction absolute values of skewness and kurtosis are -0.630 and 1.249, respectively. The repurchase intention absolute value of skewness and kurtosis are -1.099 and 1.410, respectively. The customer loyalty absolute value of skewness and kurtosis are -1.175 and 1.992, respectively. Hence, all the items in the data were considered for further analysis.
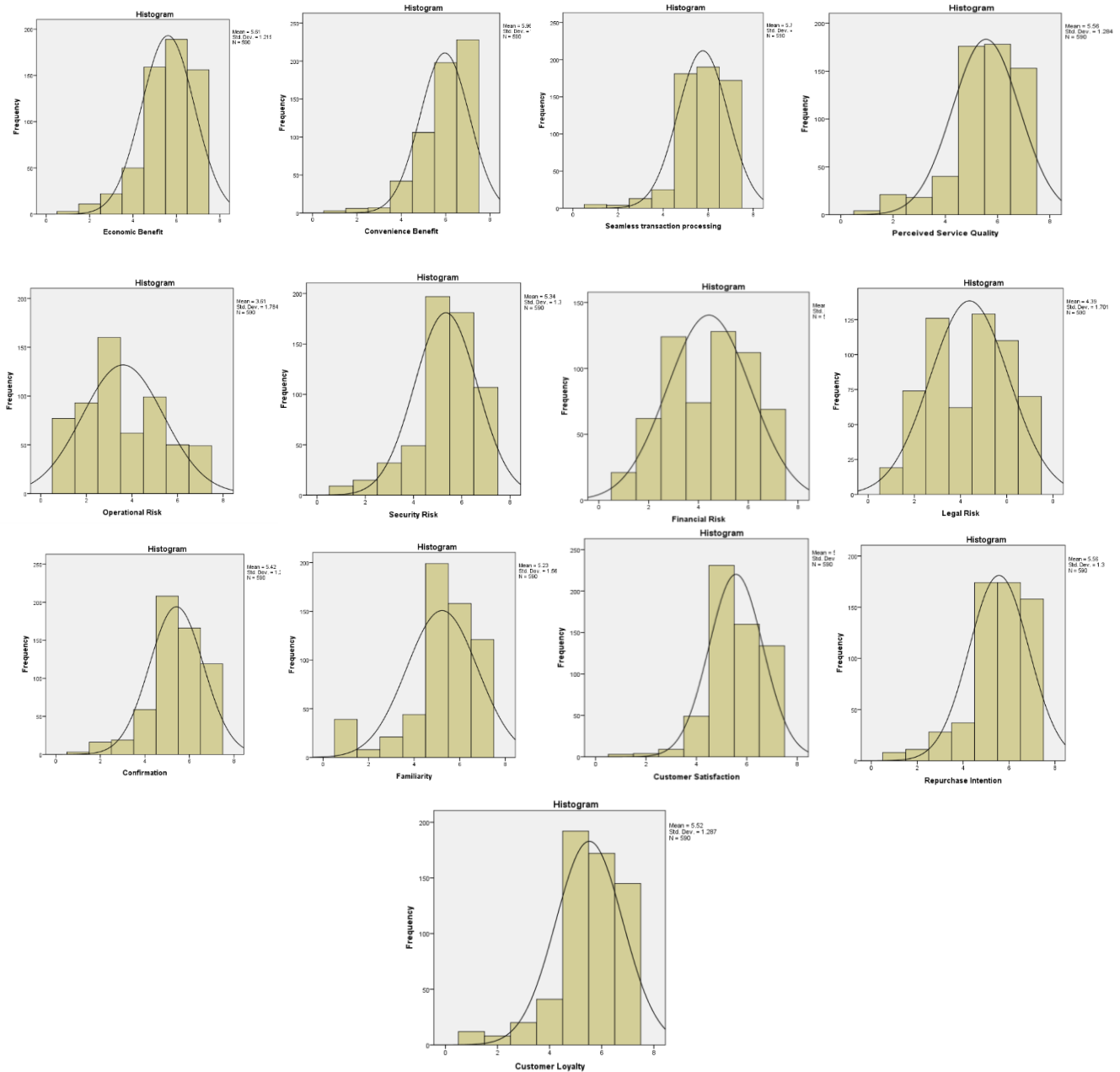
Figure 5.1: Normality, skewness, and kurtosis of research variables

5.2.4 DEMOGRAPHIC PROFILE

This research gathered data from retail bank customers of the United Arab Emirates between December 2020 and March 2021. In total, 590 questionnaires were gathered in this study using

an online survey. All questionnaires were valid for further analysis. The present study considers

using SEM to evaluate the proposed model, so there is a necessity to have at least an adequate

sample size to give accurate analysis (Anderson and Gerbing 1988; Hair et al. 2010). Comrey

and Lee (1992) and Tabachnick and Fidell (2001) suggested a scale of sample size adequacy in

SEM: a sample size of 100 is often considered small, 200 is considered fair, 300 considered is an

adequate sample size, whilst 500 or higher is very good and much better. According to this, the

sample size of this study is almost 'very good' since 590 surveys were gathered. The below

section represents some of the profile data descriptive analysis results of 590 respondents.

Table 5.1 shows the gender distribution of 52.5% males and 47.5 % females, enabling us to

consider almost equal male and female opinions.

Table 5.1 Gender of Respondents

Gender		Frequency	Percentage
Valid	*Male*	310	52.5
	Female	280	47.5
	Total	590	100.0

Table 5.2 presents the respondents' age group. The results show that 37.3% of the respondents

were within the age group of 45-54, 28.1% within the age group 35-44, 21.2% within the age group

of 25-34, 7.1% within the age group of 55-64, 5.1% within the age group of 21-25 and 1.2% over

the age of 65.

Table 5.2 Age Group of Respondents

Age	Frequency	Percentage
21 - 25 years	30	5.1
25 - 34 years	125	21.2
35 - 44 years	166	28.1
45 - 54 years	220	37.3
55 - 64 years	42	7.1
Over 65	7	1.2
Total	590	100.0

Table 5.4 shows the respondent's educational level. The figure shows that 35.8% of the respondents have a bachelor's degree, 34.9% have a master's degree, 23.1% have a doctorate degree, 3.6% have a high school and 2.7% have a diploma. In general, about 96% of the respondents hold a college or university level education, making them digitally literate to use digital banking services for financial transactions

Table 5.3 Education Level of Respondents

Education Level	Frequency	Percentage
High School	21	3.6
Diploma	16	2.7
Bachelor's Degree	211	35.8
Master's Degree	206	34.9
Doctorate Degree	136	23.1
Total	590	100.0

Figure 5.2: Demographics
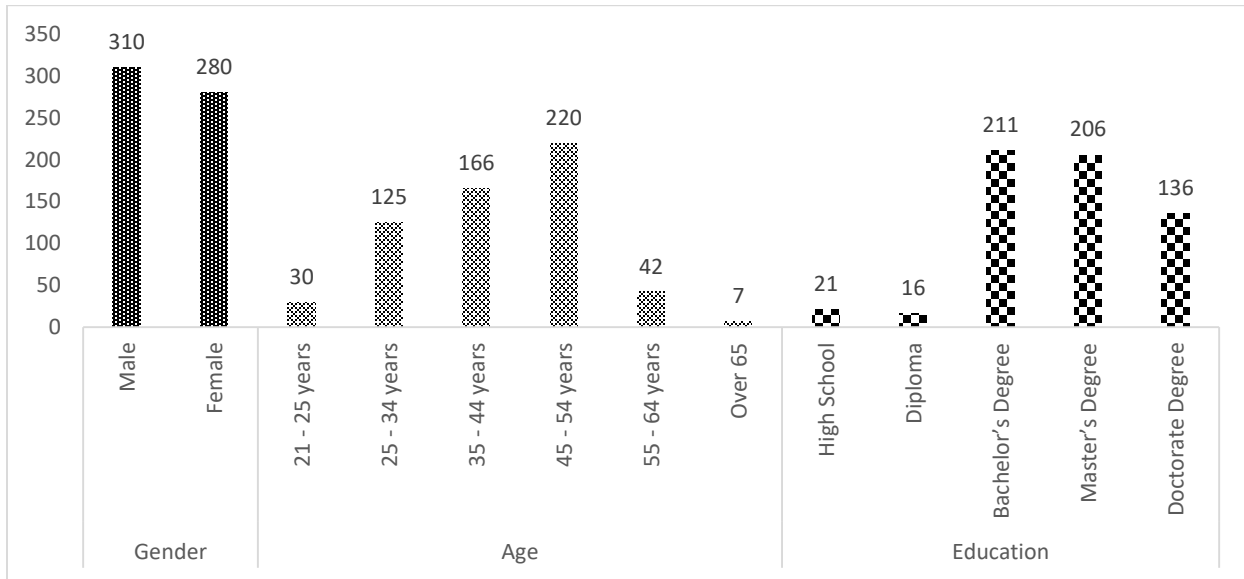
Table 5.4 shows the names of the respondents' banks. The results show that 25.1% of banks are with Mashreq Bank, 13.9% with Emirates NBD Bank, 13.4% with Abu Dhabi Islamic Bank, 11.5% with Dubai Islamic Bank, 10.9% with Emirates Islamic Bank, 8.1% with HSBC Bank, 5.8% with Abu Dhabi Commercial Bank, 5.3% with First Abu Dhabi Bank, 2.9% with RAK Bank, 2% with Standard Charted Bank, and 1.2% with National Bank of Fujairah. The results also reflect upon the size of these banks in the UAE, regarding the availability of diversified financial inclusion enabling customers to access wide financial services.

Table 5.4: Name of Respondents' Bank

Respondents' Bank	Frequency	Percent
Abu Dhabi Commercial Bank P.J.S.C	34	5.8
Abu Dhabi Islamic Bank P.J.S.C	79	13.4
Dubai Islamic Bank P.J.S.C	68	11.5
Emirates Islamic Bank P.J.S.C	64	10.9
Emirates NBD Bank P.J.S.C	82	13.9
First Abu Dhabi Bank P.J.S.C	31	5.3
HSBC Bank Middle East Limited	48	8.1
Mashreq Bank P.S.C	148	25.1
National Bank of Fujairah PSC	7	1.2
RAK Bank	17	2.9
Standard Charted Bank	12	2.0
Total	590	100.0

Figure 5.3: Respondents' Banks
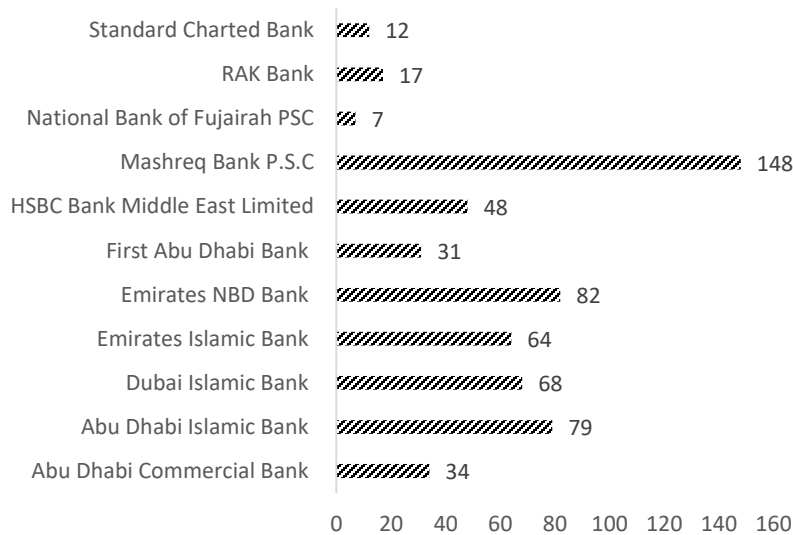
Table 5.5 shows the length of time respondents have been with the bank. The figure reveals that

36.1% have been with the bank for 6 to 10 years, 28.5% for 11 to 15 years, 22.5% for 5 years,

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7.8% for 16 to 20 years, followed by 3.9% for more than 20 years and finally 1.2% for less than 1 year.

Table 5.5 Respondents' years of loyalty with the bank

Length of time	Frequency	Percent
Less than 1 year	7	1.2
1 - 5 years	133	22.5
6 - 10 years	213	36.1
11 - 15 years	168	28.5
16 - 20 years	46	7.8
Over 20 years	23	3.9
Total	590	100.0

Figure 5.4: Respondents' Years of Loyalty with The Banks
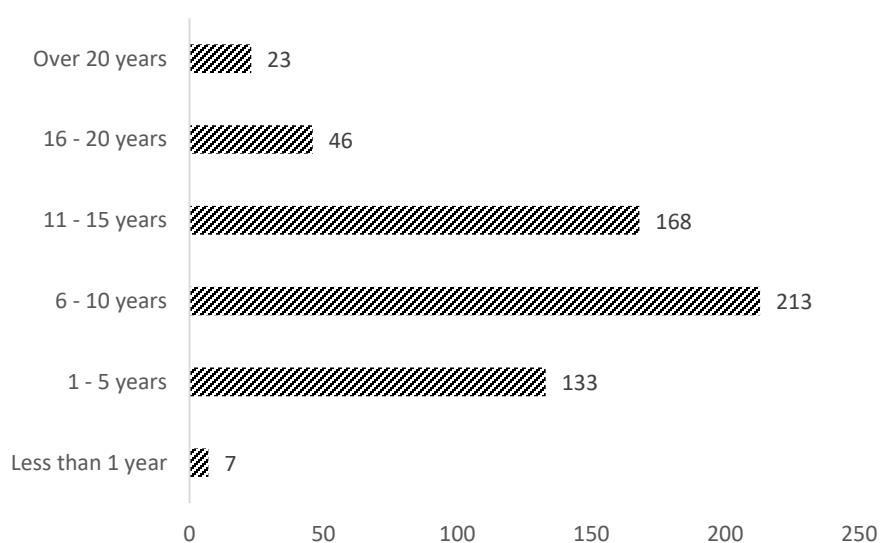
Table 5.6 introduces the names of Fintech services used by respondents provided by financial services. The figure reveals that 38.1% of respondents use mobile payment, followed by mobile remittance 23.1%, 14.6% Apple/Samsung pay, 7.8% stock trading, 7.3% automated teller machine, 6.6% personal financing, 1.4% mortgages, and 1.2% buy insurance. The results also reflect that customers have used Fintech to conduct various banking services showing less reliance on traditional banking services noted in the literature.

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Table 5.6 Names of Fintech services used by respondents

Fintech services	Frequency	Percent
Apple Pay/ Samsung Pay	86	14.6
Automated Teller Machine	43	7.3
Buy insurance	7	1.2
Mobile payment	225	38.1
Mobile remittance	136	23.1
Mortgages	8	1.4
Personal financing	39	6.6
Stock trading	46	7.8
Total	590	100.0

Figure 5.5 Name of Fintech Services Used by the Respondents
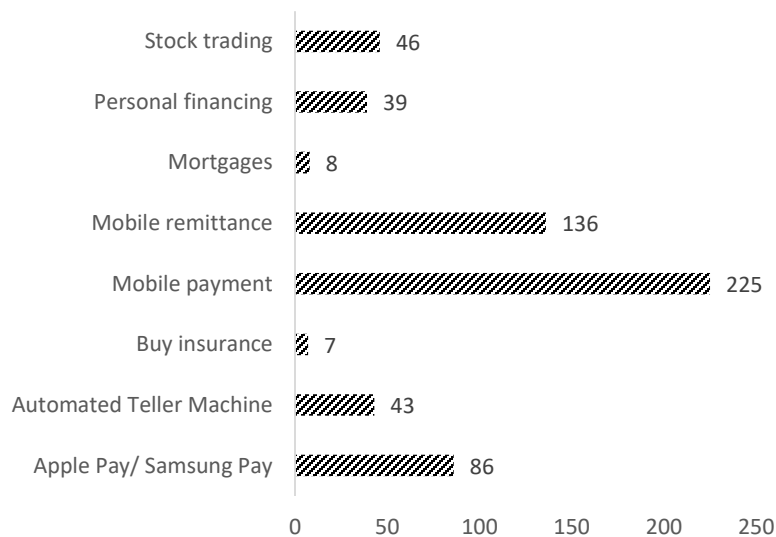
Table 5.7 shows the most common type of Fintech channels rated by respondents. The table indicates that 64.7% of the respondents use mobile banking, followed by internet banking 30.8%

and 4.4% use telephone banking. The results indicate that the use of telephone banking appears to be declining in favor of mobile banking and internet banking.

Table 5.7 Fintech channels by respondents

Fintech channels	Frequency	Percent
Internet banking	182	30.8
Mobile banking	382	64.7
Telephone banking	26	4.4
Total	590	100.0

Table 5.7 shows the length of time respondents have used Fintech with the bank. The figure reveals that 41% have used Fintech for more than 24 months, 16.9% for 24 months, 16.1% for 18 months, 14.2% for 12 months, 8% for 6 months and finally 3.7% for 3 months. This indicates the shift in consumer behaviour noted in the literature reflecting the high Fintech uptake in financial transactions.

Table 5.8 Respondents' length of time Fintech usage

Period of Fintech Usage	Frequency	Percent
3 months	22	3.7
6 months	47	8
12 months	84	14.2
18 months	95	16.1
24 months	100	16.9
Over 24 months	242	41.0
Total	590	100.0

Table 5.9 presents respondents' frequency of Fintech usage. The figure shows that 35.3% use Fintech every month, 33.9% on daily basis and 30.8% on a weekly basis.

Table 5.9 Respondents' Frequency of Fintech usage

Frequency of Fintech usage	Frequency	Percent
Daily	200	33.9
Monthly	208	35.3
Weekly	182	30.8
Total	590	100.0

Figure 5.6 Fintech Frequency, Usage Time and Channels used by Respondents
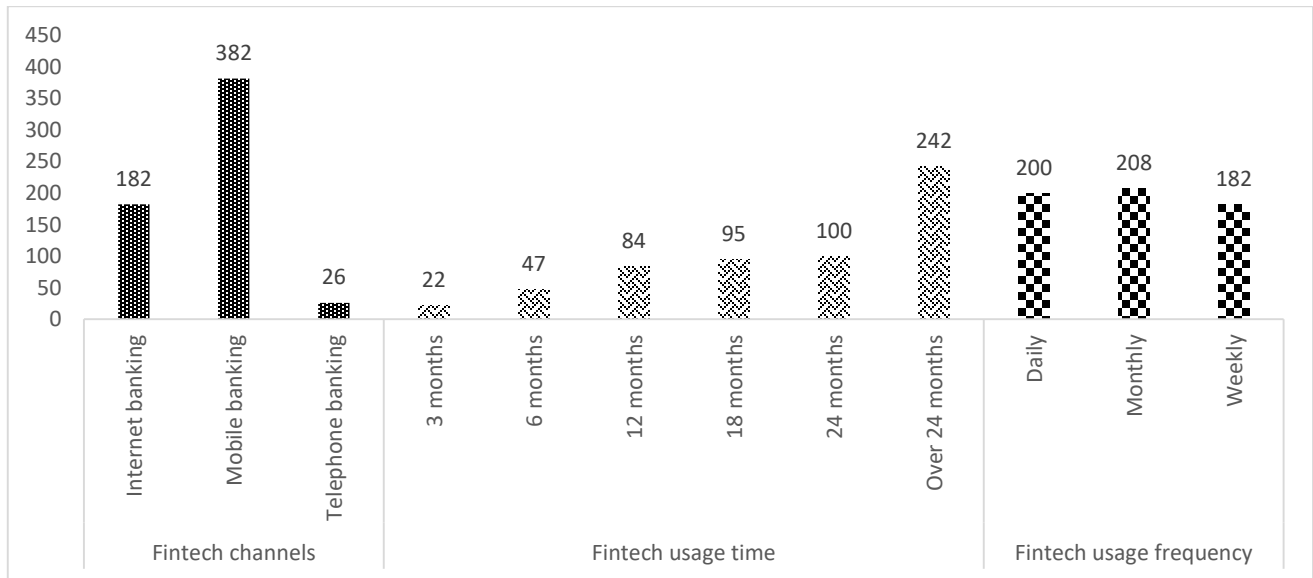
The figure visually represents the data. Mobile banking is the most frequent channel used by the majority of the respondents.

5.2.5 DESCRIPTIVE STATISTICS RESULTS

This section introduces the results of descriptive statistics for the study variables in terms of mean and standard deviation, showing the distribution of responses from questions. Standard deviation presents the spread out of the data from the mean. A high standard deviation signifies that the

data are spread out, while a low standard deviation signifies that the data around the mean vary less. All items were evaluated using a seven Likert scale, ranging from 1 'strongly disagree' to 7 'strongly agree'. The standard deviations and means for all items are detailed in table 5.10.

Table 5.10 Descriptive Statistics of Survey Measurements

Economic Benefit		
Items	*Mean*	*Std. Deviation*
ECO_1	5.76	1.214
ECO_2	5.61	1.219
ECO_3	5.70	1.161
ECO_4	5.61	1.193
Convenience		
Items	*Mean*	*Std. Deviation*
CONV_1	6.01	.989
CONV_2	5.99	1.037
CONV_3	5.98	1.092
CONV_4	5.96	1.117
CONV_5	5.97	1.071

Seamless Transaction Processing		
Items	*Mean*	*Std. Deviation*
STP_1	5.76	1.110
STP_2	5.79	1.063
STP_3	5.80	1.051
Perceived Service Quality		
Items	*Mean*	*Std. Deviation*
PQ_1	5.91	1.063
PQ_2	5.57	1.219
PQ_3	5.75	1.129

Items	Mean	Std. Deviation
PQ_4	5.63	1.246
PQ_5	5.56	1.284
PQ_6	5.69	1.154

Operational Risk

Items	Mean	Std. Deviation
OP_1	4.71	1.218
OP_2	4.61	1.284
OP_3	4.88	1.323
OP_4	4.87	1.290

Security Risk

Items	Mean	Std. Deviation
SEC_1	5.34	1.301
SEC_2	5.48	1.255
SEC_3	5.45	1.201
SEC_4	5.26	1.354

Financial Risk

Items	Mean	Std. Deviation
FIN_1	5.14	1.377
FIN_2	5.06	1.424
FIN_3	4.42	1.676

Legal Risk

Items	Mean	Std. Deviation
LEG_1	5.12	1.315
LEG_2	5.82	1.217
LEG_3	4.39	1.701
LEG_4	4.73	1.880

Confirmation

Items	Mean	Std. Deviation
CONF_1	5.42	1.212
CONF_2	5.42	1.253
CONF_3	5.35	1.247

Familiarity

Items	Mean	Std. Deviation
FAM_1	5.42	1.164
FAM_2	5.40	1.251
FAM_3	5.50	1.181
FAM_4	5.23	1.561

Satisfaction

Items	Mean	Std. Deviation
SAT_1	5.57	1.069
SAT_2	5.65	1.074
SAT_3	5.70	1.066
SAT_4	5.59	1.044

Repurchase Intention

Items	Mean	Std. Deviation
INT_1	5.74	1.278
INT_2	5.62	1.255
INT_3	5.56	1.300
INT_4	5.63	1.243

Loyalty

Items	Mean	Std. Deviation
LOY_1	5.62	1.260
LOY_2	5.52	1.287
LOY_3	5.60	1.244
LOY_4	5.50	1.288

The mean score for all 13 variables are as follows: economic benefit is between 5.61 and 5.76; convenience is between 5.97 and 6.01; seamless transaction processing is between 5.8 and 5.76; perceived service quality is between 5.69 and 5.91; operational risk is between 4.87 and 4.71; security risk is between 5.26 and 5.34; financial risk is between 4.42 and 5.14; legal risk is between 4.73 and 5.12; confirmation is between 5.35 and 5.42; familiarity is between 5.23 and

5.42; satisfaction is between 5.59 and 5.57, Intention is between 5.63 and 5.74, Loyalty is between 5.50 and 5.62. The results for all items of the variables indicate a higher mean than 4 which is a point of neutrality. It illustrates that most of the respondents agree with the items. Further discussion will be presented in subsequent sections on reliability analysis, mean values and standard deviation.

The preliminary analysis determines the initial exploration of the sample demographics, descriptive analysis of survey measurements and presents the effectiveness of data obtained. The analysis affirms that the assumptions underlying multivariate and descriptive statistics results are met, and the study can proceed with exploratory factor analysis.

5.3 EXPLORATORY FACTOR ANALYSIS

Exploratory Factor Analysis (EFA) was used to discover the underlying structure of the variables being studied. EFA main aim is to present information pertaining to the factor structure of a measure and examine the internal reliability of measures. EFA has mainly been carried out in research to validate items in a questionnaire that has not been validated previously (Field 2013); however, researchers should employ EFA to understand the variables under study before going further in the analysis (Hair et al. 2014). Therefore, EFA's main purpose here is to examine the structural validity of the measurements used in Fintech settings applied in new samples and country. The EFA procedure empowers the researcher in managing a large group of variables and determining the relationship between measured variables are known as factors (Hair et al. 2014). It allows describing the underlying theoretical structure of the study by reducing the high number of data set to fewer manageable summary variables while retaining the meaning and characteristics of the original variables (Hair et al. 1998).

EFA is carried out in multiple stages, and numerous criteria must be taken into account for successful outcomes. The adequacy of the sample size, the sample must exceed the variables and preferably should be 100 or larger to be factored (Hair et al. 2014). There were 590 responses to the survey, which met the sample size adequacy of larger than 100. Furthermore, the observations exceeded the 52 research variables. The KMO and Bartlett's Test and EFA findings are, therefore, summarized in the following sections:

5.3.1 KMO AND BARTLETT'S TEST

The substantial literature assessment and instrument creation procedure conducted in this research confirms the presence of a well-established theoretical underpinning for performing factor analysis. In addition, SPSS includes statistical procedures for testing factor analysis assumptions (Hair et al. 2010). However, it is essential to look at the results from Kaiser-Meyer-Olkin (KMO) and Bartlett's test before progressing into data analysis. KMO and Bartlett's Test show whether assumptions are met; factor analysis can be proceeded and, thereafter, confirmatory factor analysis should be continued (Hinton et al. 2004). Kaiser-Meyer-Olkin (KMO) examines the adequacy of the sample size and then the relationships between the variables are determined using Bartlett's test (Hair et al. 2010). The KMO value should be more than 0.60, and Bartlett's test should be (p < .05), (Hair et al. 2010). As shown in Table 5.11, the results of the sample adequacy KMO and Bartlett's test. The KMO value is 0.922 and significant (p<0.05); consequently, the result exceeds the minimum value required and indicates the data's appropriateness for factor analysis.

Table 5.11. Results of sample adequacy and Bartlett tests

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.922

Bartlett's Test of Sphericity	**Approx. Chi-Square**	33079.856
	Df	1431
	Sig.	.000

5.3.2 EXPLORATORY FACTOR ANALYSIS FINDINGS

Exploratory factor analysis was attempted using SPSS software. The factors were rotated using a Promax method and a principal component analysis without a preset number of factors. Furthermore, factor loadings with an absolute value less than of 0.50 should be ignored and values +0.5 and above are regarded as practically significant (Hair et al. 2010). The findings explained fifteen components as the opposite of the research constructs of fourteen. This step helps to clarify further the factors structure for a number of factors retention decision. The rotated factor matrix analysis highlights that NPM (Net Profit Margin Ratio) cross-loaded on more than one factor with low in loadings. As a result, this factors was removed from the model and remaining factors were eligible for further analysis (Hair et al. 2010).

figure 5.7 presents the result of a rotated factor matrix. All of the factors loaded were above the agreed standard of 0.50, producing fourteen components.

Rotated Component Matrix[a]													
Component													
1	2	3	4	5	6	7	8	9	10	11	12	13	14

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ECO_1		.830												
ECO_2		.725												
ECO_3		.822												
ECO_4		.735												
CONV_1	.812													
CONV_2	.828													
CONV_3	.851													
CONV_4	.769													
CONV_5	.763													
STP_1			.595											
STP_2			.688											
STP_3			.582											
PQ_1				.655										
PQ_2				.545										
PQ_3				.707										
PQ_4				.811										
PQ_5				.766										
PQ_6				.750										
OP_1							.910							
OP_2							.909							
OP_3							.693							
OP_4							.726							
SEC_1					.805									
SEC_2					.754									
SEC_3					.748									
SEC_4					.724									
FIN_1								.500						
FIN_2								.771						
FIN_3								.648						
LEG_1						.538								
LEG_2						.583								
LEG_3						.745								
LEG_4						.811								
CONF_1									.684					
CONF_2									.682					
CONF_3									.798					
FAM_1										.734				
FAM_2										.718				
FAM_3										.681				
FAM_4										.695				
SAT_1											.625			
SAT_2											.688			
SAT_3											.715			
SAT_4											.605			
INT_1												.849		
INT_2												.860		
INT_3												.853		
INT_4												.837		
LOY_1													.878	
LOY_2													.871	
LOY_3													.852	
LOY_4													.788	
FP1_ROA														.922
FP2_ROE														.902

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Figure 5.7: Pattern matrix of rotated component

Based on the pattern matrix of components extractions presented previously it guided to group each factor as follows: CONV1, CONV2, CONV3, CONV4 and CONV 5 make the first group. ECO1, ECO2, ECO3 and ECO 4 make the second group. STP1, STP2 and STP3 make the third group. PQ1, PQ2, PQ3, PQ4, PQ5 and PQ6 make the fourth group. SEC1, SEC2, SEC3 and SEC4 make the fifth group. OP1, OP2, OP3 and OP4 make the seventh group. LEG1, LEG2, LEG3 and LEG4 make the eighth group. FIN1, FIN2 and FIN3 make the eighth group. CONF1, CONF2 and CONF3 make the ninth group. FAM1, FAM2, FAM3 and FAM4 make the tenth group. SAT1, SAT2, SAT3 and SAT4 make the eleventh group. INT1, INT2, INT3 and INT4 make the twelfth group. LOY1, LOY2, LOY3 and LOY4 make the thirteenth group. Financial Performance ROA and ROE makes the fourteen group.

Table 5.12 presents the principal component results in terms of eigenvalues and total explained variance. The first component has an eigenvalue of 19.95 and a total variance of 36.94%. This component reflects the theoretical benefit construct of Fintech usage, "convenience". The second component has an eigenvalue of 5.64 and a total variance of 10.44%. This component reflects the theoretical benefit construct of Fintech usage, "economic". The third component has an eigenvalue of 3.05 and a total variance of 5.65%. This component reflects the theoretical benefit construct of Fintech usage, "seamless transaction processing". The fourth component has an eigenvalue of 2.80 and a total variance of 5.17%. This component reflects the theoretical benefit construct of Fintech usage, "perceived quality". The fifth component has an eigenvalue of 2.13 and a total variance of 3.94%. This component reflects the theoretical risk construct of Fintech usage, "security risk". The sixth component has an eigenvalue of 1.86 and a total variance of 3.44%. This component reflects the theoretical risk construct of Fintech usage, "legal risk". The

seventh component has an eigenvalue of 1.52 and a total variance of 2.90%. This component reflects the theoretical risk construct of Fintech usage, "operational risk".

The eighth component has an eigenvalue of 1.52 and a total variance of 2.90%. This component reflects the theoretical risk construct of Fintech usage, "financial risk". The ninth component has an eigenvalue of 1.31 and a total variance of 2.42%. This component reflects the theoretical construct of expectation confirmation theory. The tenth component has an eigenvalue of 1.11 and a total variance of 2.07%. The eleventh, twelfth and thirteenth components have eigenvalues, 1.09, 1.08, 1.07, respectively and a total variance of 1.65%, 1.57%, 1.48% respectively. These items reflect consumer intention of perceived service prospective. The fourteen component has an eigenvalue of 1.05 and a total variance of 1.31%. These items reflect the measures of firm financial performance.

Table 5.12: Eigenvalue and component variance extraction

Constructs	Factor loading	Eigenvalues	% of Variance	% of Cumulative Variance
Convenience	.812, .828, .851,.769, .763	19.949	36.943	36.943
Economic	.830, .725, .822, .735	5.638	10.441	47.385
Seamless Transaction Processing	.595, .688, .582	3.048	5.645	53.030
Perceived Service Quality	.655, .545, .707, .811, .766, .750	2.792	5.170	58.199
Security Risk	.805, .754, .748, .724	2.126	3.937	62.136
Legal Risk	.538, .583, .745, .811	1.858	3.441	65.577
Operational Risk	.910, .909, .693, .726	1.563	2.895	68.472
Financial Risk	.5, .771, .648	1.515	2.805	71.277
Confirmation	.684, .682, .798	1.308	2.423	73.699

Familiarity	.734, .718, 0.681, .695	1.119	2.072	75.771
Satisfaction	.625, .688, .715, .605	1.089	1.646	77.418
Repurchase Intention	.849, .860, .853, .837	1.075	1.573	78.990
Loyalty	.878, .871, .852, .788	1.069	1.467	80.457
Financial Performance	.922, .902	1.051	1.310	81.767

The fourteen components explained 81.77% of the variance as well as the eigenvalue components. Figure 5.8 presents the eigenvalue scree plot of EFA. Based on the scree plot, the curve becomes approximately horizontal after component 13 and overall eigenvalues greater than 1.
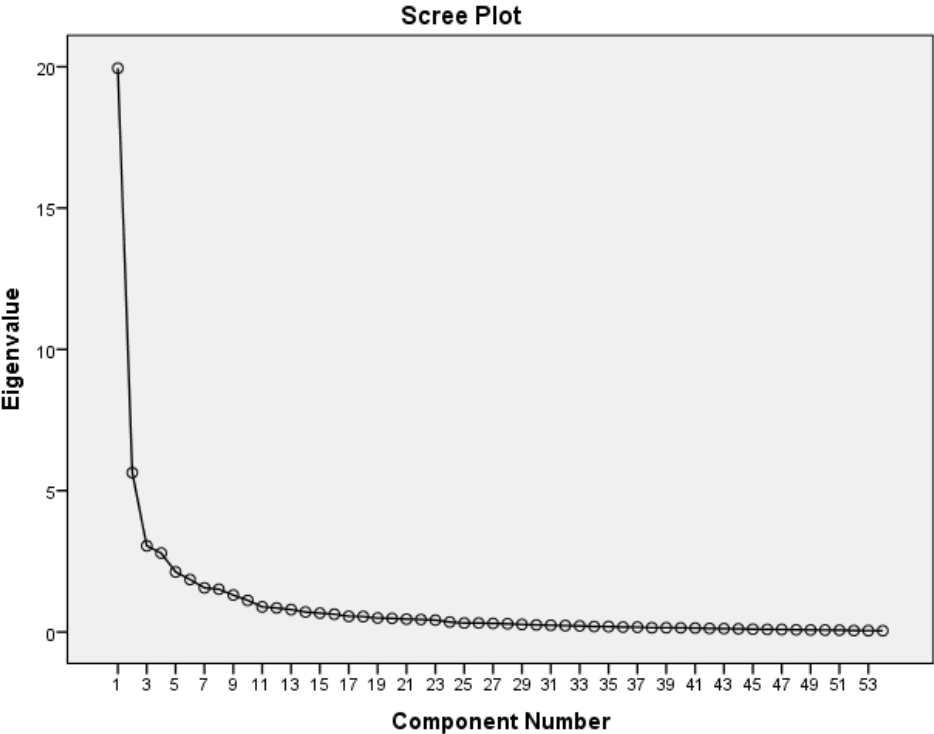
Figure 5.8: Eigenvalue scree plot of the exploratory factor analysis

The presence of fourteen variables is highlighted by EFA utilizing principal component analysis and the Promax. rotation method, which underpins the theoretical frameworks of this study. The

54 items were reduced to fourteen components due to high cross-loadings and communalities >

0.5. The overall KMO is 0.920 and a significant value of ($p<0.05$), validating study assumptions

and confirming the adequacy of sample data for factor analysis. Also, KMO results for each

composite component surpass the minimum value of > 0.6, confirming the correlation between

variables. Consequently, all the criteria of SEF are met. Table 5.13 shows the summary of

exploratory factor analysis.

Table 5.13: Summary of exploratory factor analysis.

Factor name	Eigenvalue	Variance extracted	KMO	Factor code	Factor loading	Factor items
Component 1 Convenience Benefit	19.949	36.943	.857	CON1	.812	I can use financial services very quickly when I use Fintech.
				CON2	.828	I can use financial services anytime anywhere when I use Fintech
				CON3	.851	I can use financial services easily when I use Fintech.
				CON4	.769	I believe Fintech eliminates the time-consuming application processes.
				CON5	.763	I believe Fintech provides convenience in financial services because it eliminates the need to have an intermediary or bank physical presence.
Component 2 Economic Benefit	5.638	10.441	.814	ECO1	.830	Using Fintech is cheaper than using traditional financial services.
				ECO2	.725	I can save money when I use Fintech.
				ECO3	.822	I can use various financial services with a low cost when I use Fintech.

				ECO4	.735	To get an economic service, Fintech is worth the extra effort it takes.
Component 3 Seamless Transaction Processing	3.048	5.645	.735	STP1	.595	I can control my money without the middleman when I use Fintech.
				STP2	.688	I can use various financial services at the same time (e.g. one stop processing) when I use Fintech.
				STP3	.582	I can have peer to peer transactions between providers and users without a middle man when I use Fintech.
Component 4 Perceived Service Quality	2.792	5.170	.882	PQ1	.655	I feel comfortable in using Fintech functions and services provided by the bank.
				PQ2	.545	The bank provides services with sincere attitude when I face service and system problems related to Fintech.
				PQ3	.707	Fintech information provided by the bank is accurate and reliable
				PQ4	.811	The bank gives me prompt services when I use Fintech
				PQ5	.766	The bank gives me the right solution to my request during service and system failures related to Fintech
				PQ6	.750	The overall quality of Fintech services provided by my bank is excellent
Component 5 Security Risk	2.126	3.937	.804	SEC1	.805	The bank implements security measures to protect all of its Fintech users.
				SEC2	.754	The bank has the ability to verify Fintech user's identity for security purposes.
				SEC3	.748	The bank shows great concern for the security of any transactions done via Fintech.
				SEC4	.724	I feel secure using Fintech services provided by the bank.
				LEG1	.538	My use of Fintech is confirmed due to the numerous regulations that the bank follows

Component				Item	Loading	Statement
Component 6 Legal Risk	1.858	3.441	.683	LEG2	.583	I think the availability of bank regulations make Fintech transactions easy for all users
				LEG3	.745	There is no legal uncertainty for Fintech users
				LEG4	.811	It is difficult to use various Fintech applications due to the government and bank regulations
Component 7 Operational Risk	1.563	2.895	.696	OP1	.910	When using Fintech provided by the bank I don't worry about losses due to application modification or weaknesses.
				OP2	.909	When using Fintech provided by the bank I don't worry about Fintech application's lacks of mechanisms to reverse wrong transactions
				OP3	.693	The bank is willing to solve issues when financial losses or financial information leakages occur of any transactions done via Fintech.
				OP4	.726	The bank responses to any financial losses or financial information leakages occur for Fintech transactions
Component 8 Financial Risk			.618	FIN1	.5	The bank has the ability to identify financial and payment frauds on Fintech Transactions.
	1.515	2.805		FIN2	.771	The bank has the ability to interoperability with other bank services to reduce financial losses when I use Fintech
				FIN3	.648	I don't worry about financial losses using Fintech provided by the bank.
Component 9 Confirmation	1.308	2.423	.768	CON1	.684	My experience with using Fintech is better than what I expected.
				CON2	.682	Overall majority of my Fintech expectations were met.
				CON3	.798	The service level provided by Fintech is better than what I expected
	1.119	2.072		FAM1	.734	I am familiar with the range of Fintech products offered by the Bank

Component 10 Familiarity			.764	FAM 2	.718	I am familiar with Fintech through bank marketing channels or online social media
				FAM 3	.681	Throughout my life I have had experience using Fintech through the bank
				FAM 4	.695	I have worked with or studied Financial Technology (i.e., artificial intelligence, blockchain. digitalization. etc)
Component 11 Customer Satisfaction	1.089	1.646	.867	SAT1	.625	Considering everything, I am extremely satisfied with my bank Fintech products, services and transaction processing.
				SAT2	.688	I am generally pleased and happy with my bank Fintech services
				SAT3	.715	I believe that I did the right thing when I chose to use Fintech provided by my bank
				SAT4	.605	The overall Fintech services provided by my bank is excellent
Component 12 Repurchase Intention	1.075	1.573	.844	INT1	.849	In the future, I will continue to use Fintech services provided by this bank again.
				INT2	.860	I prefer to use Fintech services offered by this bank
				INT3	.853	I will not switch my current Fintech service provider
				INT4	.837	I would positively consider Fintech in my choice set
Component 13 Customer Loyalty	1.069	1.467	.864	LOY1	.878	I have positive things to say to other people about using Fintech in this bank.
				LOY2	.871	I will recommend this bank to do Fintech to people who seek my opinion.
				LOY3	.852	I would encourage friends and relatives to do financial services/business through Fintech in this bank.
				LOY4	.788	I consider this bank as my first choice to do financial services via Fintech
Component 14 Financial Performance	1.051	1.310	*NA	FP1_R OA	.922	Return on Asset
				FP2_R OE	.902	Return on Equity

*NA since ROA and ROE are ratio's and collected from banks annual reports.

5.3.4 RELIABILITY ASSESSMENT

Bryman and Bell (2007) explained reliability as the measurement of scale consistency. There are two major types of reliability when evaluating the quality of a measure is reliable, internal reliability and stability. Internal reliability refers to whether or not items on the scale are consistent and homogeneous. Internal consistency of the factors is measured using Cronbach's coefficient α (Churchill 1995). Stability refers to the ability of a measurement to remain constant over time. This research will use internal reliability since it is widely used in social sciences, business and other disciplines to assure the quality of measurements (Churchill 1995; Fornell & Larcker 1981). The coefficient of reliability ranges between 0 and 1, high coefficient equaling 1 refers to perfect reliability, while low coefficient refers to weak items ability to capture the construct in question (Churchill 1995). The general accepted value is that Cronbach alphas greater than 0.7 and above are considered as high (Nunnally & Bernstein 1978). Table 5.14 presents the Cronbach's alpha for all the factors used in this study. For all the factors, Cronbach α is deemed as satisfactory as it ranges from 0.709 to 0.955, all items of Cronbach α stand at 0.963. All the values exceeded the agreed standard of 0.7 recommended by Nunnally and Bernstein (1978). Thus, the results show that the reliability of all measurement scale is satisfactory. Thus, improving α for each construct was not required.

Table 5.14: Reliability assessment

Construct	*Number of Items*	*α*
Economic benefit	4	. 864
Convenience benefit	5	.924
Seamless Transaction Processing	3	.872

Perceived Service Quality	6	.898
Security Risk	4	.915
Legal Risk	4	.715
Operational Risk	4	.821
financial Risk	3	.709
Confirmation	3	.955
Familiarity	4	.829
Customer Satisfaction	4	.948
Repurchase intention	4	.953
Customer loyalty	4	.953
All items	52	.963

5.4 TEST FOR COMMON METHOD BIAS

Common-method bias can cause a problem when the data is collected from a single source for independent and dependent variables. If a single technique of measurement, such as a questionnaire was used the bias might exist leading to measurements error with potential misleading conclusions (Campbell & Fiske 1959). This study employs primary data collection for the majority of the constructs. However, the researcher conducted a pilot study to test out the reliability of the scale during the questionnaire instrument validity procedure. The questions were checked with professors to identify any issues with wording, layout and grammar during the questionnaire development procedure. In addition, the researcher considered seeking respondents who are highly experienced in banking transactions, which can reduce the common method bias issue (MacKenzie & Podsakoff 2012).

This study is carried out by Podsakoff (2003) suggestion to use Harman's single-factor test to identify common-method bias. According to Podsakoff (2003), the proportion of explained

variance should not exceed 50 percent. As a result, the variance accounted for a single factor was 38.29% which is less than the benchmark value of 50 percent (See appendix D). Therefore, common method bias is unlikely to be an issue in this research.

5.5 CORRELATION

The correlation coefficient is deemed to be an important measure for researchers to consider, it measures the strength between the study variables and underlies the assumptions for conducting regression. The correlation in the proposed model was investigated using SPSS software as well AMOS. The AMOS results will be discussed in the following sections. The correlation coefficient has the ability to examine several dependent liner relationships at the same time when one or more variables are dependent and independent (Hair et al. 2014). The correlation coefficient value (r) lies between -1 and +1, +1 regarded as a perfect positive correlation, while -1 is regarded as a perfect negative correlation. However, a value of 0 indicates no relationship between the variables. Besides, the values between ±0.1 to ±0.3 indicate weak relationships from ±0.3 to ±0.5, which indicates medium strength, and from ±0.5 to ±1 indicates a strong relationship (Cohen, 1988, pp. 79-81).

Table 5.15 shows the correlation among the study model factors: Confirmation attributes, familiarity, satisfaction, repurchase, loyalty and financial performance measures (ROA and ROE). The results indicate a significant correlation among the majority of factors, 'Economic', 'convenience', 'seamless transaction processing', 'perceived service quality', 'security risk', 'legal risk', 'operational risk', 'financial risk'. The six dependent variables: 'Confirmation', 'familiarity', 'satisfaction', 'repurchase', 'loyalty' and 'financial performance ROA and ROE' show significant correlation with other variables. This indicates that these mediator variables are

critical to reflect on customer behavior on Fintech services and its impact on financial performance. Also, the moderator 'familiarity' correlates positively and significantly to 'confirmation' and 'customer satisfaction', 0.653 and 0.708, respectively. To highlight that there is a weak significant correlation between 'financial performance ROA and ROE' with 'confirmation', 'familiarity' and 'satisfaction'. Moreover, there is no significant correlation between 'repurchase' and 'financial performance ROA and ROE'. This result may explain the information on customer repurchase intention and positive correlation to customer loyalty (r=.889, p < .01). This level of correlation is appropriate and proves a linear association among the majority of variables; however, it requires more testing using other multivariate techniques (i.e. SEM, CFA etc.).

Table 5.15: Correlation of study variables

6. Confirmatory Factor Analysis

	Economic	Convenience	Seamless Transaction Processing	Perceived Service Quality	Operational Risk	Security Risk	Financial Risk	Legal Risk	Confirmation	Familiarity	Satisfaction	Repurchase	Loyalty	ROA	ROE
Economic	1														
Convenience	.472**	1													
Seamless Transaction Processing	.512**	.715**	1												
Perceived Service Quality	.404**	.612**	.635**	1											
Operational Risk	.098*	.137**	.081*	.519**	1										
Security Risk	.224**	.395**	.330**	.411**	.599**	1									
Financial Risk	.188**	.238**	.151**	.293**	.683**	.698**	1								
Legal Risk	.315**	.342**	.272**	.420**	.426**	.598**	.562**	1							
Confirmation	.343**	.550**	.506**	.536**	.504**	.580**	.577**	.447**	1						
Familiarity	.404**	.427**	.351**	.501**	.311**	.397**	.467**	.444**	.653**	1					
Satisfaction	.514**	.639**	.476**	.579**	.336**	.531**	.463**	.570**	.679**	.708**	1				
Repurchase	.352**	.374**	.327**	.454**	.388**	.512**	.432**	.454**	.566**	.566**	.630**	1			
Loyalty	.352**	.432**	.355**	.432**	.441**	.565**	.509**	.476**	.531**	.494**	.647**	.889**	1		
ROA	.033	.001	-.044	.065	.064	.036	.189**	.182**	.139**	.163**	.184**	.054	.085*	1	
ROE	.090*	.024	.018	.090*	.045	.097*	.166**	.198**	.135**	.171**	.186**	.025	.063	.746**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

CFA, in short, tests whether the data fits a hypothesized measurement model. SPSS Amos Version

26 was used to run CFA in the current study. Six main steps were followed, namely model

specification, model identification, model estimation, model assessment and model specification. The validity of the model can be specified in terms of construct validity which consists of discriminant and convergent validity and goodness-of-fit indices (Hair et al. 2010).

Figure 5.9 reflects the path diagram of the model:

Figure 5.9: Initial path analysis of the conceptual model with unstandardized estimates
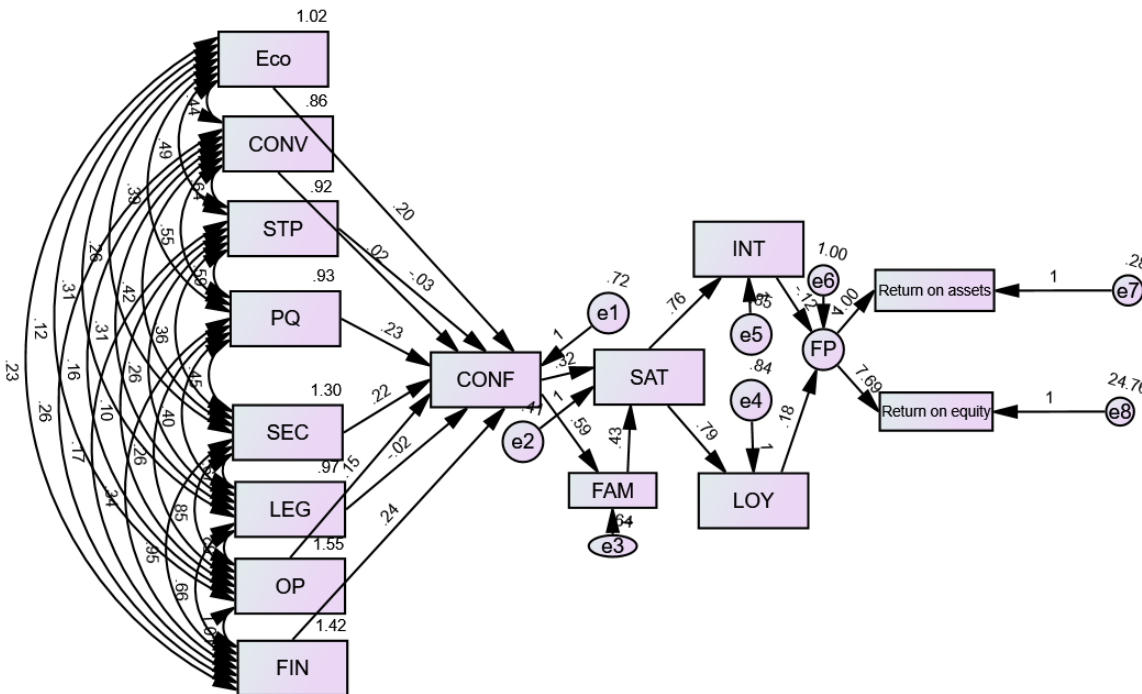
The following figures display standardized estimates as the latter can allow for comparison despites having different units of measurements by variables.

Figure 5.10: Initial path analysis of the conceptual model with standardized estimates
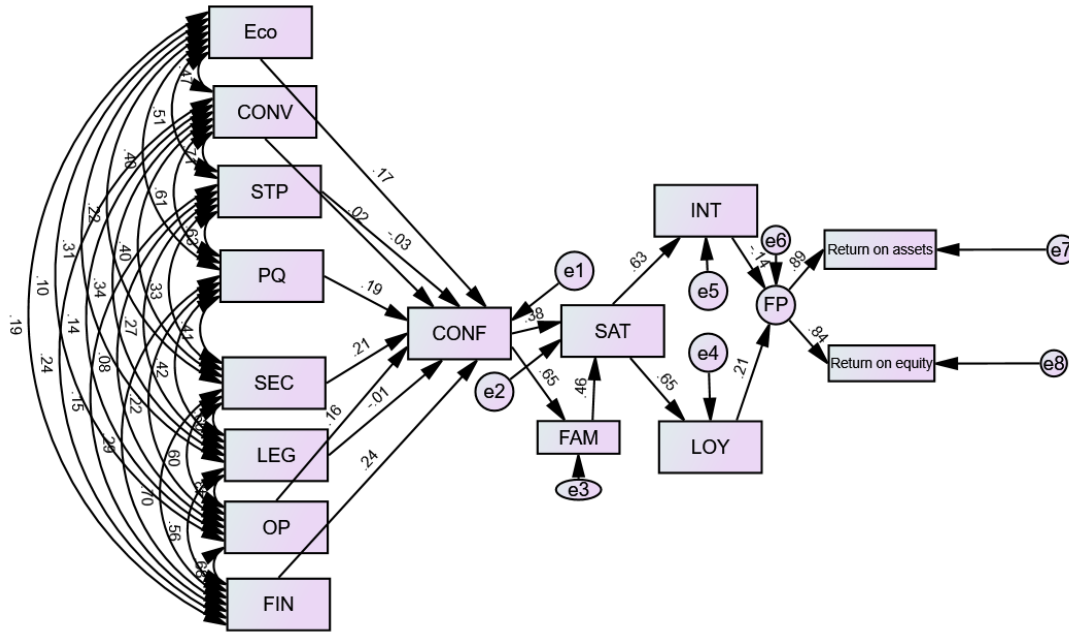
Worth-noting is that the model fit can be improved by model fit indices, convergent reliability by removing outliers and by discriminant reliability by removing cross-loadings. Two edits with regard to modification indices were made by adding covariances between error terms (e4) and (e5), another covariance has been added between the error term number 2 and Leg variable. A correlation can be removed between some variables.

The model respecifications according to modification indices has resulted in the following final path analysis as displayed in Figure 5.11:

Figure 5.11: Final path analysis with unstandardized estimates
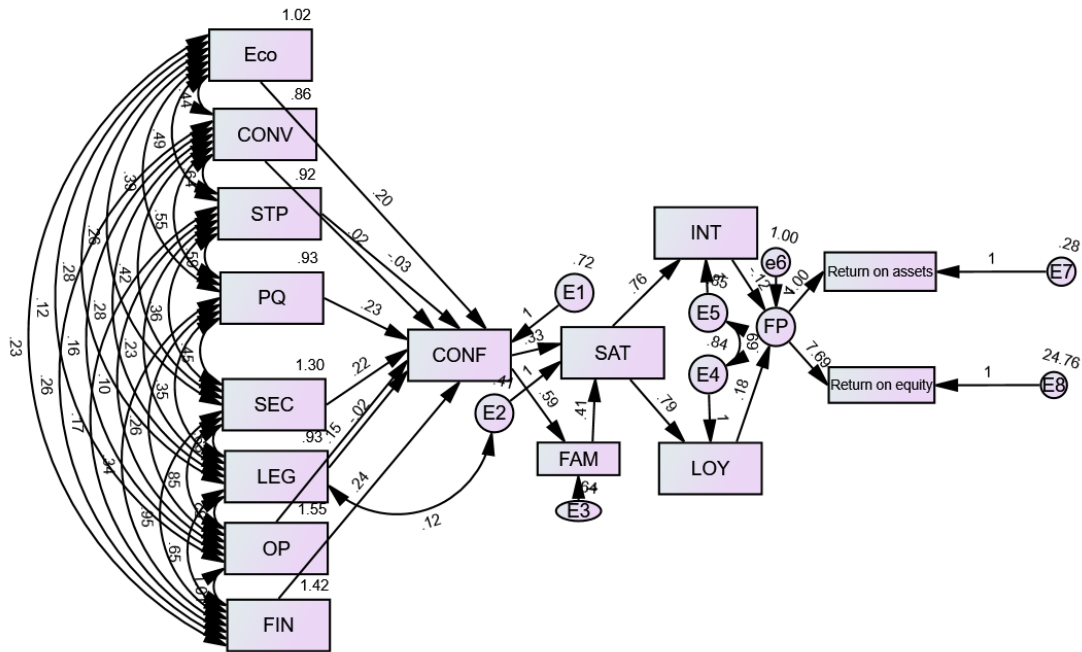
Figure 5.12: Final path analysis with standardized estimates
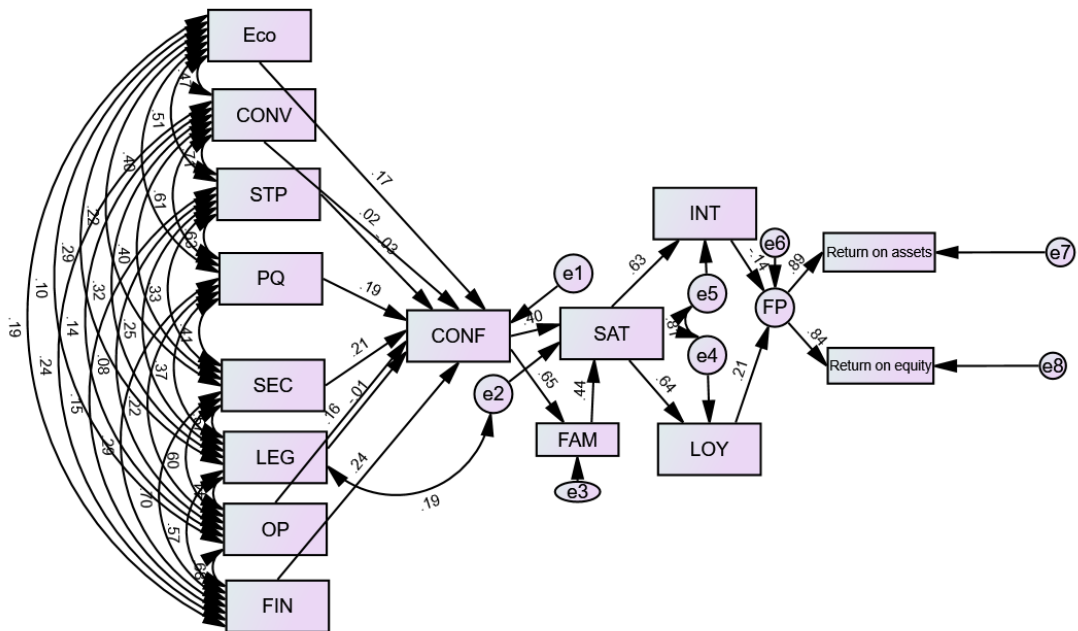
A covariance has been added between error term number 2 and LEG variable to improve the model as suggested by modification indices. The threshold of modification indices was set at 10 in the analysis of properties output menu.

5.6.1 GOODNESS OF FIT INDICES

CFA was primarily run on fourteen constructs with fifty-four items. Each variable was loaded with its measurement item and was subject to CFA analysis. At least four analyses of model fit should be conducted for the structural model and CFA (Hair et al. 2010). Accordingly, goodness of fit index (GFI), Chi-square (X^2) to the degree freedom (Df), Normed Fit Index (NFI), root mean square error of approximation (RMSEA) and Comparative Fit Index (CFI) will be checked. If the values are above the threshold required .9 or above for the majority of them and lower than 0.08 for RMSEA (Anderson and Gerbing 1988), the model can be adopted. Otherwise, new improvements are required. The improvements of the model can be in the form of linking indicators to other variables, eliminating them and linking the indicator to other variables or utilizing correlated measurement errors (Anderson and Gerbing 1988). The standardized residuals, specification searches and modification indices can enhance the goodness-of-model fit (Hair et al. 2010). The Model Fit Summary can be displayed in the following table:

Table 5.16: Goodness of fit for structural model

Chi-Square	2944.552
Degrees of Freedom	1363
CMIN/DF	2.160
CFI	.922
RMSEA	.114
NFI	.914
GFI	.908

From the above table, it can be highlighted that the chi-square value acquired is 2944.552 and the corresponding degree of freedom is 1363. In alignment with this, the value acquired for CMIN/DF is 2.160 which is more or less equal to 2.00 which indicates that the model is a good fit.

The values for CFI, NIF, and GFI were 0.922, 0.914 and 0.908, respectively and over the suggested value of ≥ 0.90, it can be stated that the model is a good fit. Moving on, the RMSEA value gained is 0.114 which is less than the suggested criteria of < 0.80, thereby, indicating a good fit. Nonetheless, as all indicators depict a good fit, it can be concluded that the model is at a good fit.

5.7 CONSTRUCT VALIDITY

According to Hair et al. (2014), construct validity is a crucial assessment of research measures since it provides evidence of CFA results. The degree to which the constructs' measurement

accurately represents the concept of interest is referred to as validity. Scale validity is needed to guarantee that a scale is uni-dimensional, and it complies with its conceptual meaning to support a given interpretation of test scores and achieves the required level of reliability (Hair et al. 2014). Discriminant and convergent validity, which are used in this study, are the most widely recognized types of validity. Convergent validity refers to the fact that the indicators of the same construct share a common variance. Discriminant validity, on the other hand, assesses the divergence of the construct and how it differs from others, rather than measuring the same thing. As a result, the following sections summarize detailed information on each type.

5.7.1 CONVERGENT VALIDITY

According to Fornell and Larcker (1981) convergent validity is a method used to validate construct validation by having a large and similar variance between constructs. The convergent validity of the current study is assessed using factor loadings, composite reliability and average variance extracted (AVE). All of the important ratios (t-values) should be greater than 1.96, and factor loading for all variables should have a standardized regression weight of more than 0.50 (Hair et al., 2014). According to Bagozzi and Edwards (1998), Composite Reliability (CR) measures internal consistency and should have a coefficient higher than 0.7. The values of the average variance extracted (AVE) measures the amount of variation in the indicators in relation to the potential construct. The AVE requires to be greater than 0.5. However, Fornell and Larcker (1981) pointed that if AVE value is less than 0.5 and CR is greater than 0.6, then the convergent validity of the construct is deemed to be acceptable.

The following formula is used to calculate AVE, by dividing the sum of squares standardized factor loadings by the sum of the total number of factors. *Li* is the standardized factor loading for the *i* items in the factor, and *n* stands for the entire number of items (Hair et al. 2014).

$$AVE = \frac{\sum_{i=1}^{n} Li^2}{n}$$

The following formula is used to calculate CR. Where L*i* is the standardized factor loading for the *i* items in the factor, and *ei* is the error variance for the items in the factor (Hair et al. 2014).

$$CR = \frac{(\sum_{i=1}^{n} Li)^2}{(\sum_{i=1}^{n} Li)^2 + (\sum_{i=1}^{n} ei)}$$

Table 5.16 shows the convergent validity results. For most of the study constructs AVE > .5 and CR > .7 are achieved, in exception of seamless transaction processing and satisfaction constructs were AVE marginally less than .5, but CR is higher than .7 which is considered to be acceptable and not a major concern; hence, convergent validity is supported for this research (Fornell & Larcker 1981). Thus, these results indicate convergent validity.

Table 5.17: Convergent Validity

Construct	Items	Factor loadings	CR	AVE
Economic Benefit	ECO_1	.830	0.950	0.608
	ECO_2	.725		
	ECO_3	.822		
	ECO_4	.735		
Convenience	CONV_1	.812	0.969	0.649
	CONV_2	.828		
	CONV_3	.851		
	CONV_4	.769		
	CONV_5	.763		
Seamless Transaction Processing	STP_1	.595	0.678	0.488
	STP_2	.688		
	STP_3	.582		
Perceived Service Quality	PQ_1	.655	0.942	0.471
	PQ_2	.545		
	PQ_3	.707		
	PQ_4	.811		
	PQ_5	.766		
	PQ_6	.750		
Operational Risk	OP_1	.910	0.976	0.666
	OP_2	.909		
	OP_3	.693		
	OP_4	.726		
Security Risk	SEC_1	.805	0.938	0.575
	SEC_2	.754		
	SEC_3	.748		
	SEC_4	.724		
Financial Risk	FIN_1	.500	0.681	0.518
	FIN_2	.771		
	FIN_3	.648		
Legal Risk	LEG_1	.538	0.827	0.614
	LEG_2	.583		
	LEG_3	.745		
	LEG_4	.811		
Confirmation	CONF_1	.684	0.822	0.523
	CONF_2	.682		
	CONF_3	.798		
Familiarity	FAM_1	.734	0.897	0.513

	FAM_2	.718		
	FAM_3	.681		
	FAM_4	.695		
Satisfaction	SAT_1	.625	0.833	0.435
	SAT_2	.688		
	SAT_3	.715		
	SAT_4	.605		
Repurchase Intention	INT_1	.849	0.968	0.812
	INT_2	.860		
	INT_3	.853		
	INT_4	.837		
Loyalty	LOY_1	.878	0.973	0.719
	LOY_2	.871		
	LOY_3	.852		
	LOY_4	.788		
Financial Performance	FP1_ROA	.922	0.828	0.850
	FP2_ROE	.902	0.781	0.814

5.7.3 DISCRIMINANT VALIDITY

Discriminant validity is defined as "the degree to which two conceptually similar concepts are distinct" (Hair et al. 2010, p.125). A significant discriminant validity occurs when the average variance extracted is higher than the squared correlation estimates for the variables. Table 5.17 shows the significant level of discriminant validity of the study constructs, as AVE is greater than the estimate of the squared correlation below the diagonal line. Thus, discernment validity is achieved in this study.

Table 5.18: Discriminant Validity

	Economic	Convenience	Seamless Transaction Processing	Perceived Service Quality	Operational Risk	Security Risk	Financial Risk	Legal Risk	Confirmation	Familiarity	Satisfaction	Repurchase Intention	Loyalty	ROA	ROE
Economic	**0.780**														
Convenience	.472**	**0.805**													
Seamless Transaction Processing	.512**	.715**	**0.699**												
Perceived Service Quality	.404**	.612**	.635**	**0.686**											
Operational Risk	.098*	.137**	.081*	.519**	**0.816**										
Security Risk	.224**	.395**	.330**	.411**	.599**	**0.758**									
Financial Risk	.188**	.238**	.151**	.293**	.683**	.698**	**0.720**								
Legal Risk	.315**	.342**	.272**	.420**	.426**	.598**	.562**	**0.784**							
Confirmation	.343**	.550**	.506**	.536**	.504**	.580**	.577**	.447**	**0.723**						
Familiarity	.404**	.427**	.351**	.501**	.311**	.397**	.467**	.444**	.653**	**0.716**					
Satisfaction	.514**	.639**	.476**	.579**	.336**	.531**	.463**	.570**	.679**	.708**	**0.660**				
Repurchase Intention	.352**	.374**	.327**	.454**	.388*	.512**	.432**	.454**	.566**	.566**	.630**	**0.901**			
Loyalty	.352**	.432**	.355**	.432**	.441**	.565**	.509**	.476**	.531**	.494**	.647**	.889**	**0.848**		
ROA	0.033	0.001	-0.044	0.065	0.064	0.036	.189**	.182**	.139**	.163**	.184**	0.054	.085*	**0.922**	
ROE	.090*	0.024	0.018	.090*	0.045	.097*	.166**	.198**	.135**	.171**	.186**	0.025	0.063	.746**	**0.902**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

5.8 HYPOTHESES TESTING

The associations between variables can be evaluated in the structural model. As suggested by Hair et al. (2010), at least four test-of-model fit indices must be employed, namely Goodness of Fit Index (GFI), adjusted goodness of fit index (AGFI), Chi-square (X^2) to the degree of freedom (Df), Normed fit index (NFI), Comparative Fit Index (CFI) and root mean square error of approximation (RMSEA). Thus, this research has applied five goodness of fit indices presented in previous sections, and it confirms achieving good model fit results.

The study hypotheses are evaluated by assessing the path significance of each association between variables. Therefore, standardized assessment, critical ratios and p-values are used to test all fourteen hypotheses in this research. Moreover, the critical ratio, which is known as the t-value, is found by dividing the regression weight estimate by the standard error. A relationship between constructs is significant when a p-value of (≤.05) is achieved and a t-value of over 1.96.

The path significance of each association between variables is used to test hypotheses. Therefore, standardized assessments, critical ratios, and p-values are used to test all the hypotheses. Table 5.19 below shows the results of path estimates for fourteen hypothesis in this study.

Table 5.19: Hypothesis Testing

Hypotheses	Variables			Estimate	S.E.	t-stat	P-value	Hypothesis
H1:	CONF	<---	Eco	0.196	.042	4.673	.000***	Supported
H2:	CONF	<---	CONV	0.020	.058	.351	.726	Not supported
H3:	CONF	<---	STP	-0.032	.059	-.550	.582	Not supported
H4:	CONF	<---	PQ	0.230	.051	4.479	.000***	Supported
H5:	CONF	<---	SEC	0.216	.049	4.394	.000***	Supported
H6:	CONF	<---	LEG	-0.016	.048	-.331	.741	Not supported
H7:	CONF	<---	OP	0.152	.040	3.806	.000***	Supported
H8:	CONF	<---	FIN	0.238	.048	4.935	.000***	Supported
H9:	SAT	<---	CONF	0.331	.029	11.455	.000***	Supported
H10-1:	SAT	<---	FAM	0.405	.032	12.707	.000***	Supported
H10-2:	FAM	<---	CONF	0.587	.028	20.926	.000***	Supported
H11:	INT	<---	SAT	0.756	.039	19.477	.000***	Supported
H12:	LOY	<---	SAT	0.785	.039	20.365	.000***	Supported

Hypotheses	Variables			Estimate	S.E.	t-stat	P-value	Hypothesis
H13:	FP	<---	INT	-0.118	.083	-1.416	.157	Not supported
H 14:	FP	<---	LOY	0.177	.084	2.105	.035**	Supported

Note: ***, ** significant at 1% and 5% levels respectively.

In SEM, a measurement model (data) was built followed by a structural model (theory), and the extent to which they match was tested to verify the hypotheses. The results showed that 10 out of 14 casual paths are significant as their p-values are <.05, and t-values are more than 1.96. Hypotheses testing results are summarised below.

H1: Economic benefit has a positive effect on confirmation of expectation towards Fintech.

From the path model, it can be observed that while estimating the relationship between the economic benefit and confirmation, the results show the path estimates of 0.196, t-value of 4.673 and its corresponding p-value of 0.000<0.05. As this p-value acquired was less than 0.05 level of significance, the result suggests that economic benefit does have a positive relationship with confirmation of expectation towards Fintech. Thus, the study rejects the null hypothesis and supports the alternative hypothesis.

H2: Convenience has a positive relationship to confirmation of expectation toward Fintech.

From the path model, it can be observed that while estimating the relationship between convenience and confirmation, the path estimates of 0.020, t-value of 0.351 and its corresponding p-value of 0.726>0.05. As this p-value acquired was greater than 0.05 level of significance, the result indicates that convenience does not have a positive relationship with confirmation of expectation towards Fintech. This suggests that the null hypothesis is not rejected, therefore the alternative hypothesis is not supported.

H3: Seamless transaction processing has a positive relationship to confirmation of expectation toward Fintech.

From the path model, it can be observed that while estimating the relationship between the seamless transaction processing and confirmation, the results show the path estimates of -0.032, t-value of -0.550 and its corresponding p-value of 0.582>0.05. As this p-value acquired was greater than 0.05 level of significance, we can conclude that seamless transaction processing does not have a positive effect on confirmation of expectation towards Fintech. Thus, we fail to reject the null hypothesis and the alternate hypothesis is not supported.

H4: Perceived service quality has a positive relationship to confirmation of expectation toward Fintech.

From the path model, it can be observed that while estimating the relationship between the perceived service quality and confirmation, the results show the path estimates of 0.230, t-value of 4.479 and its corresponding p-value of 0.000<0.05. As this p-value acquired was less than 0.05 level of significance, the evidence shows that the perceived service quality does have a positive association with the confirmation of expectation towards Fintech. Thus, the result rejects the null hypothesis, and the alternate hypothesis is supported.

H5: Security risk has a significant relationship to confirmation of expectation toward Fintech

From the path model, it can be observed that while estimating the relationship between the security risk and confirmation, the results show the path estimates of 0.216, t-value of 4.394 and its corresponding p-value of 0.000<0.05. As this p-value acquired was less than 0.05 level of significance, the evidence shows that security risk does have a statistically significant relationship with confirmation of expectation towards Fintech. Thus, the null hypothesis is rejected. and alternate hypothesis is supported.

H6: Legal risk has a significant relationship to confirmation of expectation toward Fintech.

From the path model, it can be observed that while estimating the relationship between the legal risk and confirmation, the results show the path estimates of -0.016, t-value of -0.331 and its corresponding p-value are 0.741>0.05. As this p-value acquired was greater than 0.05 level of significance, the finding shows that legal risk does not have impact on confirmation of expectation towards Fintech. Thus, the null hypothesis is not rejected and the alternate hypothesis is not supported.

H7: Operation risk has a significant relationship to confirmation of expectation toward Fintech.

From the path model, it can be observed that while estimating the relationship between the operation risk and confirmation, the path estimates of 0.152, t-value of 3.806 and its corresponding p-value of 0.000<0.05. As the p-value is less than 0.05 level of significance, the this indicates that operation risk does have a significant relationship with confirmation of expectation towards Fintech. Thus, in accordance with this, the result rejects the null hypothesis and supports the alternate hypothesis.

H8: Financial risk has a significant relationship to confirmation of expectation toward Fintech.

From the path model, it can be observed that while estimating the relationship between the financial risk and confirmation, the path estimates of 0.238, t-value of 4.935 and its corresponding p-value of 0.000<0.05. Since the p-value is less than 0.05 level of significance, the result shows that financial risk does have a statistically significant relationship on the confirmation of expectation towards Fintech, suggesting that the null hypothesis is rejected and the alternate hypothesis is supported.

H9: Confirmation is positively associated with customer satisfaction.

From the path model, it can be observed that while estimating the relationship between the customer satisfaction and confirmation, the results show the path estimates of 0.331, t-value of 11.455 and its corresponding p-value of 0.000<0.05. As the p-value is less than 0.05 level of significance, this suggests that customer satisfaction does have a statistically significant positive relationship with confirmation of expectation towards Fintech. Thus, , the study rejects the null hypothesis and supports the alternative hypothesis.

H10: The effects of confirmation on customer satisfaction are strengthened for users with high familiarity of Fintech and weakened for users with low familiarity of Fintech.

From the path model, it can be observed that while estimating H10-1 the relationship between familiarity and customer satisfaction, the path estimates of 0.405, t-value of 12.707 and its corresponding p-value of 0.000. While estimating the H10-2 relationship between confirmation and familiarity, the results show the path estimates is 0.587 with at-value of 20.926 and its corresponding p-value of 0.000. Thus, we can conclude that familiarity does have a positive relationship with customer satisfaction and confirmation of expectation towards Fintech. Therefore, the null hypothesis is rejected, and the alternate hypothesis is supported.

H11: Customer satisfaction has a positive effect on repurchase intention.

From the path model, it can be observed that while estimating the relationship between the customer satisfaction and repurchase intention, the results show the path estimates is 0.756 with t-value of 19.477 and its corresponding p-value of 0.000. As this p-value is less than 0.05 level of significance, the finding reveals that customer satisfaction does have a significant positive impact

on repurchase intention. Thus, the null hypothesis is rejected and the alternative hypothesis is supported.

H12: Customer satisfaction has a positive effect on customer loyalty.

From the path model, it can be observed that while estimating the relationship between the customer satisfaction and customer loyalty, the results show the path estimates of 0.785, t-value of 20.365 and its corresponding p-value of 0.000<0.05. As this p-value is less than 0.05 level of significance, this suggests that customer satisfaction does have a positive impact on customer loyalty. Thus, the study rejects the null hypothesis and supports the alternative hypothesis.

H13: Repurchase intention has a positive effect on the financial performance of banks.

From the path model, it can be observed that while estimating the relationship between the repurchase intention and financial performance of banks, the path estimates of -0.118, t-value of -1.416 and its corresponding p-value of 0.157>0.05. As this p-value is greater than 0.05 level of significance, the repurchase intention does not have a positive impact on financial performance of banks. Accordingly, , the study the null hypothesis is not rejected and the alternative hypothesis is not supported.

H14: Customer loyalty has a positive effect on the financial performance of banks.

From the path model, it can be observed that while estimating the relationship between the customer loyalty and financial performance of banks, the results show the path estimates of 0.177, t-value of 2.105 and its corresponding p-value of 0.035< 0.05. As this p-value is less than 0.05 level of significance, the evidence shows that customer loyalty does have a positive effect on the

financial performance of banks. Hence, the study rejects the null hypothesis and supports the alternative hypothesis.

5.9 MODERATION TESTING

The Hayes PROCESS model can automatically combine Ordinary Least Square (OLS) and logistic regression path analysis modeling tools (Hayes & Rockwood 2017). This is a widely implemented tool in the studies of various subjects including social, business, and health sciences (Pham, Tučková & Jabbour 2019; Malik, Singh & Chan 2017; Hotchkiss & Lesher 2018). It is conducive to calculating direct and indirect effects in single and multiple mediator models (parallel and serial), two- and three-way interactions in moderation models along with simple slopes and regions of significance for probing interactions, and conditional indirect effects in moderated mediation models with a single or multiple mediators or moderators (Hayes & Rockwood 2017). For estimating whether the effects of confirmation on customer satisfaction are strengthened or weakened for the high and low familiarity of Fintech customers respectively, the Hayes PROCESS model is utilized.

H10 - The effect of confirmation on customer satisfaction are strengthened for users with a high familiarity of Fintech, and weakened for users with low familiarity of Fintech.
The model consists of a dependent variable, Y = SAT, an independent variable, X = CONF and a moderator M = FAM. The sample size is 590.

Moderation implies an interaction effect. The independent variable or a predictor can have an impact on the dependent variable or an outcome. However, the direction and magnitude of the impact can be reversed by a moderator through enhancing, buffering and antagonistic. Enhancing means increasing the moderator would increase the impact of the predictor variable on the outcome

variable. Buffering means increasing the moderator results in decreasing the effect of the predictor on the outcome. Antagonistic relationship means a reversed relationship.

Regression tests can be performed to the moderation effect after dummy coding categorical variables, centering the variables and creating the interaction effect(s) manually. However, Process Macro by Hayes does this automatically.

Table 5.20: Model Summary – Outcome FAM

R	R-sq	MSE	F	df1	df2	p
0.3936	0.155	0.6114	107.817	1.0000	588.000	**0.0000**

Table 5.21: Model Summary – Outcome SAT

| 0.5394 | 0.2909 | 0.3745 | 120.428 | 2.0000 | 587.000 | 0.0000 |

The first model is without the interaction effect, whereas the second model is with the interaction effect. The models are statistically significant as the p-value is equal to 0.000.

Table 5.22: Model – CONF

	Coeff/Effect	SE	T	P	LLCI	ULCI
constant	3.4596	0.2141	16.162	0.0000	3.039	3.8801
CONF	0.3899	0.0376	10.3835	0.0000	0.3162	0.4637

Table 5.23: Model Summary – Outcome SAT

constant	2.6964	0.2014	13.392	0.0000	2.301	3.0919
FAM	0.1723	0.0323	5.3371	0.0000	0.1089	0.2357
CONF	0.3612	0.032	11.2956	0.0000	0.2984	0.424

Table 5.24: Direct effect of X on Y

| Int_1 | **0.3612** | **0.032** | **11.2956** | **0.0000** | **0.2984** | **0.424** |

The direct effect of confirmation on customer satisfaction is statistically significant positive effect.

Table 5.25: Indirect effect of X on Y

	Effect	Boot SE	Boot LLCI	Boot ULCI
FAM	0.0672	0.0203	0.354	0.1152

Whether a variable mediates or moderates the relationship between an independent variable and a dependent variable is determined by looking at the upper and lower value of the CI. Since the CI

includes the value 0, it can be affirmed that the indirect effect of the IV on the DV is statistically significant.

Number of bootstrap samples for bias corrected bootstrap confidence intervals is equal to: 5000
Level of confidence for all confidence intervals in output: 95.00 and 0.2984

The direct effect coefficient between confirmation and customer satisfaction moderated by familiarity was 0.3612 and its corresponding p-value is 0.000. As the p-value is less than 0.05 level of significance, it can be stated that the effects of confirmation on customer satisfaction are strengthened for users with high familiarity with Fintech, and weakened for users with low familiarity with Fintech. Therefore, the study rejects the null hypothesis and supports the alternate hypothesis.

5.10 SUMMARY

After the data had been cleaned, there were a total of 590 completed survey questionnaires for further analysis, according to the current chapter. Using the completed surveys, this study examined the demographic profiles of the respondents as well as the descriptive statistics of the variables using SPSS version 23 software. As a result, Structural Equation Modelling was carried out using AMOS version 26 in this study. Two stages were used to create a structural equation model: first, confirmatory factor analysis (CFA) or the measurement model; and second, the structural model (Hair, Bush & Ortinau 2006). This chapter validated the CFA in two stages: first, using Goodness-of-Fit indices, and then using Construct Validity. The findings of this study revealed that the validity of all goodness-of-fit indices and variables exceeded the minimum requirements. Following that, this study assessed the structural model and hypotheses, with the

results revealing that 10 of the 14 hypotheses given in the study are justified. These findings will

be explained in further detail in the following chapter.

CHAPTER SIX: DISCUSSION

6.1 Introduction

The previous chapter reported the results of the research examining the impact of eight positive and negative factors of Fintech (namely economic, convenience, seamless transaction processing, perceived service quality, security risk, legal risk, operation risk and financial risk) on customer repurchase intention, loyalty and financial performance through confirmation, familiarity and customer satisfaction. This study has developed a framework that integrates the propensity factors to use Fintech and its relation to customer satisfaction, repurchase intention, loyalty and financial performance of banks. The proposed model was developed based on Expectation Confirmation Theory (ECT). According to the path analysis, the results from Chapter Five present the hypothetical associations between variables revealing that ten out of fourteen hypotheses proposed in the study are supported. This chapter discusses the developed hypotheses and describes whether the data analysis has supported or rejected them, along with justification from the relevant literature. This chapter also tends to answer the study questions and objectives through validation of the main variables, hypotheses and interpretations of the results. Finally, the chapter is concluded by summarizing the results and implications of Fintech user experience attributes and bank financial performance in the context of the UAE.

6.2 HYPOTHESIS TESTING

This section summarizes the research hypotheses and explores the results of each hypothesis test in relation to the existing literature. Table 6.1 shows all fourteen study hypotheses that were analysed to determine that the main factors in confirming customer expectations of using Fintech, in addition to relation to bank financial performance via familiarity, customer satisfaction,

repurchase intention and loyalty. In addition, in the sub-sections, the results of each hypothesis

will be discussed.

Table 6.1 Hypothesis Testing

Hypothesis	Variables	Finding
H1	Economic benefit has a positive effect on confirmation of expectation towards Fintech	Supported
H2	Convenience has a positive relationship to confirmation of expectation toward Fintech	Not supported
H3	Seamless transaction processing has a positive relationship to confirmation of expectation toward Fintech	Not supported
H4	Perceived service quality has a positive relationship to confirmation of expectation toward Fintech	Supported
H5	Security risk has a significant relationship to confirmation of expectation toward Fintech.	Supported
H6	Legal risk has a significant relationship to confirmation of expectation toward Fintech	Not supported
H7	Operational risk has a significant relationship to confirmation of expectation toward Fintech	Supported
H8	Financial risk has a significant relationship to confirmation of expectation toward Fintech	Supported
H9	Confirmation is positively associated with customer satisfaction	Supported
H10	The effects of confirmation on customer satisfaction are strengthened for users with high familiarity with Fintech, and weakened for users with low familiarity with Fintech	Supported
H11	Customer satisfaction has a positive effect on repurchase intention	Supported
H12	Customer satisfaction has a positive effect on customer loyalty	Supported
H13	Repurchase intention has a positive effect on the financial performance of banks	Not supported
H14	Customer loyalty has a positive effect on the financial performance of banks	Supported

6.3 FINTECH POSITIVE DIMENSIONS AND CONFIRMATION OF EXPECTATION

Perceived positive factors of services maintain an enduring leading position in the area of management (Melewar et al. 2013). Prior studies have indicated that consumer satisfaction and intention are predictable by consumer intent to consume the product or service given their positive factors toward it (Abramova & Böhme 2016; Benlian & Hess 2011; Farivar and Yuan 2014; Lee, Park & Kim 2013; Lee 2009; Lee, Chae & Cho 2013). Fintech has increasingly been used in the financial industry making financial information accessible to customers and promising various benefits. Prior literature has considered three major benefits of Fintech: economic, convenience and seamless transaction (Ryu 2018; Stewart & Jürjens 2018; Belanche; Casaló & Flavián 2019; Razzaque et al. 2020; Barbu et al. 2021). Accordingly, this study examined the three factors that are suggested by the literature, in addition to the perceived service quality dimension as proposed by Belanche, Casaló & Flavián (2019) to study Fintech from several abstract dimensions.

6.3.1 ECONOMIC BENEFIT

Economic benefits are related matters that deal with the cost of transactions, applied interest rates and pricing of services that are established by banks (Featherman & Pavlou 2003; Mohammed et al. 2019; Levesque et al. 1996; Lee & Cunningham 2001). Dootsoon et al. (2016) defined economic benefit as the tradeoff between transaction costs and resulting benefit. Also, Mattew et al. (2013) found that customers are generally looking for value transactions, and the more price-sensitive are the more customer positive attitude and satisfaction. According to Ryu (2018), Fintech applications provide lower transaction costs to customers compared to traditional financial services by directly initiating and completing transactions without intermediates. This

notion has been proven by the result of this study, the results of this study show that economic benefit has a positive impact on confirmation of expectations, this means that customers in the UAE were able to confirm that prices of Fintech products and services are consistent with its promises of lower costs and financial gain. Hence, economic benefit has a strong significant correlation with confirmation of expectation. This finding shows that customers do care about service prices for Fintech products when implemented through digital banking platforms.

This result in lines with prior studies that have explored the dimensions of economic benefit in assessing Fintech transactions, including those by (Ryu 2018; Mbama & Ezepue 2018; Razzaque et al. 2020; Barbu et al. 2021). Thus, this study proposed that economic benefit has a positive relationship with customer confirmation of expectation towards Fintech (H1). The findings of this research reveal that economic benefit has a positive impact on confirmation of customer expectations towards Fintech with a significate path estimate of 0.196(t-value = 4.673, P-value=.000), so Hypothesis (1) is supported. Consequently, this is consistent with prior studies which are based on the customer experience of Fintech or online banking, such as those of Ryu (2018), Mbama & Ezepue (2018), Razzaque et al. (2020) and Barbu et al. (2021). These studies have shown that economic benefit influences the persistence of customer experience and willingness to continue using Fintech. Since the savings are apparent in the customer's pocket, it greatly contributes to their satisfaction. Hence, financial savings contribute to meaningful customer experience in using technology.

Barbu et al. (2021) argued that economic benefit is the main determinant factor of perceived value that influences customers to continue using Fintech. It, thereafter, impacts loyalty. Also, this study pointed out that Fintech has contributed to providing services at competitive prices while maintaining service quality. In addition, Mbama and Ezepue (2018) and Keisidou et al.

(2013) studied the contributed factors on customer satisfaction of using online banking and found that lower costs had a positive effect on customer satisfaction. Accordingly, the effect of lower prices of Fintech services is essential to determine a positive factor of using Fintech.

6.3.2 CONVENIENCE

Convenience refers to a customer's ability to carry out transactions anytime and anywhere (Okazaki & Mendez 2013). Kim and Bernhard (2014) viewed convenience in financial services as the level of making financial products and services accessible to customers, which makes the user feel less cognitive and physical burdens in terms of time and effort. In addition, the convenience factor has been recognized as the main service quality that drives customers' continuity to conduct banking services, the study was done by Jun and Palacios (2016) in the USA. Since this study also considers service quality as a measure so convenience factor results would be analyzed in parallel to service quality. Prior studies had suggested that using Fintech in financial transactions would enable customers to have mobile and flexible access to various transactions in which convenience is marked as the main driver for a customer to choose Fintech. The result of the this study revealed that the convenience factor does not have significant relationship with customer confirmation of expectations (H2) with a path estimate of 0.020 (t-value = 0.351 and p-value > 0.05. This result shows that digital banking platforms to conduct Fintech products didn't proven to be conveniently for the customers. The possible explanation is that Fintech banking users might have faced delays in receiving or processing online payments or experienced problems with the length of time involved in waiting for the website or figuring out how to operate.

Although the finding of this study is not consistent with prior studies who confirms the significant importance of convenience to Fintech transactions however, it is worth mentioning that the

majority of previous studies depend on customer perception of using the service rather than actual usage (e.g. Ryu 2018; Liu et al. 2012; Al-Malkawi, Mansumitrchai & Al-Habib 2016; Razzaque et al. 2020). Since this research focuses on actual customer feedback after Fintech usage so a variation on the results is expected. However, a few studies such as those of Mbama and Ezepue (2018) and Keisidou et al. (2013) have found similar results that convenience has weak or no association with the customer experience of using digital banking in the banking sector. Therefore, there is variation between customer perception of Fintech and the actual performance of the service. As stated by Dwivedi, Alabdooli and Dwivedi (2021) that UAE Fintech and remittance companies provide less time to complete financial transactions than traditional banks, which need more time to complete transactions in UAE.

The explanation of this study result is that there is no consensus among authors that the use of financial technology saves a lot of time for customers (Ryu 2018; Liu et al. 2012; Al-Malkawi, Mansumitrchai & Al-Habib 2016; Razzaque et al. 2020.) However, Fintech service comes with its protocols in the banking sector to validate financial transactions and it requires certain bank approvals (Thakor 2020). Accordingly, the bank marketing side should accentuate the full convenience of the systems to cater efficiently to the different banking needs of users.

6.3.3 Seamless Transaction Processing

Zavolokina, Dolata and Schwabe (2016) described seamless transaction processing as the capacity to conduct the financial transaction in an easy and speedy platform and to eliminate traditional financial institutions like banks through the transaction process. Furthermore, seamless transaction processing is a crucial feature of Fintech transactions (e.g. lending, money transferring, stock trading, P2P lending and investing). The third result of this study showed that seamless transaction processing has no significant relationship with customer confirmation of expectations with a path

estimate of -0.032, and a t-value of -0.550 (p-value > 0.05). The result is inconsistent with the previous studies of Ryu (2018) and Razzaque et al. (2020) who concluded that seamless transaction processing has a significant impact on customers' adoption of Fintech services. However, it is worth mentioning that these studies were depending on customer perception and expectations to use Fintech and not based on actual use. Likewise, the discrepancy of results might lead to an important factor that the actual usage of Fintech varies from its promises.

The result of the present study, however, is consistent with Hu et al. (2019) who found that the seamless transaction process of Fintech was not determined in terms of easiness and concluded that it has no significant impact on users' adoption. Hu et al. (2019) rationalized this finding due to the user's unfamiliarity with Fintech terms and conditions related to the complexity of Fintech transactions. To mention that, in this study, the risk of user familiarity was included by considering familiarity as a moderator between confirmation and satisfaction considering the criticality of Fintech transaction in nature. The possible explanation of insignificance of seamless transaction processing that banking sector transactions requires to be validated from central bank, which might delay transaction processing. This is related to the findings of (Thakor 2020), that Fintech startup companies offer user-friendly financial products and maintain smooth and easy transactions since they do not require third-party approvals, unlike the banking sector where they need to coordinate with central banks and eliminate any financing risk. Accordingly, on the bank marketing side, transacting seamlessly on the bank digital channels requires to be considered, bank should accentuate the full functionality of their systems to cater efficiently to the various banking needs of users.

6.3.4 PERCEIVED SERVICE QUALITY

Akhtar et al. (2011) has described service quality as the key element in determining business success especially in banks, and is considered to be a strategic element that can be utilised to earn above-average profits. Service quality refers to meeting and exceeding customer expectations, being accessible and reliable source of transaction in the financial platform, it originated from customer satisfaction and product quality literature (Amin 2016). It considers customers' overall evaluation and experience of the service provided, and it is based on consumer pre- and post-consumption of the product or service (Parasuraman et al. 1988; Lee 2009; Zhang et al. 2018). In the banking industry, service quality is seen as increasing customer satisfaction and contributing to profitability (Ladhari, Ladhari & Morales 2011). The result of the present research indicated that perceived service quality has a statistically positive relationship with customer confirmation of expectation towards Fintech (H4) with a path estimate of 0.230 (t-value of 4.479 and p-value < 0.001), appears to be the second positive significant determinant of customer confirmation of Fintech. This result is in line with the findings of (Keisidou et al. 2013; Amin 2016; Mbama & Ezepue 2018; Aisyah 2018; Le 2021). This means that customers were able to evaluate the post-consumption performance of Fintech products and services provided by the banks. Hence, this indicates that the better the service is, the greater the perceived value of the bank becomes.

This result reveal that Fintech providers (e.g. banks) require to consider service quality to the maintenance of firm values, especially that Fintech is a new technique but its common among customers so the decision to use Fintech is favourable to customers. Prior research results support this conclusion of service quality, and it should not be neglected (e.g. Aisyah 2018; Mbama & Ezepue 2018; Le 2021). Aisyah (2018) found that service quality has a positive influence on

customer satisfaction for the adoption of online banking. Also, Mbama and Ezepue (2018) concluded that the service quality is linked to the customers' experience, satisfaction and loyalty to the overall service quality offered by a firm. Furthermore, a more recent study by Le (2021) found that there are quality services to have a strong influence for customers to continue using Fintech post-Covid-19 lockdown. This can be explained by customers having a positive experience of using Fintech during lockdown which will be a catalyst for the continuity to use Fintech.

6.4 FINTECH NEGATIVE DIMENSIONS AND CONFIRMATION

In Fintech literature, perceived risk is explained as "user's perception of the uncertainty and the possible negative consequence regarding the Fintech use" (Ryu 2018). Based on Ryu's (2018) definition, customers are vulnerable to face risks that may arise while using Fintech (e.g. security issues, absences of regulation, major pressing issues, failed operations). In such risks, users will make usage decisions based on the bank's good reputation of Fintech, level of system familiarity and powerful marketing scheme and thereafter evaluate the perceived Fintech services. Prior literature has considered four types of risks as major risks in the Fintech context, namely financial, legal, security and operational (Ryu 2018; Stewart & Jürjens 2018; Belanche; Casaló & Flavián 2019; Razzaque et al. 2020; Barbu et al. 2021). As Fintech is an emerging and unprecedented service in the Middle East region and particularly in the United Arab Emirates, Fintech users may be exposed to face risks in Fintech offered by banks and more likely significantly affect user's experience. The present research examined four types of risk including security, legal, operational and financial risks.

6.4.1 SECURITY RISK

Security risk explained as users' expectations toward the ability of digital service providers in protecting their information from any external or internal security breaches (Oghuma et al. 2016). To clarify this, the authors added that the potential loss of customers' critical information could be due to fraud or a hacker compromising the security of the online financial transaction. In contrast, Ryu (2018) asserted that Fintech is associated with privacy attacks and the likelihood of potential loss of consumer personal data and transaction details that increase the perceived risk of Fintech. The key element relating to the security risk that fraud or hacker interruption prompts user's monetary loss and abuses client privacy is a significant concern of many online users (Ryu 2018). The fifth finding reveal the significant impact of security risk to customer confirmation. It indicated that security risk has a statistically significant relationship to confirmation of expectation toward Fintech (H5) with a path estimate of 0.216 (t-value= 4.394, p-value < 0.001). Accordingly, the result indicated that customers have a concern on the security risk of Fintech. Therefore, this result confirmed the findings of studies undertaken previously by other researchers (e.g. Liu et al. 2012; Abramova and Böhme 2016; Mbama & Ezepue 2018; Melewar et al. 2013; Lee et al. 2013; Razzaque et al. 2020, among others). Notably, Razzaque et al. (2020) likewise found that security risks were a major inhibitor for customers to use Fintech among Bahraini banks. It is worth mentioning that these study findings contradict those of Ryu (2018) who found a positive influence of security risk on the customer's perception of Fintech risks. In addition, some elements of this current study in line with previous research by (Le 2021), whereby security risk was found to be significantly associated with customers' usage of Fintech post-Covid-19 lockdown. Accordingly, security risk tends to be significant factor for customers, prior studies have found that digital banking users have concern about fraud and foremost its common concern

in mind of customers. Accordingly, Bank Fintech operation side, banks should provide strong authentication and encryption to prevent frauds.

6.4.2 LEGAL RISK

Legal risk appears to be the only insignificant factor among all risk factors. Abramova and Böhme (2016) have explained legal risk as to the absence of regulations for Fintech, or unclear legal status and lack of universal regulations and uncertainty on using Fintech for financial transactions. Furthermore, Ryu (2018) described the legal risk as the level of uncertainty in a legal situation whereby it exists when technology outpaces regulation, resulting in regulatory gaps. Ryu (2018) also noted that the government and Fintech authorities have supported the establishment of Fintech transactions and tended to create an appropriate system for Fintech transactions, especially in the banking sector (both Conventional and Islamic banks). Also, the banking sector is regulated by the government central bank, any product must be legalized and subjected to stringent risk analysis in terms of financial loss and safety concerns before it can be offered (Ryu 2018; Abramova and Böhme, 2016; Razzaque et al. 2020).

The United Arab Emirates is the Middle East's largest Fintech hub, serving as a key venue for the promotion of Islamic and conventional Fintech products (centralbank.ae 2021). Ryu (2018) stressed the importance of filling in any legal loopholes to deliver Fintech products, especially to early service users; therefore, technical defects in the law should be eliminated. The result of the present study revealed that legal risk of Fintech has almost no effect on customer expectation with a path estimate of -0.016, a t-value of -0.331and a non-significant p-value > 0.05, Hence Hypothesis 6 is unsupported.

However, prior Fintech studies legal risk was the strongest driver of user's hesitation to use Fintech (Ryu 2018; Bramova & Böhme, 2016; Gomber, Koch & Siering 2017). For example, the legal risk has the highest impact on customer adoption of Fintech in Korea, due to grey areas in the legal and regulatory framework of Fintech as observed by Ryu (2018). Notably, this finding is consistent with the result of Razzaque et al. (2020) that legal risk was not any major concern to Fintech users in Bahrain. A possible explanation for this result is that customers are more concerned with security, financial and operational risks, rather than legal risk which is more a regulatory body concern. The United Arab Emirates is an interesting case for supporting these findings because, since the establishment of Fintech in the country, the government has been the primary supporter and believer in the power of technology in changing the banking landscape and customer expectations. The Central Bank of United Arab Emirates (CBUAE) that serves as the regulatory body for the financial sector, has put in place regulations and guidelines to support the use of Fintech in the financial sector (i.e. E-KYC, Digital Payment, Regulatory sandboxing and other Fintech related policy). As a result, Fintech regulatory frameworks "Sandboxes" were created to facilitate the development of innovative banking services using Fintech. A sandbox specifies the requirements and procedures that Fintech providers must follow to transact in GCC jurisdictions like the United Arab Emirates (centralbank.ae 2021).

6.4.3 OPERATIONAL RISK

Operational risk is a significant barrier for users, as many large financial institutions have experienced significant operational losses, resulting in severe financial disruption or the institution's failure. The term "operational risk" refers to the possibility of loss due to internal processes, employees, and insufficient or faulty systems (Abramova & Böhme 2016). Users will abandon Fintech if the risks associated with the company's financial systems and operations are

high. A lack of operational abilities and immediate responses, as well as poor system functioning and insufficient internal processes, will result in user distrust and dissatisfaction, which will act as a deterrent to future use (Ryu 2018). The result of this present research indicated that operational risk has a statistically significant impact on confirmation of expectation (H7) with a path estimate of 0.152 (t-value = 3.806 ; p-value < 0.001). Hence, Hypothesis 7 is supported. This means that customers faced system failures or the website was not loading information. Therefore, minimizing operational risk of Fintech banking platform might increase customer confidence and confirm what banks are advertising of smooth and secure operation system on digital on digital platforms.

This study has provided empirical findings that are consistent with previous research (Abramova & Böhme 2016; Ryu 2018; Razzaque et al. 2020). As a result, the fact that operational risk is the primary source of risk in any financial transaction has an impact on consumer adoption of Fintech. Accordingly, with failed internal processes, insufficient employee's knowledge and systems, a consumer may perceive it as an unacceptably high operational risk in using Fintech.

6.4.4 FINANCIAL RISK

Financial risk refers to the potential loss of money in Fintech financial transactions (Forsythe et al., 2006) and includes consumers' sense of insecurity about using electronic financial transactions, which is a major barrier in Fintech transactions (Ryu 2018; Abramova and Böhme 2016; Razzaque et al. 2020). Prior research in consumer technology acceptance has discovered that perceived financial risk is a major concern driving users' perceptions and behavioral intentions regarding money transmissions (Ryu 2018; Ostuk and Bilgihan 2017; Abramova and Böhme 2016; Melewar et al. 2013). In studying the online payment behavior of consumers, Melewar et al. (2013) merged

financial risk with privacy concerns, referring to the fact that financial risk is always accompanied by consumer privacy concerns due to customer fear of fraud when using digital banking channels. According to Abramova and Böhme (2016) and Ryu (2018), there is a negative relationship between perceived risk and customer willingness to use Fintech transactions, with financial risk (loss) being the most consistent predictor of consumer behavioral intention to use Fintech. Thus, this study proposed that financial risk has a significant relationship to confirmation of expectations toward Fintech (H8), and showed a statistically significant path estimate of 0.238(t-= 4.935; p-value < 0.001; Hence, hypothesis 8 is supported.

The thesis finding explains a significant relationship between financial risk and customer confirmation of expectations of using Fintech. This result supports the developed hypothesis and is consistent with prior research findings such as those of (Razzaque et al. 2020; Abramova and Böhme 2016; Ryu 2018). In support of this finding, a recent study by Razzaque et al. (2020) has found that financial plays a major role in contributing to increase overall financial risk result from new forms of financing (replacement of traditional financial intermediation (made possible through Fintech such as P2P lending leading to counterparty) risk. Furthermore, Le (2021) stated that financial risk associated with electronic financing was one of the important factors that increased customer intention and loyalty to use Fintech post-Covid19. At present, banking transactions that its done through Fintech platforms lack of assurance that traditional banking transactions use to offer in terms of transaction confirmation or receipts. Hence, financial risk might be an issue that customers encounter while transacting online.

6.5 CONFIRMATION AND CUSTOMER SATISFACTION

The confirmation stage is critical for any service provider because when customers complete the confirmation stage, firms can redirect customers from 'non-recurrence' to 'recurrence.' As a result,

service providers must conduct an expectation assessment during the confirmation stage to compare perceived performance with prior performance and also evaluate user experience. Hossain and Quaddus (2012) concluded that service quality researchers have lagged when it comes to examining the confirmation stage. Previous research has identified confirmation as one of the critical factors influencing customer satisfaction and is widely used to study customer post-purchase behavior (Mcliver 1980; Hossain and Dwivedi 2015; Venkatesh 2011).

According to Venkatesh (2011), when the actual experience meets or exceeds the customer's initial expectation, confirmation is established, leading to user satisfaction. However, if the actual user experience falls short of the initial expectations, dissatisfaction develops, leading to dissatisfaction. The same logic should apply to the use of Fintech. According to the current study, consumer satisfaction is determined by confirmation of expectation. Even though banks' Fintech products and services share some characteristics, but they are not entirely the same in terms of IT systems, Fintech platform, quality of the system. etc. As a result, at the confirmation stage, Fintech users will compare their actual Fintech experience to their initial expectations. If their expectations are met, they will be pleased with Fintech and service providers. Therefore, the current study suggests that consumer satisfaction is driven by confirmation of expectations. Thus, this study proposed that confirmation has a positive relationship to customer satisfaction (H9). The result showed that confirmation has a significant positive impact on customer satisfaction with a path estimate of 0.331(t-value of 11.455 and p-value< 0.001; hence, Hypothesis 9 is supported. The findings of this study revealed that confirmation has a significant impact on customer satisfaction. The results of this research are consistent with prior studies from the repurchase intention-related literature (Hossain and Quaddus, 2012; Cen et al. 2010, Lee and Kwon 2011, Hossain and Dwivedi 2015; Zhou et al. 2018). It worth to mention that the path between confirmation and satisfaction was

moderated by user familiarity. Although there were non-significant factors like convenience m seamless transaction processing and legal risk however customers tend to be satisfied from the provided Fintech platforms in the banking sector. One interpretation is that digital banking is already very common platform for banking consumers and most of customers view it as their favorable platform to conduct banking (Mbama and Ezepue 2018; Keisidou et al. 2013). Also, according to the finding of Venkatesh and Davis (2000) that the usage of online banking is voluntary and not mandatory hence, although customers may worry and concern about the risk factors of online transaction executions however they are satisfied with overall provided services.

6.6 MODERATOR- FAMILIARITY

Gefen et al. (2003) explained familiarity as a person's understanding of an entity, often based on previous learning, interactions, and experience. Belanche, Casaló and Flavián (2019) discovered that the availability of interpersonal subjective norms (i.e. familiarity) among customers when using digital financial services influences customer adoption. Earlier research in technology-based services demonstrated that other than the cease of using the service, customers with a high familiarity with using digital services or interacting with robots in banks have more direct positive satisfactory experience (Fazio & Zanna 1981; Belanche, Casaló & Flavián 2019). In turn, when familiarity is low, information is limited, resulting in consumer behavior intention toward the service based on others' opinions or information from mass media, which may lead to a dissatisfactory experience (Venkatesh & Davis 2000). Furthermore, according to Singh et al. (2017), the use of Fintech in finance created a disruptive innovation not only for firms, but also for customers who encountered difficulties in using applications, increasing dissatisfaction. However, familiarity can assist to reduce user dissatisfaction and uncertainty.

Thus, this study proposed that confirmation on customer satisfaction is strengthened for users with a high familiarity with Fintech, and weakened for users with a low familiarity of Fintech (H10). The result found a path estimate between confirmation and familiarity of 0.3612with a t-value of 11.295 and a p-value< 0.001; hence, H10 is supported. The findings are explained by the fact that familiarity has a significant influence on the degree to which customers will be satisfied with Fintech. Hence, it confirms the positive moderation effect familiarity has on the relationship between confirmation and satisfaction. The findings of this study are consistent with previous literature (e.g. Belanche, Casaló & Flavián 2019; Singh et al. 2017; Venkatesh & Davis 2000). As expected, the findings indicate that familiarity between confirmation and satisfaction, implying that a high level of user familiarity with Fintech platforms may mitigate the negative influence of low satisfaction or risk factors on users' continued intention, and is more likely to be considered a useful platform to use. As a result, the finding might explain that familiarity plays an important role in handling the financial services within the context of Fintech in UAE banks (Conventional and Islamic ones). The main interpretation is that the Fintech banking platforms requires user knowledge on the functionality of the websites and what they need to expect. When customers are familiar with the online system, they will realize the essence of the system and appreciate the technology and thus they will not complain about inconvenience or risk factors.

6.7 CUSTOMER SATISFACTION, REPURCHASE INTENTION AND CUSTOMER LOYALTY

Consumer satisfaction is widely regarded as an important factor in determining clients' future purchase intentions (Licata & Chakraborty 2009; Ladhri et al. 2011). In the banking industry, customer satisfaction is based on the overall assessment of the level of services provided. Furthermore, it believes that satisfaction will lead to improved financial performance and

increased customer loyalty (Keisidou et al. 2013; Mbama & Ezepue 2018; Liang, Wang & Farquhar 2009). Therefore, since Fintech is the provision of financial services and market, user satisfaction with offered services is highly valued, ensuring positive behavioral purchases. Numerous empirical studies support the relationship between satisfaction and customer retention leading to a loyal customer (Mbama & Ezepue 2018; Liang, Wang & Farquhar 2009). Thus, this study proposed that customer satisfaction has a positive effect on repurchase intention (H11). The findings revealed that customer satisfaction has a significant positive impact on repurchase intention and the reported path estimate is0.756, with a t-value of 19.477 and a p-value < 0.001; hence, Hypothesis 11 is supported. The findings of this study are consistent with previous studies in the literature (e.g. Zeithaml et al. 1993; Raza et al. 2015; Mbama & Ezepue 2018; Ladhri et al. 2011).

Furthermore, this research also proposed that customer satisfaction has a positive effect on customer loyalty (H12). The results showed that customer satisfaction has a positive relationship with customer satisfaction and reported a path estimate of 0.785 with a t-value of 20.365 and a p-value < 0.001; hence, Hypothesis (12) is supported. This result is consistent with previous studies which revealed that customer satisfaction has a positive relationship with customer loyalty (Ryu 2018; Fathollahzadeah et al. 2011; Keisidou et al. 2013; Mbama & Ezepue 2018). The significant result of H11 and H12 suggest that banks are effectively using tools to improve customer services of bank customers to give customers a real-time looks to their bank accounts like chatbots, mobile apps and machine learning. The results proof that bank customers are loyal their financial institution which determine their future intention to use.

6.8 REPURCHASE INTENTION, CUSTOMER LOYALTY AND FINANCIAL PERFORMANCE

According to Fathollahzadeah et al. (2011) and Kim et al. (2012), it is widely acknowledged that customer loyalty and repurchase intention play an essential position to approximate company profitability. It is also recognized that a positive customer repurchase intention and loyalty have the potential to increase organization income and lower costs, resulting in the earning of the above-average returns (Liang, Wang & Farquhar 2009). Although financial performance is not often measured in marketing literature, the researchers who have included it in their studies suggested that customer loyalty and repurchase intention result in better financial performance (Reichheld et al. 2000; Anderson et al, 1994; Ladhri et al. 2011; Keisidou et al. 2013; Mbama & Ezepue 2018). Thus, this study proposed that repurchase intention has a positive effect on the financial performance, measured by ROA and ROR, of banks (H13). The result found that repurchase intention has no significant impact on the financial performance of banks and reported a path estimate of -0.118 with a t-value of -1.416, a p-value > 0.05; hence, Hypothesis 13 is unsupported. The result of this research is consistent with the previous studies (e.g. Eklof et al. 2017; Keisidou et al. 2013; Mbama & Ezepue 2018; Tarigan & Hatane 2019).

Furthermore, this research also studied that customer loyalty has a positive effect on the financial performance of banks (H14). The result indicated that customer loyalty had a significant positive impact on the financial performance of banks with a reported path estimate of 0.177(t-value of 2.105 and a p-value < 0.001; hence, Hypothesis 14 is supported. Although this result is consistent with previous literature (Fathollahzadeah et al. 201; Kim et al. 2012, Mbama & Ezepue 2018), however, it is contrary to the findings of (Keisidou et al. 2013; Tarigan & Hatane 2019). Accordingly, in relation to the effect of customer repurchase intention and loyalty on the financial

performance of the banks in the UAE, the result did not confirm what the literature had suggested in terms of repurchase intention; however, banks in the UAE can improve their financial performance through meeting customer experience and creating a good banking experience, which improves loyalty. As a result, increased customer loyalty for the bank's products or services will have a significant impact on the bank's financial performance. According to Mbama and Ezepue (2019) and Kim et al. (2012), loyal customers pay a premium service, refer friends, spread positive word of mouth and require fewer service costs to retain them. Hence, repurchase intention can be achieved through loyal customers.

6.9 JUSTIFICATION OF THE OVERALL RESEARCH FRAMEWORK

This study used discriminant and convergent validity to ensure that the notion of interest is accurately represented by the variables measured. The convergent reliability assumes that the indicators evaluating certain variables share a great and a similar proportion of variance. Average variance extraction (AVE), factor loading and composite reliability can be used to test convergent validity. A standardized regression weight of more than 0.50 should be there for factor loadings for all the variables, crucial ratios (t-values) must be higher than 1.96 (Hair et al. 2010). Hence, most of the study figures demonstrated AVE > .5 achieved, in exception to seamless transaction processing and satisfaction constructs were AVE marginally less than .5 but composite reliability was higher than .7 which is considered to be acceptable and not a major concern; hence, convergent validity is supported for this research (Fornell & Larcker 1981). Thus, these results indicate convergent validity. While discriminant validity is defined as "the degree to which two conceptually similar concepts are distinct" (Fornell & Larcker 1981). A significant discriminant validity occurs when the AVE is higher than the squared correlation estimates for the variables. Hence, all figures demonstrated a significant level of discriminant validity, as AVE is greater than

the estimate of the squared correlation below the diagonal line. Thus, discernment validity is achieved in this study.

In this study, Cronbach's alpha (α) was also employed to measure the internal consistency of the study constructs. The outcomes of this research showed that all variables have a satisfactory Cronbach's α, which ranges from 0.709 to 0.955, and all items in terms of Cronbach α stand at 0.963. All the values exceeded the agreed standard of 0.7 recommended by Nunnally and Bernstein (1978). Thus, the results show that the reliability of all measurements scale is satisfactory. Hence, all the variables of this research have shown satisfactory internal reliability and validity.

The information technology acceptance in services is conceptualised based on customer-perceived benefits and risks by the information sharing literature. Customers want to know the expected value of technology usage, considering both the benefits and risks. Customers will purchase the product or service if the benefits outweigh the risks. Also, a typical customer perceives the benefits and risks of any service (i.e. Fintech) by the comparison between delivered and anticipated service performance. Nowadays, consumers have greater expectations due to the new technologies that have been driving the financial sector, in which customers are more worried about cost reductions and financial gains from transactions. In the case that customers perceived Fintech provided in the banks is risky and not worthy, they might look for another service provider (Mbama & Ezepue 2018; Kim et al. 2012).

According to Ryu (2018), the evolution of traditional financial services has created modern-day digital technology that made the services cheaper, more standardized and reliable. It enables competitors to offer enhanced or equivalent versions of any new service. Banking, like other service industries, it is facing changing customer expectations, increased competition, and modern technologies, making it difficult for banks to remain relevant to customers. As a result, banks must

achieve customer satisfaction, loyalty and retention through the measurements of benefits and positional risks of using Fintech.

In fact, the developing literature on Fintech has been focusing mainly on consumer influential factors (benefits and risks) to adopt Fintech (Abramova & Böhme 2016; Stewart & Jürjens 2018; Ryu 2018; Barbu et al. 2021). But what has been left is to study the actual usage behavior of Fintech since it has been integrated into the financial sector. Ryu (2018) proposed a model representing benefit and risk factors (namely perceived benefits: economic benefit, seamless transactions, and convenience; while perceived risk: financial, legal, security, and operational risks) of consumer intention to adopt Fintech in Korea region. The recent studies on Fintech and consumer relationships are mainly replicated by Ryu's (2018) model but in different regions (Barbu et al. 2021; Razzaque et al. 2020). A recent study by Razzaque et al. (2020) focused on Fintech service providers' (Bahraini banks were used) opinions on the factors that make the customers willing or hesitant to use Fintech based on the perceived benefits and risks. Also, the research by Ryu (2018) was replicated. In fact, (Ryu 2018) proposed future studies to consider additional factors that might show significance over time due to the use of Fintech. Hence, the majority of these studies stopped at customer intention to use Fintech, excluding customer experience, satisfaction, loyalty or other variables.

Accordingly, the main novelty of this study is to analyze the benefit and risk factors of Fintech platform in the banking sector based on the actual usage of the service. As well as to reflect on the customer behavioural outcome in terms of satisfaction, loyalty and repurchase intention. As well to study the financial performance of the banks specially when it comes to Fintech investment as bank revenue has been investment to enhance their performance, therefore its worth to analyze bank performance.

Also, the addition of service quality as part of perceived benefit of Fintech, it give exploration about the overall service evaluation provided by the bank. According to the literature, service quality is the difference between actual and expected service performance (Parasuraman et al. 1991). Therefore, service quality is an important factor that requires to be studied within Fintech. According to Venkatesh and Davis (2000), most of the studies have failed to consider the familiarity variable that is essential when studying consumer experience or satisfaction of using a service. Also, to the best of the researcher's knowledge, prior studies on Fintech have not considered studying customer satisfaction, loyalty and repurchase intention and its implication on the financial performance of the service provider. Mbama and Ezepue (2018) studied customer examples of using digital banking and its effect on satisfaction, loyalty and the implications of these on banks' financial performance. They proposed that future studies should expand on the banking products due to the vast technological transformation in banks, as well as to continue measuring customer experience, satisfaction and loyalty. To accomplish this, Ryu (2018) proposed that benefit and risk factors were combined with service quality and familiarity variables, resulting in a holistic framework that analyzes customer perception of Fintech based on actual use and links to customer satisfaction, loyalty, and the effects of these links on bank financial performance (two measures of financial performance).

Users are willing/hesitant to continue using Fintech the framework is grounded by Expectation Confirmation Theory (ECT) and Net Valance Perspective (benefit-risk framework). There are many academic advantages for the present framework; these include studying customer experience of using Fintech its impact on bank financial performance. In addition, the Expectation Confirmation Theory is extended by arguing that the grouping of positive and negative factors drawn from the Net Valance Perspective is necessary to predict customer behavioral intentions

and loyalty. Furthermore, by including a familiarity dimension to the framework and covering customer individual differences, we hope to create a linkage on the relation of consumer satisfaction with regards to Fintech. Furthermore, by including the loyalty and continuance intention constructs, the study improves understanding of customers' post-purchase behavior, which can predict bank financial performance. Indeed, this study adds to our understanding of the impact of confirmation and customer satisfaction due to positive and negative factors on behavioral outcomes; specifically, the proposed model is complete and detailed of customer satisfaction, loyalty, and continuance intention, as well as their effects on financial performance in the banking sector.

The present framework also has many practical advantages and sheds light on a significant component of positive factors, specifically service quality, economic (price), convenience, seamless transactions processing and the risks that may occur while using the service, all of which influence customer satisfaction intentions and loyalty. Given that Fintech is a developing field in the financial industry with numerous technological banking supplies, service providers must maintain strong relationships with their customers in order to determine market share and customer base. In addition, the proposed framework helps in the review of bank policies and marketing strategies by assessing customer satisfaction and behavioral intentions of consumers. Furthermore, it provides the driving reasons for customers to move into the satisfaction stage for the banking service providers by taking into account the customer's level of familiarity with using the service. Last but not least, the framework identifies the key elements that contribute to customer loyalty and retention intentions, as well as their combined impact on financial performance in the banking sector.

Basically, this research provides novel theoretical integrated model of Expectancy Confirmation Theory, Net valance, service quality and consumer behaviour factors. This integrations tend to extend the prior research on Fintech consumer stream of research by the evaluation of customer experience of Fintech in the banking sector. The findings of this research will fill the ap in literature by highlighting the antecedents of customer satisfaction with Fintech and its relation to the financial performance of banks. Accordingly, the study provides current Fintech study on the area of financial services literature.

The research results shed the lights on the influence of Fintech on banks' profitability. The results reveal that economic, perceived service quality, security risk, operational risk, financial risk are the main factors that met customer expectations after Fintech was experienced in the UAE banks. The findings related the unproven of convenience and seamless transaction processing benefits in Fintech applications in the banking sector. This finding has a great addition to the field of consumer experience and perception of Fintech, since prior research has proven that convenience and seamless transaction of Fintech are the antecedents of customer intention to use Fintech. Also, the evaluation of service quality and familiarity factors proven to be critical factors to customer satisfaction with Fintech. To the best of researcher knowledge that previous studies failed to study quality from the use of financial technology, but this study urges that quality factor is essential antecedents of customer satisfaction with Fintech in the banking sector, since banks are trying hard to provide real-time looks of customer bank accounts and upgrade overall banking experience by mobile apps, chatbots, machine learning..ect. Furthermore, confirmation also has a positive effect on customer satisfaction – moderated by familiarity - and customer satisfaction has a significant relationship with customer intentions and loyalty. In addition, customer loyalty has a positive relationship with a bank's financial performance.

As a result, there is a better understanding of the factors evaluated by Fintech consumers in banks and their impact on customer satisfaction, loyalty, and behavioral intention. Figure 6.1 summarizes the research theoretical framework and the results of path analysis.
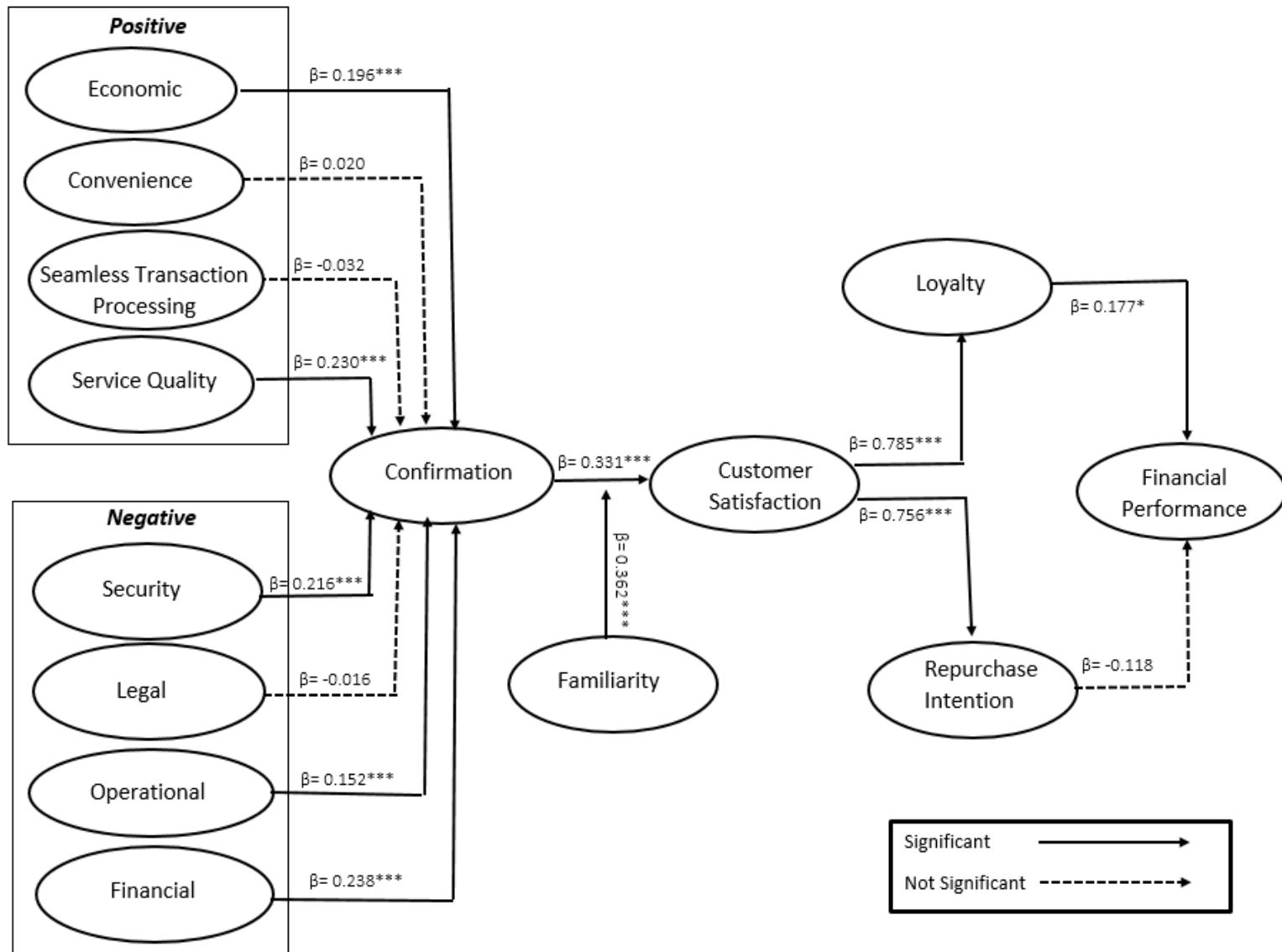
Figure 6.1: Research Theoretical Framework

7. SUMMARY

This chapter elaborated on the results of the study from chapter five, explaining customer perceptions of Fintech and its effectiveness in confirming their expectations, overall experience and financial performance. The research adopted Structural Equation Model (SEM) to test the hypotheses, the path analysis shows that four hypotheses were not significant. The study hypotheses were explained, and the final result of each hypothesis was supported by previous and current published studies. Overall, economic, service quality, security risk, operational risk and financial risk have a significant effect on confirmation of expectations. Furthermore, the discussion underlines the significant mediation role of familiarity between confirmation and customer satisfaction which is consistent with the literature. Also, the results revealed that customer satisfaction has a positive effect on repurchase intention and loyalty. Furthermore, the results revealed the impact of customer loyalty and the financial performance of banks. Accordingly, the results in the chapter show that, in Fintech, banks must consider added value derivers and customer concerns. Therefore, the main concern of banks is to meet customer needs by exceeding customer expectations, which will help them in achieving their business goals.

CHAPTER SEVEN: CONCLUSION

7.1 INTRODUCTION

The objective of the current study was to investigate the influence of the experiences of users towards Fintech on the financial performance in financial institutions among UAE banks based on Expectation Confirmation Theory and Net Valance Perspective. Based on the review of current and previous literature, and considering theoretical perspectives; an integrative theoretical framework was developed consisting of Fintech positive and negative factors (namely economic, convenience, seamless transaction processing, perceived service quality, security risk, legal risk, operation risk and financial risk), confirmation, familiarity, satisfaction, loyalty, purchase intention and financial performance. In addition, a set of hypotheses have been formulated to assist banks in addressing the challenges they are currently facing in introducing Fintech and contributing to knowledge. The thesis used a positivist philosophy and a deductive quantitative approach to examine the hypotheses. The survey instruments were developed from previous literature and validated by scholars. The questionnaire was disturbed to 590 customers of retail and corporate banks in the United Arab Emirates. The hypothesized relationships between variables were checked using SPSS 23.0 software. The results indicated that some of the positive and negative factors are major influencers for customers to use Fintech, thereby it influences satisfaction, repurchase intentions and loyalty. Also, the thesis results were able to confirm the influence of customer loyalty on banks' financial performance.

The chapter presents, section 7.2 which provides conclusions to the thesis. The study's objectives and aim are presented in section 7.3. Section 7.4 explains the research contribution and section 7.5 shows the theoretical implications. The practical implications are explored in section 7.6. Lastly, section 7.7 explores the limitations and future recommendations.

7.2 ACHIEVING THE RESEARCH QUESTIONS AND OBJECTIVES

The present study was designed with the aim to investigate the experiences of banks consumer towards Fintech and its relationship to the financial performance of banks, through the confirmation of expectations based on the actual usage of Fintech and customer satisfaction in the context of the United Arab Emirates banking sector. The familiarity construct was used as a moderator between confirmation and satisfaction to prove that positive customer knowledge of Fintech would lead to a satisfactory experience with the platform. Expectation Confirmation Theory and Net Valance perspective were primarily used to develop the research framework. Expectation Confirmation Theory helped to acknowledge the importance of customer expectations and performance in operationalizing the confirmation of expectation as the main construct to evaluate customer expectation after the experience of the service and thereafter evaluate consumer behavior and financial performance of the banks. Accordingly, the raised questions and objectives of this study were achieved in chapter five and six.

7.3 RESEARCH CONTRIBUTIONS

The findings of the study contribute to the literature, both theoretically and empirically. The following are the research's significant theoretical and empirical contributions.

- Theoretically, this thesis closes gaps in literature and extends knowledge by providing attributes of Fintech in the banking sector and their relation to customer perceived benefits, risks, system improvement and management, service marketing and improve bank's performance. to the researcher best knowledge that no prior comprehensive study has been conducted in the UAE, hence the research framework supports further studies in Fintech, banking sector, customer experience and financial performance. while there are other studies in Fintech (Ryu 2018; Barbu et al. 2021; Razzaque et al. 2020), however these studies were depended on customer perception of using Fintech from Fintech companies, this thesis results provide insights on the UAE customer experience of

Fintech in the banking sector. Also, the research contributes knowledge to other Fintech studies in the UAE (Zarrouk, Ghak & Bakhouche 2021; Dwivedi, Alabdooli & Dwivedi 2021).

The research in Fintech field is rapidly evolving and changing, hence its uniqueness. The thesis contributes to knowledge of benefits and risk factors of Fintech in the banking sector effect on customer satisfaction, loyalty and financial performance. as well, it remarks the importance of customer familiarity of Fintech system as a driving force for customer satisfaction. The managerial implication is that to improve banks financial performance and cover return of investments, bank management should pay attention to the findings of this thesis and confirmation attributes identified that provides reflection of Fintech performance in the banks, hence theoretically they can act as building blocks for further research. The thesis findings provide some similarities and differences with other research, thereby adding further contribution to knowledge.

There are research models that attempted to understand customer perception and intention to use Fintech service without relating them to satisfaction, loyalty and financial performance (Ryu 2018; Barbu et al. 2021; Razzaque et al. 2020). While, other studies investigated the relationship among, customer satisfaction, loyalty and financial performance, without customer experience or confirmation of performance (Keisidou et al. 2013; Amin 2016). Accordingly, demonstrating how confirmation of customer experience, satisfaction, loyalty, repurchase intention related to financial performance has theoretically extended knowledge in Fintech in the banking context.

Ryu (2018) and Razzaque et al. (2020) found convenience and seamless transaction processing are important characteristics that customers expect from the use of Fintech in transactions. This research finding differ from their results as the findings in this research suggest that convenience and seamless

transaction processing were not confirmed by customers who actually used Fintech in the banks. Accordingly, this study contributes in validating and extending knowledge in this field. Also, the findings in this research also suggest that service quality is significantly related to confirmation of expectations. Results in customer satisfaction, loyalty and repurchase intention are consistent with service marketing theory and corresponds to Dootson, Beatson and Drennan (2016) finding that expected perceived value attracts customers towards performing. Accordingly, this extends knowledge in Fintech in the banking sector to other studies that found economic and social values are critical in Indian e-commerce banking sector (Farivar & Yuan 2014) and convenience and quality values to influence customers in China (Yoon 2010)

- This research found that security, operational and financial risks affects customer confirmation of expectations. It extends knowledge in other studies that found that those factors are critical to customer intention to use Fintech. The findings of insignificance of legal risk may suggest that it relates more to bank management with central bank on the functionality of Fintech which has implications for future studies and theory. Also, the findings of moderating role of familiarity leading to customer satisfaction may suggest that it relates more to customer awareness and prior knowledge of Fintech applications and systems, which is bringing new insights for future study

- Previous studies have attempted to investigate customer willingness to use Fintech using Theory of Reasoned Action or Technology Adoption Model. Therefore, this research was based on the development of a framework (Section 3.2) that examines customer experience of using Fintech, through extending the Expectancy Confirmation Theory by adding customer loyalty construct in order to establish the relationship to bank financial performance. To the best of the researcher's

knowledge, prior studies did not look at Fintech from the Expectancy Confirmation Theory perspective. Expectation Confirmation Theory originated with the consumer dissatisfaction/satisfaction model that was constructed to show how consumer repurchasing behaviour can be anticipated by reviewing satisfaction levels. Hence, the study enhances the understanding of consumer behaviour towards Fintech by expanding ECT theory. To clarify, the study employed four dimensions negative factors and positive factors based on valance theory, service quality and customer loyalty of using Fintech, and its overall impact on banks financial performance through confirmation, customer satisfaction and repurchase intention had not previously been brought together in one framework (Colquitt and Zapata-Phelan, 2007).

- This study was essential in filling gaps in the literature (Section 2.3) by using Expectation Confirmation Theory (ECT). The suggested framework (section 3.2) considerably expands our understanding of positive and negative Fintech characteristics, as well as their impact on customers' satisfaction, intentions and loyalty. It sheds the light on the role of customer familiarity with using the technology and how it enhances user satisfaction. The proposed theoretical framework is fundamental in assessing the role of confirmation in connection with customer satisfaction, as well as intention to remain loyal and its connection to the bank performance.

- This research is provided empirical evidence of economic benefit, service quality, security risk, operational risk, financial risk as factors that customers have been able to confirm based on actual usage through confirmation, familiarity and customer satisfaction within the context of the banking sector. The literature review pointed out several significant concepts on the addition of new benefit constructs that may influence customer usage of Fintech, and to study actual consumer usage of

Fintech rather than on perception use. For this reason, ECT through was attempted to shed light on these matters so the gaps could be addressed. Hence, it adds new knowledge on customer evaluation of Fintech services provided by banks.

- This thesis extends the previous literature on the influential factors to use Fintech concept. The previous studies contributed to the customers' willingness to use Fintech and have no direct previous experience with Fintech. Literature has found that convenience and seamless transactions factors play a central role in customer adoption of Fintech. Considering the preliminary results of this study, which indicates convenience and seamless transactions seem unproven based on the actual use of Fintech in banks. Based on that, this research study assists in enhancing the knowledge to the level of influencing factors after the adoption of Fintech. Also, this thesis enhances the understanding that economic and service quality aspects were confirmed based on customer experience.

- Theoretically, customer actual usage of Fintech and its impact on satisfaction remains a gap in the literature. Hence, this thesis closes gaps and extends knowledge by considering attributes of Fintech and their impact on customer satisfaction which are induced by positive and negative aspects on the results of customer loyalty, intention behavior and overall banks performance. Specifically, the research framework (section 3.2) supports further study in Fintech, experience, consumer behavior and financial performance

- The thesis conceptual framework provides useful assumptions to understand Fintech performance in banks, through creating a connection between consumer behavior and financial performance.

This thesis enhances this understanding of such aspects since customer loyalty is found to have a positive influence on the banks' performance. Accordingly, this study offers solutions to the call by researchers to study bank performance to enable banks to achieve competitiveness and economics of scale. Hence, this thesis extends knowledge of Fintech effect on financial performance in banks using financial indicators (ROA and ROE). This thesis used indicators from banks' annual reports which are consistent cross-banks and lead for further studies.

- The research found the role of familiarity as a moderator between 'Confirmation and 'Satisfaction'. The result is consistent with previous studies in e-banking and digital banking; hence, it shows the similarity of customers across countries. However, the uniqueness of this thesis is that it is done on Fintech which is an evolving area using the most advanced technology; hence, it contributes to the literature and extends the theory that consumer familiarity with Fintech has a critical role in demonstrating satisfaction level for customers.

- Fintech growth has prompted a rise in research particularly in the area of customer acceptance, due to its relevance in financial services, with many studies that have been done on Fintech firms. This study also contributes to established areas of knowledge and adds to the banking field. In addition, this study also responds to the need for research, as there has been no comprehensive investigation of customer satisfaction in the formation of behavioral outcomes such as loyalty and repurchase intention in non-western countries.

- Fintech research is still evolving, previous studies on consumer acceptance of Fintech seemed to focus only on the factors that affect customer adoption of Fintech and disregarded the consumer

behavior variables that represent customer confirmation of adoption of the service, satisfaction and thereafter loyalty and repurchase intentions. This study contributes to the research since it examined whether the repurchase intention and loyalty of customers in the United Arab Emirates banking sector are affected by certain positive and negative factors. Also, it differs from prior studies in the field of Fintech that adds service quality dimensions as prior studies in the banking sector always consider service quality as a crucial dimension of digital or e-banking services. Furthermore, this study assessed whether or not customer loyalty and repurchase intentions are related to banks' performance. The evidence showed that the association between loyalty and financial performance of banks is statistically significant in the United Arab Emirates context.

- The thesis complements the previous studies on consumer ability to use Fintech. As stated earlier, previous studies focused on the reasons why customers tend to use Fintech. Since the present study completes the picture in terms of confirming the critical factors that customers found meeting their expectations. Accordingly, the hypothetical framework model provides an understanding of the significant relationship between variables, as well as the quantitative analysis results highlighted the main factors that are based on the actual customer experience in terms of meeting customer expectations and the resultant effects on consumer behavior.

7.4 THEORETICAL IMPLICATIONS

The findings of this study revealed several theoretical implications of consumer's experience, behavioral intentions and firm performance towards Fintech, and it can be practiced by the banking sector in the United Arab Emirates. The implications are the following:

7.4.1 THE DEVELOPED CONSUMER EXPERIENCE MODEL

This study developed framework (Section 3.2) based on the Net Valance's perspective and Expectancy Confirmation Theory, aiming to research customer experience of using Fintech in the banking sector and, thereafter, their behavioral intention to remain loyal and reuse the service. In addition, bank performance was a major concern which this study met to contribute to the Fintech marketing literature (Amin 2016; Ryu 2018), service improvement (Heskett et al. 2008; Thakor 2020), technology uptake (Harrison et al. 2014, Mbama & Ezepue 2018). Creating a holistic model to measure consumers' confirmation and overall experience of Fintech was a major aim of this study in which has been achieved by extending the Expectation Confirmation Theory by arguing that the grouping of positive and negative factors drawn from the Net Valance Perspective are essential to predict customer behavioural intentions and loyalty. Moreover, by adding familiarity dimension to the framework, through covering customer individual differences seeking to deeply understand its influence on consumer satisfaction of using Fintech. Furthermore, by adding the loyalty and continuous intention constructs, the study enhances the understanding of customer's post-consumption behaviour that can predict the financial performance of banks. Indeed, this study enhances the knowledge concerning the impact of confirmation and customer satisfaction due to positive and negative factors on behavioural outcomes; specifically, the presented model is more complete and detailed of customer satisfaction, loyalty and continuous intention and their effects on the financial performance in the banking sector.

Accordingly, the research theoretically offers insight into customer experience of Fintech. As it was previously mentioned, previous studies focused on the reasons why customers tend to use Fintech. And since the present study completes the picture in terms of confirming on the critical factors that customers found as meeting their expectations. Hence, the hypothetical framework model provides an

understanding of the significant relationship between variables, as well the quantitative analysis results highlighted the main factors that are based on actual customer experience in terms of meeting customer expectations and the resultant effects on consumer behavior.

7.4.2 FINTECH PERCEIVED ECONOMIC AND SERVICE QUALITY

Perceived Economic and Service Quality situation are the most confirmed factors. The results of the thesis advanced the theoretical discussion on the nature of service marketing theories and technology adoption literature in services by confirming the positive value of using Fintech economically, as well as customer measures of quality aspects of the service. Noting that in prior studies Fintech quality was not measured. So, the uniqueness of this study adds to service quality, especially in Fintech aims to contribute to the established Fintech literature benefit factors. The results of this study show that economic benefit has a positive impact on confirmation of expectations, and this means that customers in the UAE were able to confirm that prices of Fintech products/services are consistent with its promises of lower costs and financial gain. In addition, this study perceived service quality was added in the model, results indicated that this factor emerged as a confirmed factor that customers were able to measure while using Fintech. Hence, the perceived service quality factor has a strong influence on customers to continue using Fintech post-Covid-19 lockdown. This can be explained by customers having a positive experience of using Fintech during lockdown which will be a catalyst for the continuity to use Fintech.

7.4.3 FINTECH CUSTOMER EXPECTATION

The findings of this study show that both convenience and seamless transaction processing were not confirmed based on customer usage of Fintech. The established literature in Fintech usage and technology update is evident that convenience and seamless transaction processing are the crucial motivational factors for customers to use technology in service. This result is inconsistent with prior studies; however, it is worth mentioning that the majority of previous studies depend on customer

perception of using the service rather than actual usage (Ryu 2018; Liu et al. 2012; Al-Malkawi, Mansumitrchai & Al-Habib 2016; Razzaque et al. 2020). Since this research focuses on actual customer feedback after Fintech usage so a variation on results is expected. However, a few studies such as those of Mbama and Ezepue (2018) and Keisidou et al. (2013) have found similar results that convenience and easy processing have a weak or no association with the customer experience of using digital banking in the banking sector. Accordingly, there is a divergence between customer perception of Fintech and actual service performance. As a result, future research must focus on measurable points of customer experience when using Fintech.

7.4.4 THE INSIGNIFICANCE OF LEGAL RISK AND SIGNIFICANCE OF SECURITY, OPERATIONAL AND FINANCIAL RISK

Based on the result of this study, the legal risk was not a major concern to Fintech users. This shows that consumers no longer think about the legal risk that is associated with Fintech usage since it is the regulatory body of concern. Accordingly, the finding of this study confirms that customers believe in the insignificance of legal risk to them as users. This can be explained by the customers' strong belief that the government or central bank is constantly monitoring Fintech operations and ensures that consumer rights are protected.

Also, the thesis found that customers were faced security, financial and operational risks when using Fintech. Whereas the findings of this study confirm prior assumptions since it has been confirmed by the customer's experience. Hence, it adds and advances the discussion on Fintech risks in which require regular research as the technology security capability, which are constantly changing.

7.4.5 THE MODERATING EFFECT OF FAMILIARITY BETWEEN CONFIRMATION AND SATISFACTION

This study contributes to the literature by evaluating customer familiarity with Fintech usage. In this respect, familiarity was found to moderate confirmation and satisfaction. The findings show that familiarity plays an important role in the handling of financial services within the context of Fintech in UAE banks. Hence, it confirms the positive moderation effect familiarity has on the relationship between confirmation and satisfaction. As expected, the findings indicate that familiarity between confirmation and satisfaction, implying that a high level of user familiarity with Fintech platforms may mitigate the negative influence of low satisfaction or risk factors on users' continued intention, and is more likely to be considered a useful platform to use.

7.4.6 RELATIONSHIP BETWEEN CONFIRMATION, SATISFACTION, REPURCHASE INTENTION AND LOYALTY

The result of this thesis advances the theoretical discussion on the nature of service marketing theories and technology adoption literature in services as well as firm's performance studies in a high-tech world, and there is a positive relationship between confirmation, satisfaction, loyalty and repurchase intention. Fintech research is still in its early stages; previous studies on consumer acceptance of Fintech appeared to focus only on the factors that affect customer adoption of Fintech and ignored the consumer behavior variables that represent customer confirmation of adoption of the service, satisfaction, and, finally, loyalty and repurchase intentions. This study adds to the body of knowledge by investigating whether the repurchase intention and loyalty of customers in the banking sector of the United Arab Emirates are influenced by certain positive and negative factors, which have been proved in this study. Furthermore, it represents a holistic framework that focuses on consumer behavioral aspects post-Fintech encountered. Hence, this study contributes to the validation and extension of knowledge in this area.

7.4.7 FINANCIAL PERFORMANCE

Fintech effectiveness in meeting customer expectations and improving the financial performance of banks via financial ratios (ROA and ROE) were confirmed. The financial performance of banks in Fintech studies was not captured in prior studies. Hence, the uniqueness of including financial performance measures in this thesis proves the positive impact of customer loyalty on the financial performance of banks. According to Mbama and Ezepue (2018) and Kim et al. (2012), loyal customers pay a premium subscription, refer friends, spread positive word of mouth and require fewer service costs to retain them. Thus, repurchase intention can be achieved through loyal customers. This thesis considers financial performance measures (ROA and ROE) to extend the knowledge of banks' performance. This creates a linkage between customer relationship management and bank's performance literature which tends to be a gap in prior studies to measure banks' financial performance in future studies (Keisidou et al. 2013; Mbama & Ezepue 2018; Stewart & Jürjens 2018; Singh et al. 2019). It is a contribution of knowledge by using these performance indicators in Fintech research in the banking sector.

7.5 PRACTICAL AND MANAGERIAL IMPLICATIONS

The successful establishment of Fintech in the banking sector represents challenging risks for banks to consider, but also a source of beneficial factors for consumers to use, and this was proven in this study. The study's findings have several significant practical and managerial implications.

The study findings suggest that customers will use Fintech to conduct financial transactions in the banking sector. The study took place during COVID 19 Lockdown in which customers were forced to use Fintech to conduct financial transactions from home. Combining this information with the findings, as convenience and seamless transaction processing did not meet the user's expectations. Prior studies have proven that convenience, seamless transactions and economic value are the main motivators that make customers use Fintech. Accordingly, bank managers, Fintech industry players and Fintech service providers should consider Fintech mechanism that helps to process financial transactions in one pass,

seamlessly, from the start point to the final settlements in which will help to prove convenience. Also, managers should maintain the quality of Fintech services and economic values of using Fintech to expand the utilities especially since this study predicts a continuous demand for Fintech transactions. It implies that industry players and bank managers could consider strategic alliance with Fintech companies to offer customize products and services to customers in order to enhance Fintech performances and fulfill its promises of convenience and seamless transaction processing.

The research framework reflects that adopting Fintech significant to the performance of the banking industry. Also, customer familiarity has critical role in customer satisfaction of Fintech application. According to the results, there are benefit factors that have not been confirmed by the customers although they are the basic characteristics of Fintech which service provider advertises. It implies that in order to get the highest level of performance from implementing Fintech in banks, there must be clear technological management and strategic alignment with business objectives. Therefore, along with managing Fintech, managers and practitioners must understand the importance of aligning Fintech with business goals and customer expectations. As a result, embracing Fintech will assist banks in realizing the full potential of Fintech. According to Zarrouk, Ghak and Bakhouche (2021) that Emirates NBD, Emirates Islamic Bank, Mashreq, First Gulf Bank are UAE bank leaders in Fintech applications. Therefore, the findings of this study will assist these banks, as well as other banks in the UAE to review the characteristics and tools of the applied Fintech to ensures smooth operation and easiness of performing the transaction in order to enhance customer experience.

As it has been proven in previous studies, that the use of Fintech makes the customer vulnerable of risks. The results of this study assist bank managers and practitioners in the UAE to secure banking transactions against fraud or financial loss by the regular review of the available initiatives that supports validly of

Fintech . The UAE government has made significant regulations to support Fintech by implementing initiatives to help the growth of this field, for example Sandboxes in DIFC and ADGM to support Fintech structure.   Fintech field in the banking sector is growing field, reaching popularity to both service provider and customers, hence, the regulatory environment of Fintech will remain the focus point in the industry. Despite the fact, that the UAE implemented strategies to create Fintech ecosystem however the findings of this study revealed that there are tangible risks namely operational, security and financial risks from the use of Fintech, which might remain as one of the major obstacles of Fintech growth in the long run.

Moreover, the findings of this study are adequate and possibly beneficial for bank managers and practitioners in the UAE to better use artificial intelligence tools that helps to enhance customer experience, give real time look of customer account and secure against fraud. Like the implementation of chatbots, robot, mobile apps and machine learning. Thus, bank managers should direct their effort toward improve customer services that ensures benefits factors are met and much better Fintech performance in place.

This study provides managers and decision-makers with advice about Fintech delivering services to customers, as it provides important information based on the customer experience of Fintech. Hence, customers expressed their evaluation of Fintech in the banking sector and risks factors were flagged. As mentioned before, customers confirmed being exposed to security, operational and financial risks when using Fintech in their designated bank. Customers, security, financial loss and data protection are the main issues of using artificial intelligence in financial transactions. Accordingly, managers in the banking sector need to consider all the risk factors that exist in the market through implementing policies to protect customers to fully understand customer satisfaction, intentions and loyalty. Thus,

managers should direct their effort and investments toward risk-mitigation techniques in order for customers to be reassured by the investments and work being done by banks in the area of security and fraud attacks. In addition, this thesis work will help to create awareness within the banks about Fintech and the measures for competitive advantages since it represents customers' feelings about the provided service.

In addition, the research findings recognize the essential role for marketing managers in the banking sector to understand the importance of making the customers aware of the risks that they might encounter; customers might face serious financial trouble or fraud of using Fintech. Adding to that, these Fintech risks are not only intended for developing or Middle East countries, but they have been proven in developed countries as a growing matter (Ryu 2018). This new insight into the banking systems and the GCC will assist authorities in putting laws in place to protect clients and institutions, as well as raise security awareness. In Fintech, the legal risks are still unknown. Banks remain susceptible and at risk of attack, and security, data protection, and privacy are still the customer's main concerns. A relevant finding of the research is that familiarity is the key driver of customer satisfaction and determinant of the intention of using Fintech. Customers' intention to use artificial intelligence and digitalization in financial transactions may vary depending on user's level of familiarity with the technology. Accordingly, people with higher familiarity and knowledge on the banking Fintech systems are better prepared to use Fintech services as they are having positive perceptions of its usefulness; thus, it is important to run campaigns to develop an understanding of Fintech to customers. Bank management has to focus on providing integration of customer experience through optimizing the different Fintech touchpoints in financial transactions to ensure convenience features and seamless transaction processing, as well as to prioritize service quality and economic value. Banks do not sell

tangible things, and their service quality is usually determined by how well the service provider's relationships with customers are rated; Fintech transactions, in particular, are conducted online.

The internet is not a static platform, and it involves a number of touchpoints and various channels of processing such as video, telephone, and robots; thus, its clients may become confused, and transaction processing may become more complicated. In addition, bank service management must monitor employee proficiency, skill knowledge, and possession, as well as their attention to customers' wants and requests, timely and dependable service, and generally positive attitudes when dealing with customers. Also, bank managers should focus on maintaining customer satisfaction from Fintech through upholding transaction security, confidentiality and accuracy of online transactions. As a result, bank policymakers should encourage customer satisfaction based on these factors to improve financial performance.

The findings of the positive relationship between customer loyalty and financial performance should be considered by banks. The implication is that banks should focus on customer retention by building a unique value proposition of using Fintech. Fintech is an evolving technological development in its offering; thus, bank managers require to remain up to date with the future development trends. As customers would be able to compare and switch banks more easily if financial services converge and become an undifferentiated feature across all banks (Evans & Lindsay 1996). If this is the case, banks will find it difficult to maximize their profits. Continuous improvement of Fintech in the banks will lead customers to regard the service as a vital service in the future.

7.6 LIMITATIONS OF THE RESEARCH

Although the study has contributed to the series of research on Fintech, there are limitations. First, this study used a single approach to collect data from customers using closed questions through a questionnaire, which sometimes can be problematic, since the respondents will be limited to answer the questions set in the questionnaire without giving their opinion.

Second, this research has another potential limitation which is the source of financial data, in this study financial information was taken from the bank's annual reports. In most cases, this information reported is targeted towards shareholders; although prior researcher has found them useful (Keisidou et al. 2013), which can create bias on the published figures. Also, the relationships between the independent and dependent variables were measured at a certain point in time. As a result, resolving this limitation through a longitudinal study would be beneficial in further validating the findings of this research.

Third, this study focused on Islamic and conventional banking customers (Retail and Corporate), who typically share similar values and perspectives on Fintech. As a result, generalizing the results to non-users of Fintech in banking services is difficult.

Finally, Fintech is considered new to the Middle East and GCC countries. The study's findings might not apply to another country since they have been derived from one single study in one country. Hence, this study context is limited to the UAE banks context. Other characteristics of various banking services can vary significantly.

7.7 SUGGESTIONS FOR FUTURE RESEARCH

Despite the many contributions of the current study, there are directions for future research. First, the proposed model in this study evaluated the consumer experience of Fintech and bank's financial performance that will assist existing and new banks in launching Fintech in the United Arab Emirates.

However, Fintech is not limited by borders and the findings are helpful and can be used for future research in other countries. The proposed model can be replicated and extended to other Middle East or GCC countries. Also, more research is needed to determine the applicability of this framework to other organizations, such as Fintech firms, and whether other factors should be included.

Second, due to the early-stage Fintech driving financial innovation amid uncertainty and risks. This study provides a holistic understanding of the consumer experience of Fintech in the UAE banks; however, it would be instructive to have a second survey addressed to bank employees; as bank employees' perceptions will triangulate the results.

Third, to increase the efficiency of Fintech in the banking sector, another important area of research is to investigate Fintech governance structure in the banking context for risk mitigation. In addition, this study analyzed the moderating role of customer familiarity, including other subjective qualities (e.g. mass media information, interpersonal comments) or age, gender and education. These variables would moderate the relationships in the proposed framework. Also, another topic that can be addressed by future research is whether trust or bank reputation may affect banks' customer experience and financial performance.

The present study used a quantitative method, and the survey was used to collect data. Various methods can be employed to gather data in order to bring in-depth and contextual meaning to the research. Future studies could examine the proposed model in the banking sector using qualitative approach by open-ended questions as this will not limit respondents from giving their opinion. Mixed methods research may provide for a more comprehensive understanding of the results.

Finally, financial performance is not widely covered in literature, and there was no consistent methodology in literature to link consumer behavior with firm performance (Zeithaml, 2000). Future research may use non-financial performance (i.e. efficiency and customer loyalty) to compare thesis

results. Also, in the present study consumer behavior was tested just at one point in time, changes in perceptions of the service happen over time. Extension of this study to be conducted to re-examine the present theoretical framework. Future studies may consider the longitudinal research method which can be used to look at the relationship between proposed factors over an extended period.

7.8 CLOSING REMARKS

Fintech is an evolving financial innovation in the financial sector that has demonstrated banks and customers are recognizing the benefits of Fintech despite the fact that it is shown to be risky. In recent years, the proportion of banks customers using Fintech has increased and this trend is projected to continue. The UAE government is supporting the implementation of Fintech in the financial, banking sector in the UAE plays an important role in the international market Emirati bankers are knowledgeable and experienced in the use of proper investments in the bank operations especially growing Fintech trends regardless of potential uncertainty (KPMG 2021)The Emirate of Dubai is recognized as the hub of Fintech in the Middle East and Africa (KPMG 2021). Hence, this thesis presented an overview of customers' evaluation of Fintech services in the UAE banking context, supported with literature from Fintech literature, positive and negative factors, customer experience, behavioral intentions and organizational performance. Hoping to provide the foundational insights for future study for bank

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APPENDICES
Appendix A: Cover letter

.

Investigating the impact of benefit and risk dimensions on the behavioural intentions and customer loyalty to financial technology in the banking sector

Dear Sir / Madam,

I am a PhD student at The British University in Dubai conducting a study investigating factors affecting customer satisfaction based on the use of financial technology known by (Fintech) application provided by the banking sector.

Please note that:
o   Taking part in my survey is voluntary
o   Your Response will be completely anonymous
o   Your name is not required anywhere on the survey
o   All of the information will be treated as completely confidential
o   No one can identify the information you provide
o   And your answers will be used solely for this research
o   You can withdraw and stop filling this survey at any time. Without any negative consequences and without having to provide any reasons.

Filling this questionner will take you 10 : 20 minutes. Your cooperation is highly appreciated and will help in the success of this research.
If you need any further information please contact me on my email:
20181359@student.buid.ac.ae

Please ignore this questionnaire if you are not a bank customer who has used Fintech applications.

Thanks You.

Amal Hazeem AlMasafri
British University in Dubai
Department of Business & Law

Appendix B: Questionnaire for participants

Investigating the impact of benefit and risk dimensions on the

behavioural intentions and customer loyalty to financial

technology in the banking sector

1. What is your gender?

    Mark only one oval.

    ( ) Male

    ( ) Female

2. Please indicate your age group range

    Mark only one oval.

    ( ) 21 – 25 years

    ( ) 25 – 34 years

    ( ) 35 – 44 years

    ( ) 45 – 54 years

    ( ) 55 – 64 years

    ( ) Over 65

3. Please indicate your level of Education

    Mark only one oval.

    ( ) High School

    ( ) Diploma

    ( ) Bachelor's degree

    ( ) Master's degree

    ( ) Doctorate degree

4. Please indicate your bank

name *Mark only one oval.*

○ Emirates NBD Bank P.J.S.C

○ First Abu Dhabi Bank P.J.S.C

○ Abu Dhabi Commercial Bank P.J.S.C

○ Mashreq Bank P.S.C.

○ Emirates Islamic Bank P.J.S.C.

○ Dubai Islamic Bank P.J.S.C

○ Bank of Sharjah PSC

○ Abu Dhabi Islamic Bank

○ HSBC Bank Middle East Limited

○ Citibank

○ Standard Charted Bank

○ Bank of Baroda

○ National Bank of Fujairah PSC

○ Commercial Bank of Dubai P.J.S.C

○ Other

5. How long have you been a customer at this bank?

Mark only one oval.

○ Less than 1 year

○ 1 – 5 years

○ 6 – 10 years

○ 11 – 15 years

○ 16 – 20 years

○ Over 20 years

6. Please indicate type of Fintech you are using

Mark only one oval.

- ◯ Mobile payment
- ◯ Mobile remittance
- ◯ Personal financing
- ◯ Equity financing
- ◯ Apple Pay
- ◯ Samsung Pay
- ◯ Stock trading
- ◯ Buy insurance
- ◯ Automated Teller Machine
- ◯ Mortgages
- ◯ Others

7. Please indicate Most used Fintech channels to carry out banking transactions

Mark only one oval.

- ◯ Telephone banking
- ◯ Internet banking
- ◯ Mobile banking
- ◯ Others

8. Please indicate period of Fintech use

Mark only one oval.

- ◯ 3 months
- ◯ 6 months
- ◯ 12 months
- ◯ 18 months
- ◯ 24 months
- ◯ Over 24 months

9. Please indicate frequency of Fintech use

Mark only one oval.

◯ Daily

◯ Weekly

◯ Monthly

Skip to question 10

Investigating the impact of benefit and risk dimensions on the behavioural intentions and customer loyalty to financial technology in the banking sector

The following questions will ask about your opinion of the benefits of using Fintech provided by your bank. The questions are seven likert scale, indicating that:
1. Strongly disagree
2. Quite disagree
3. Slightly disagree
4. Neutral
5. Slightly agree
6. Quite agree
7. Strongly agree

10. Using Fintech is cheaper than using traditional financial services.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

11. I can save money when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

12. I can use various financial services with a low cost when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

13. To get an economic service, Fintech is worth the extra effort it takes.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

14. I can use financial services very quickly when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

15. I can use financial services anytime anywhere when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

16. I can use financial services easily when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

17. I believe Fintech eliminates the time-consuming application processes.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

18. I believe Fintech provides convenience in financial services because it eliminates the need to have intermediary or bank physical presence.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

19. I can control my money without the middleman when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

20. I can use various financial services at the same time (e.g. one stop processing) when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

21. I can have peer to peer transactions between providers and users without middle man when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

22. I feel comfortable in using Fintech functions and services provided by the bank.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

23. The bank provides services with sincere attitude when I face service and system problems related to Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

24. Fintech information provided by the bank is accurate and reliable.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

25. The bank gives me prompt services when I use Fintech.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

26. The bank gives me the right solution to my request during service and system failures related to Fintech.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

27. The overall quality of Fintech services provided by my bank is excellent.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

Investigating the impact of benefit and risk dimensions on the behavioural intentions and customer loyalty to financial technology in the banking sector

The following questions will ask about your opinion of the risks of using Fintech provided by your bank. The questions are seven likert scale, indicating that:

1. Strongly disagree
2. Quite disagree
3. Slightly disagree
4. Neutral
5. Slightly agree
6. Quite agree
7. Strongly agree

28. When using Fintech provided by the bank I don't worry about losses due to application modification or weaknesses.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

29. When using Fintech provided by the bank I don't worry about Fintech application lacks of mechanisms to reverse wrong transactions.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

30. The bank is willing to solve issues when financial losses or financial information leakages occur of any transactions done via Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

31. The bank responses to any financial losses or financial information leakages occur for Fintech transactions.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

32. The bank implements security measures to protect all of its Fintech users.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

33. The bank has the ability to verify Fintech user's identity for security purposes.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

34. The bank shows great concern for the security of any transactions done via Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

35. I feel secure using Fintech services provided by the bank.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

36. The bank has the ability to identify financial and payment frauds on Fintech Transactions.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

37. The bank has the ability to interoperability with other bank services to reduce financial losses when I use Fintech.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

38. I don't worry about financial losses using Fintech provided by the bank.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

39. My use of Fintech is confirmed due to the numerous regulations that the bank follows.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

40. I think availability of bank regulations make Fintech transactions easy for all users.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

41. There is no legal uncertainty for Fintech users.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

42. It is difficult to use various Fintech applications due to the government and bank regulations.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

Investigating the impact of benefit and risk dimensions on the behavioural intentions and customer loyalty to financial technology in the banking sector

The following questions will measure your overall expectation and satisfaction about the Fintech products and services provided by the bank as well your level of familiarity about Fintech. The questions are seven likert scale, indicating that:

1. Strongly disagree
2. Quite disagree
3. Slightly disagree
4. Neutral
5. Slightly agree
6. Quite agree
7. Strongly agree

43. My experience with suing Fintech is better than what I expected.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

44. Overall majority of my Fintech expectations were met.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

45. The service level provided by Fintech is better than what I expected.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

46. I am familiar with the range of Fintech products offered by the Bank.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

47. I am familiar with Fintech through bank marketing channels or online social media.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

48. Throughout my life I have had experience using Fintech through the bank.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

49. I have worked with or studied Financial Technology (i.e., artificial intelligence, blockchain. digitalization. etc)

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

50. Considering everything, I am extremely satisfied with my bank Fintech products, services and transaction processing.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

51. I am generally pleased with my bank Fintech services.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

52. I believe that I did the right thing when I chose to use Fintech provided by my bank.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

53. The overall Fintech services provided by my bank is excellent.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

Investigating the impact of benefit and risk dimensions on the behavioural intentions and customer loyalty to financial technology in the banking sector

The following questions will tend to evaluate customer repurchase intention and loyalty towards the banks. The questions are seven likert scale, indicating that:

1. Strongly disagree
2. Quite disagree
3. Slightly disagree
4. Neutral
5. Slightly agree
6. Quite agree
7. Strongly agree

54. In the future, I will continue to use Fintech service provided by this bank again.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

55. I prefer to use Fintech services offered by this bank.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

56. I predict I will not switch my current Fintech service provider.

Mark only one oval.

	1						7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

57. I would positively consider Fintech in my choice set

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

58. I have positive things to say to other people about using Fintech in this bank.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

59. I will recommend this bank to do Fintech to people who seek my opinion.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

60. I would encourage friends and relatives to do financial services/business through Fintech in this bank.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

61. I consider this bank as my first choice to do financial services via Fintech.

Mark only one oval.

	1	2	3	4	5	6	7	
Strongly disagree	◯	◯	◯	◯	◯	◯	◯	Strongly agree

Appendix C: Missing Values

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes[a,b]	
				Count	Percent	Low	High
ECO_1	590	5.71	1.106	0	.0	.	.
ECO_2	590	5.65	1.148	0	.0	.	.
ECO_3	590	5.72	1.106	0	.0	.	.
ECO_4	590	5.71	1.103	0	.0	.	.
CONV_1	590	5.90	1.027	0	.0	.	.
CONV_2	590	5.91	1.035	0	.0	.	.
CONV_3	590	5.91	1.021	0	.0	.	.
CONV_4	590	5.88	1.021	0	.0	.	.
CONV_5	590	5.91	1.036	0	.0	.	.
STP_1	590	5.72	1.122	0	.0	.	.
STP_2	590	5.76	1.087	0	.0	.	.
STP_3	590	5.77	1.079	0	.0	.	.
PQ_1	590	5.81	1.074	0	.0	.	.
PQ_2	590	5.71	1.101	0	.0	.	.
PQ_3	590	5.79	1.079	0	.0	.	.
PQ_4	590	5.71	1.089	0	.0	.	.
PQ_5	590	5.68	1.155	0	.0	.	.
PQ_6	590	5.74	1.090	0	.0	.	.
OP_1	590	5.26	1.437	0	.0	99	0
OP_2	590	5.29	1.421	0	.0	95	0
OP_3	590	5.44	1.251	0	.0	56	0

OP_4	590	5.45	1.217	0	.0	54	0
SEC_1	590	5.64	1.116	0	.0	.	.
SEC_2	590	5.69	1.092	0	.0	.	.
SEC_3	590	5.67	1.087	0	.0	.	.
SEC_4	590	5.63	1.134	0	.0	.	.
FIN_1	590	5.53	1.216	0	.0	.	.
FIN_2	590	5.48	1.302	0	.0	.	.
FIN_3	590	5.35	1.402	0	.0	83	0
LEG_1	590	5.55	1.203	0	.0	.	.
LEG_2	590	5.77	1.154	0	.0	.	.
LEG_3	590	5.59	1.179	0	.0	.	.
LEG_4	590	5.65	1.217	0	.0	.	.
CONF_1	590	5.64	1.099	0	.0	.	.
CONF_2	590	5.65	1.129	0	.0	.	.
CONF_3	590	5.61	1.140	0	.0	.	.
FAM_1	590	5.63	1.137	0	.0	.	.
FAM_2	590	5.65	1.143	0	.0	.	.
FAM_3	590	5.70	1.072	0	.0	.	.
FAM_4	590	5.62	1.140	0	.0	.	.
SAT_1	590	5.71	1.031	0	.0	.	.
SAT_2	590	5.69	1.061	0	.0	.	.
SAT_3	590	5.72	1.057	0	.0	.	.
SAT_4	590	5.71	1.034	0	.0	.	.
INT_1	590	5.80	1.109	0	.0	.	.
INT_2	590	5.74	1.139	0	.0	.	.
INT_3	590	5.71	1.136	0	.0	.	.

INT_4	590	5.74	1.147	0	.0	.	.
LOY_1	590	5.76	1.076	0	.0	.	.
LOY_2	590	5.71	1.115	0	.0	.	.
LOY_3	590	5.77	1.085	0	.0	.	.
LOY_4	590	5.73	1.085	0	.0	.	.
FP1_ROA	590	1.6698	1.13819	0	.0	0	0
FP2_ROE	590	10.9375	9.21970	0	.0	0	0

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

b. . indicates that the inter-quartile range (IQR) is zero.

Appendix D: Common Method Bias

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.912	38.293	38.293	19.912	38.293	38.293
2	5.629	10.825	49.118			
3	3.045	5.855	54.973			
4	2.581	4.963	59.935			
5	2.044	3.930	63.865			
6	1.801	3.463	67.328			
7	1.545	2.971	70.299			
8	1.357	2.609	72.908			
9	1.119	2.152	75.060			
10	.890	1.711	76.771			
11	.849	1.633	78.405			
12	.796	1.530	79.935			
13	.707	1.360	81.295			
14	.695	1.336	82.631			
15	.635	1.221	83.852			
16	.563	1.083	84.935			
17	.548	1.053	85.989			
18	.493	.949	86.937			
19	.479	.922	87.859			
20	.459	.883	88.743			
21	.440	.845	89.588			
22	.431	.829	90.417			
23	.354	.680	91.097			
24	.318	.612	91.709			
25	.314	.603	92.312			
26	.300	.578	92.890			
27	.281	.541	93.431			
28	.266	.511	93.942			
29	.258	.496	94.438			
30	.230	.442	94.880			
31	.219	.421	95.301			
32	.204	.392	95.693			
33	.194	.373	96.066			
34	.188	.362	96.427			
35	.171	.329	96.756			
36	.156	.299	97.055			
37	.151	.291	97.346			
38	.148	.284	97.630			
39	.143	.276	97.906			
40	.133	.255	98.161			
41	.122	.235	98.397			
42	.113	.218	98.615			
43	.100	.193	98.808			
44	.093	.179	98.987			
45	.089	.171	99.158			
46	.080	.154	99.312			
47	.076	.147	99.459			
48	.071	.137	99.596			
49	.065	.124	99.721			
50	.052	.099	99.820			
51	.050	.095	99.915			
52	.044	.085	100.000			

Extraction Method: Principal Component Analysis.