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The Readiness of the Palestinian Banking Industry to Fintech Era: Measuring the Fintech Ecosystem in Palestine

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Mohannad Abu Daqar
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Szent István University, Hungary

Name of Doctoral School: Doctoral School of Economic and Regional Sciences

Discipline: Management and Business Administration Sciences

Head of Doctoral School: Prof. Dr. H.c. Popp, József, DSC
Corresponding member of the Hungarian Academy of Sciences
Szent István University
Faculty of Economics and Social Sciences
Institute of Agribusiness

Supervisor(s): Dr. habil. Constantinovits Milán
Szent István University
Faculty of Economic and Social Sciences,

Dr. habil. Constantinovits Milán

…….

Approval of Head of Doctoral School **Approval of Supervisor(s)**

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LIST OF ABBREVIATIONS

Fintech	Financial Technology
Regtech	Regulation Technology
TAM	Technology Acceptance Model
E-TAM	Extended Technology Acceptance Model
TRA	Theory of Reasonable Action
TPB	Theory of Planned Behavior
SPSS	Statistical Package for the Social Sciences
AI	Artificial Intelligence
Millennials	Anyone born between 1981 and 1996
Gen Z	Anyone born from 1997 onward
GDP	Gross domestic product
MENA	Middle East and North Africa
PU	Perceived Usefulness
PEU	Perceived Ease of Use
TR	Trust
BR	Brand Image
PR	Perceived Risk
GS	Government Support
UI	User Innovativeness
ATT	Attitude

INT	Intention
API	Application Programming Interface
P2P	Peer-to-peer
PCI	Payment card industry
DSS	Data Security Standard
GDPR	General Data Protection Regulation
PMA	Palestine Monetary Authority
WW	World Wide
CR	Composite Reliability
AVE	Average Variance Extracted
R-square	Coefficient of determination
M	Mean
SD	Standard Deviation
AMOS	Analysis of Moment Structures
UTAUT	Unified Theory of Acceptance and Use of Technology
STP	State Through Processing
ATM	Automated Teller Machine
CCDMs	Cash and Cheque Deposit Machines
CRM	Customer Relationship Management
TQM	Total Quality Management
NLP	Natural Language Processing
FSB	Financial Stability Board
DTPB	Decomposed Theory of Planned Behavior

PCA	Principal Component Analysis
COVID-19	“CO” Corona, “VI” Virus, “D” Disease, “19” 2019

1. INTRODUCTION

1.1. Background

Economic development affected by banks as these are the main financial institutions in any country. For many year banks have been the main responsible party that work in collaboration with customers and organizations for most financial transactions (KAUSHAL & GHOSH, 2016). The Palestinian banks are part of this global impact on the developing economy. Banks take part in foreign and local exchange trading and also process payments for all their customers. Moreover, banks have a positive impact on economic growth (BONGINI et al., 2017, p.335).

It is important to investigate the most affected global trends on a bank's performance, since in this century, they face a digital transformation era in financial services. Financial Technology (Fintech) evolution is the main financial evolution in the world. Fintech is integrating Finance, Technology Management and Innovation Management together into one coherent form. (LEONG, 2018). This researcher investigated the significant role of technology and innovation in enhancing the digital transformation in the banking services. My findings show that AI plays a significant role in predicting the customers experience (AI can explain 26.4% of Customers Experience) (ABU DAQAR & SMOUDY, 2019a).

Fintech affects the entire banking industry globally. Studies show that banks have already lost a significant portion of revenues 24% to non-bank Fintech services. These results also show around 88% of traditional banks have dedicated massive efforts and resources to investigate the reasons behind their continued loss of market share in their services (transfers, payments and loans). These recent studies explore the root causes behind global transformation in financial services (STRANDVIK et al., 2018). A recent study has been published for the researcher which indicates a novel result about the role of Fintech in predicting the spread of COVID-19 (the novel coronavirus), this study revealed that the consumer's Fintech behavior before and after COVID-19, and Fintech perception after the outbreak of COVID-19 might predict 52.5% of the variance in COVID-19 spread (ABU DAQAR et al., 2021).

What is important in a research work is to link the concept with facts. Fintech is the new leader within digital transformation, the main driving force of Fintech development. There is vast use and

wide penetration of digital gadgets among companies. They employ these gadgets in tracking the financial management which began in earnest in the 1970s and 1980s (BANKS, 2001). Whereas, the country financial inclusion can be improved and have the great impact through digital innovations. Data analysis and visualization are examples that provide accurate information for a better organization and monetization of underdeveloped communities (GABOR & BROOKS, 2016).

This research work highlights one of the main determinants of Fintech's adaption to information technology and how it affects the financial services and influences the digital transformation cycle in the financial services. TAM (the technology acceptance model) is the most important model because it has an emphasis and focus on the factors that influence users' behavioral attitudes toward accepting and using technology. TAM clarifies how individuals perceive technology and reveal their technological acceptance toward the automated services such as the digital financial services (DAVIS, 1986).

This transformation in the digital structure of global financial services, and the new financial innovations in this industry, leads to create new role players in the market to handle and lead this transformation such as the main role player nowadays which is Fintech. Fintech is considered the main provider of such services to the financial institutions. Moreover, banks are forced to follow this fast pace of Fintech services. Hence, Fintech plays a dual role as a support party that lead this financial development and on the same time it considered a main rival for banks (DAPP 2017, ROMĀNOVA & KUDINSKA 2016, BENSAR & RODRÍGUEZ 2018).

When talking about bank performance, it is crucial to highlight the current ecosystem of Fintech in the targeted country. This is an indicator for banks about how the main players affect the digital transformation process in their financial services. At the same time, it supports and lead their strategies, plans, and efforts to move forward within this transformation. Fintech ecosystem refers to the most dominant players involved in this context, with the dynamics and functions managed by these players (LEE & SHIN, 2018).

Official reports revealed that around 70% of the Middle East and North Africa (MENA) population have no access to traditional banks. This proportion is varied among different regions (WENDEL, 2018). Given this demographic, Fintech providers have a great opportunity to capture this

unbanked population for their fintech products especially in the emerging markets where traditional banking have excluded much of this population (ZALAN et al., 2017).

Another important player forcing this financial transformation is the significant role played by Millennials and Gen Z in adopting the new Fintech services globally. These generations are the early adopters of Fintech services worldwide. Hence banks need to tailor their services and products to be aligned with these generations needs and expectations (ABU DAQAR et al. 2020, BRODMANN et al. 2018). These generations have the highest level of technology acceptance among all consumers and customers. They are the engine driving the Fintech innovation in the market. Hence Fintech targets this group through different digital tools such as smartphones, computers, etc. (BERRAIES et al. 2017, TAN & LEBY LAU 2016).

1.2. Statement of Problem

Banks continually look to increase revenues and reduce costs in their services, products, procedures, processes and operations. However, what if banks are threatened by the new comers effect on the overall financial services industry globally? They need to tailor all their strategies, plans and work actions to be at least in a survival mode. Their goal then is to not cease any of their basic functions and leave it to other rivals in the market. What if banks failed to follow the fast-paced digital transformation of financial services? How banks will recognize the driving factor which considered the main pressure and stress to move forward and adopt the cutting-edge technologies to enhance their systems, services and processes. This adaption is essential to match the customers' and consumer needs? What is the readiness level of banks to face this digital transformation leading to inevitable threat or opportunity?

These questions then lead to asking how aware are banks to Fintech requirements in the market? Do banks have a clear understanding about the dominant players who lead this transformation in the market? Is there an investigation and intention to adopt Fintech services among Millennials and Gen Z in the market? What opinion do these generations have about Fintech? What is the current Palestinian Fintech ecosystem status?

All these questions need explanation and it needs a thorough investigation about each of these issues. This thesis tries to discover and explore the readiness level of Banks in Palestine to Fintech revolution in the financial industry. This thesis will reveal the readiness level of banks to respond, develop and implement the technological requirements of Fintech's global services; services necessary to meet their customers' needs and demands.

The financial institutions in Palestine require this type of study to lead them toward a better decision-making process; dedicating a high investment budget considered one of the critical decisions. In situations associated with high risk, the problem is how should banks arrive at a decision? This study will provide answers and evidence to support the decision-maker. The goal is to provide the financial institution analytical tools and strategies for a better understanding of risk; and to make good evidence-based decisions, based on the tools.

On the other side, banks especially need the market overview and outlook toward Fintech adoption intention. This study will give them the recent indicators that assist their decisions and plans toward their engagement in the Fintech process.

1.3. Research objectives

The main objective of this thesis is to investigate the adaptive readiness of the Palestinian Banks to Fintech requirements and evolution. It shall measure the Fintech ecosystem in Palestine and explore the Fintech adoption intentions of Millennials and Gen Z.

This main objective is divided into sub objectives as the following:

- To explore the readiness level of Palestinian Banks response to Fintech requirements.
- To explore Fintech's various services attractiveness to the Palestinian Market.
- To explore the usage level of Fintech Services among Millennials and Gen Z in Palestine.
- To identify Millennial and Gen Z intention level for Fintech Services for initialization within Palestine.
- To explore the Government support level for Fintech Services from the perspective of Millennials and Gen Z.
- To test the impact of E-TAM dimensions on Millennials/Gen Z Attitude through their response to Fintech services in Palestine.

- To test the impact of the E-TAM dimensions; specifically, the Perceived Usefulness for the adoption of Fintech services in Palestine from the Millennials/Gen Z perspective.
- To test the impact of E-TAM dimensions on Millennials/Gen Z Intention to adopt Fintech services in Palestine.

1.4. Research Questions

In this section, the researcher proposes five main questions to express and interpret the study objectives. Addressing these questions will provide a clear and comprehensive analysis of the Fintech ecosystem in Palestine. In addition, the researcher will provide indicators about the current Fintech trends in the market. The first two questions measure the Fintech ecosystem from the banking sector, the main Fintech player in the market. It is crucial to discover their role and their market indicators for Fintech adoption, by taking into account their current customers' base. The fifth question indicates if the dominant Fintech players (Millennials & Gen Z), within the local Fintech ecosystem, has an outlook about the Fintech infrastructure in an indirect way. Moreover, Government support is the significant driver to assist Palestinian banks' to adopt and provide a variety of digital financial services to their current and potential customers.

Q1: "What is the readiness level of the Palestinian Banks for the Fintech requirements in the financial digital transformation?"

Q2: What is the attractiveness level of the Palestinian market for Fintech services?

Q3: What is the usage level of Fintech Services among Millennials and Gen Z in Palestine?

Q4: What is the intention level of Fintech Services usage among Millennials and Gen Z in Palestine?

Q5: What is the Government Support level for Fintech Services in Palestine from the Millennials and Gen Z point of view?

1.5. Research Hypotheses

The researcher formulated five main hypotheses to explore and investigate the intended objectives in the study. The researcher intentionally formulated the First Hypothesis to strengthening the results of the Fifth question. Two different methods of analysis are used to show if the government support has an impact in the current context in Palestine in supporting the Fintech context based

on the study respondents' view. Hypothesis 5 emphasizes the results in Q4 and Q4 measuring the intention level of Fintech adoption among the targeted respondents of the study. Also, Hypothesis 5 emphasizes the main dimensions that clarify the adoption intention using the E-TAM model.

Whereas, Hypothesis 3 explains the main key predictors that influence the respondents' attitude toward Fintech adoption. From a different perspective, measuring Fintech attractiveness will highlight the identical image about what predictors have the influence on the respondents' attitude toward Fintech adoption.

Banks provided confidential data that has been revealed for the first time in a study within this discipline about the market attractiveness level. That is, how attractive can Fintech adoption be among the bank's customer base. Furthermore, measuring the current usage level of Fintech services among question 3 respondents will disclose a clear indicator in the market about what are the most influencing factors affecting customer usage. The last three hypotheses investigate the dominant factors behind the customers usage by using the E-TAM model.

H1: Government Support plays a significant role in supporting the Fintech in Palestine (From the Millennials and Gen Z point of view)?

H2: There is a significant relationship in exogenous and endogenous variables in the Fintech Adoption Intention for Millennials and Gen Z in Palestine

H3: There is a significant impact of E-TAM dimensions on Millennials/Gen Z Attitude toward Fintech services in Palestine

H4: There is a significant impact of E-TAM dimensions on Perceived Usefulness of Fintech Adoption in Palestine from Millennials/Gen Z point of view

H5: There is a significant impact of E-TAM dimensions on Millennials/Gen Z Intention for Fintech services adoption in Palestine

1.6. Significance of the Study

This thesis will provide novel evidence about the banks status in Palestine for Fintech adoption level and it also creates a new understanding for Banks Readiness Measure for Fintech Adoption and will measure and explore the Fintech adoption intention by Millennials and Gen Z in the Palestinian market. It describes a local comparison between these two generations and also a global comparison. Thus, providing a realistic indicator for banks regarding the recent intention behavior

of these generations; and also, for banks to be alerted to the innovative requirements needed by these generations.

In addition, this thesis reveals the types of Fintech services that are needed, ideal, and most favorable with consumers/customers' needs in the market. It then leads banks toward the best strategies for developing their services to meet the current and the future needs. The novelty of this research work is that is provides the first Fintech overview about the needs, status and direction for both banks and Fintech companies.

This thesis shows the main opportunities and threats for both banks and Fintech companies to exploit according to the first investigation work in Palestine in this context; where Fintech has the first new presence in Palestine.

The importance of this thesis lies in the unveiling of the benchmark criteria for Banks about their compliance to Fintech services requirements, the researcher wants to highlight one of the most critical factor in this benchmark which is the use of AI in banks systems and services, it has been noted that the majority have no AI presence in their systems; it indicates that they stress their investments in other Business Intelligence systems which required human interfere which raise the cost in their processes as these business intelligence systems required experts in this domain which make it a complex task to employ other technologies as AI in their systems. The researcher also explores, in his Fintech requirements model (banks readiness level), the importance and benefits of employing AI in banks financial systems.

2. LITERATURE REVIEW

2.1. What is Fintech?

Fintech is a cross-disciplinary topic that integrates Finance, Technology Management, and Innovation Management together (LEONG, 2018). New financial technologies or fintech have provided for a new capacity to do business. New fintech innovations have built from the foundation of global payment rails, and these have been especially popular in areas where banks do not have an established consumer base.

For the investor, it is worth noting that only about 69% of the world's population have a bank account, and of these, many cannot use digital currency to make online purchases as they lack access to credit cards or digital payment from their bank, but more than 58% of the world's population is online, and the growth rate for the online user increase is even greater than the increase in the proportion of the global population with a bank account (BBC, 2020; GLOBALFINDEX, 2017; STATISTA, 2020).

Other fintech innovations include crowdfunding applications to bypass banks and big investors and raise money, like Kickstarter, Indiegogo, Patreon, and GoFundMe, cryptocurrency based on blockchain technology like Bitcoin and Ethereum, mobile payments and banking, support applications for investments and trading, and instant insurance coverage. Fintech attracts so much investment, and so much attention, that even central banks are looking into the development of a cryptocurrency (BECH & GARRATT, 2020).

It merits to investigate the evolution of Fintech, how it developed, the period, the context, and the geographic region; Figure 1 shows the evolution of Fintech and how it classified from the beginning of 1866 until now.

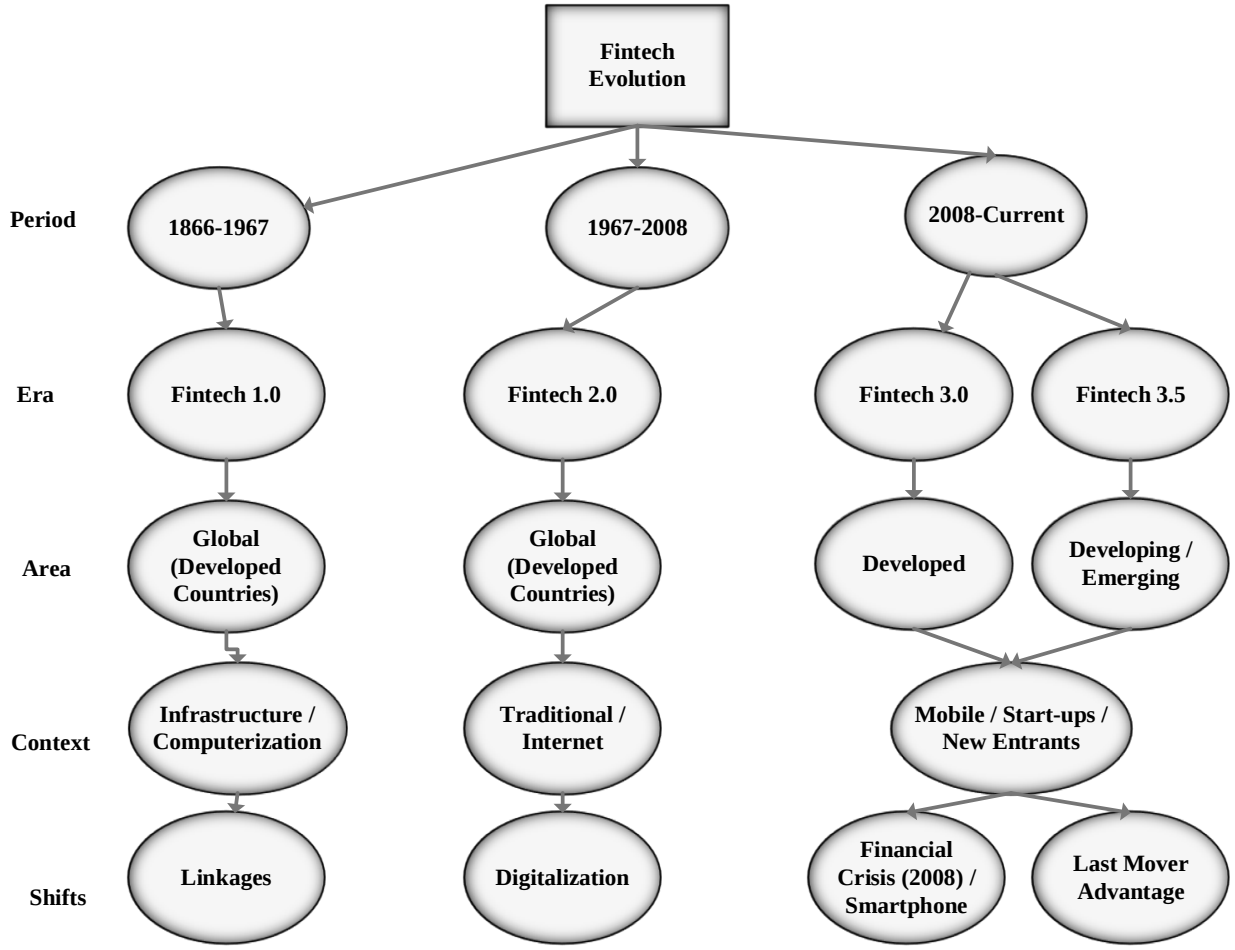

Figure 1. Fintech Evolution 1866–Current

Source: Researche'r Own Construction based on ARNER (2016, p.7)

Figure 1 shows the Fintech evolution in three main period stages, (1866-1967, 1967-2008, 2008-current time). Fintech has been categorized into three main areas Fintech 1.0, 2.0, 3.0, and Fintech 3.5, each area has its characteristics; for example, Fintech 1.0 was emphasized in Infrastructure and Computerization, while Fintech 2.0 on the Internet and the shift took place in digitalization. Moreover, Fintech 3.0 and 3.5 focused on mobile, start-ups, and new entrants, the shifts in these two periods were after the financial crisis 2008, and the evolution of smartphones. Notably, Fintech 3.5 appeared in the developing and the emerging markets in the world compared with the other Fintech areas.

2.1.1. Anxieties and fintech

There is a great deal of concern about fintech in the financial world. As NAVARETTI et al. (2018) describe, change is not welcomed in the financial world, where certainty and stability are prized. There is further the idea of increased competition, and the anxiety concerning whether banks can meet the challenge (NAVARETTI et al., 2018). To that end, two possible outcomes are envisioned with the continued growth of fintech; either an increase in healthy competition withholds all firms in the market to a higher standard with more value to stakeholders, or the increase of instability, disruption, and potential displacement of the function of the banks (NAVARETTI et al., 2018). On one hand, fintech products are more efficient, and easier to use than regular banking products, and this results in an increased user base, but on the other hand, fintech is only doing what banks do, but with greater attention to acceptance and there is no real barrier to banks adopting such innovations themselves (NAVARETTI et al., 2018).

The future of financial services in the 21 century is a little bit hard to be predicted among all the challenges that affect the development of these services; some of these challenges are the un-predicting stability in the world, once you are unable to predict or maintain part of stability other parties will have this opportunity to exploit these situations to compete especially in the financial services, Fintech became one of the dominant players in the financial industry to exploit the digital transformation and the innovation in the financial services; many factors helped these companies to have this dominant role which is; high mobile penetration rate, lower financial inclusion ratios in many countries worldwide, the role of Millennials and Gen Z, and the availability of internet access (RABIN, 2019).

2.1.2. The fintech disruption and transformation

Fintech takes advantage of the most basic aspect of all financial transactions- that they are essentially no more than shared information (BUSSMANN, 2017). Provided that agreements can be negotiated in relation to that exchange which are agree to within the financial ecosystem, the shared information becomes a transaction (BUSSMANN, 2017). In this way, fintech can leverage new efficiencies and powerful processes by automating that which is allowed within any agreement to transact. In some cases that ecosystem is the global financial system; in other cases, they are new cryptocurrency bound systems which require further fintech for exchange between

traditional and emerging financial systems. One major impact of the growing influence of fintech was a power shift, as well as increased information (and ways to visualize it) to drive further fintech innovation (BASOLE & PATEL, 2018).

The focus of Fintech is the rapid provision of financial services directly to consumers, and this direct relationship has supported new consumer capacity and empowerment. It is in this way that fintech has been driving the transformation of the industry, and banking in particular.

Four years ago, the investment in fintech was already approaching $20 billion, with American sources of investment being the largest stake (FEDERALRESERVE, 2020). The level of investment in Fintech has reached staggering proportions, but it can be expected that after an initial saturation there will be a less volatile investment environment.

2.1.3. Digital transformation and fintech

The digital transformation was the major driving force behind the development of fintech. The growing use of computers and digital tracking for the financial management of companies began in earnest in the 1970s and 1980s (BANKS, 2001). Customers Relationship Management (CRM) is one of the most efficient digital transformation tools that is aligned with consumer behavior; ABU DAQAR & SMOUDY (2019b) found that consumer buying behavior has the most influencing impact that could predict the variance in CRM by 75.75%, it indicates that the consumer behavior has the most powerful tool to alert banks and Fintech companies to make and adjust their systems to discover the trended and potential consumers directions.

The researcher investigated also in other three studies the impact of CRM on customers satisfaction and loyalty the findings revealed that CRM especially the quality of service and the system integration of the CRM could predict 64.2% of customers satisfaction, while CRM could predict 48.2% of the customers' long-term loyalty in the banking sector (IRIQAT & ABU DAQAR, 2017a; IRIQAT & ABU DAQAR, 2017b, IRIQAT & ABU DAQAR, 2018).

Digital financial inclusion can be supported and increased through further digital innovation, such as the data analysis and visualization that provides information from digital footprints in terms of better organization and monetization of underdeveloped communities (GABOR & BROOKS, 2016). Such tools, for example, can help to use data and profiling to essentially generate assets

through financial system transactions (GABOR & BROOKS, 2016). This could be in the form of valuing and therefore recognizing as equity small businesses, or traditionally held lands that allow individuals, households, and entire communities to leverage new opportunities through loans or credit.

The transformation in the digital structure of the financial services in the world, the innovations in this sector opened a new chapter for the new players in the market to drive this transformation as Fintech to provide such services for the financial institutions as banks; because banks need to follow this fast innovation procedure in the financial services, so fintech will lead banks and helped them to move forward this transformation (DAPP, 2017). According to Finextra study in 2019 recent report; they found that banks who invested heavily to digitize their financial services had to obtain higher profit, this profit comes from cost saving rather than the increase in services and banks revenues (FINEXTRA, 2019).

PayPal

One of the first non-bank fintech products to gain global popularity was PayPal. While it is essentially a payment rail, it also provides integrated storage, currency exchange, receipt of payments, and the ability to pay others either on e-commerce sites or in some jurisdictions in person (STRANDVIK et al., 2018). Consider the world market that was facilitated on eBay using PayPal. An individual located in South America could pay directly a retailer in China for a good that was unavailable to them locally, possibly by converting local currency into US dollars on PayPal, and then using American currency to pay for the sale.

The Chinese retailer would receive the funds, which would be converted into yuan when deposited to a local bank. The process would be nearly instantaneous, with no complications due to currency exchange or payment submission. In fact, it would all be tracked within the eBay system. This has greatly facilitated world micro commerce in the form of being paid for work or goods, however there is one catch. In order to use the currency outside of online platforms, it is necessary to actually withdraw the funds to a traditional bank. PayPal terms require bank funds to be deposited in the currency of the residence of the user, and this requires verification.

These withdrawals to bank accounts are all based on the post-processing clearance systems, and they are not instant. In most countries, it takes two to three days for the funds to be processed and

unavailable. It is more difficult for individuals in some countries than others. For example, because of lack of agreements between PayPal and banks in the Caribbean, PayPal users in nations without an agreement such as Jamaica must wait 90 days for the processing of a check from PayPal, which is then sent, received, and deposited by the user in their traditional Jamaican bank account, for a total processing time of close to four months (PAYPAL, 2020b). Fintech has not yet solved all of the problems that face banking customers, and the least developed regions also have the least access to the benefits and advantages of fintech, in many cases.

2.1.4. RegTech (Regulation technology)

Regulation technology or RegTech refers to new technological processes and systems to enhance compliance within the financial systems generally, and specific technologies for banking security (ARNER et al., 2016). Regtech is a form of fintech however it is directed at business rather than consumers, as a service to both traditional and fintech firms that require them (ARNER et al., 2016). These include standalone, ongoing, and cloud-based processes to, for example, deter, prevent, and identity criminal and money laundering activity and for customer verification (ARNER et al., 2016). Regtech must of course be separated from the idea of the regulation of fintech, as these are not the same, although it can be assumed that overlap can occur.

RegTech is the main player in the financial industry nowadays which is growing at a fast pace; the main aim of these RegTech companies to reduce the compliance cost for Banks and Fintech companies, it works to automate the information and processes for better compliance with the financial regulations, as a result of RegTech functions it has a positive impact on financial inclusion (GURUNG & PERLMAN, 2018). GARDNER (2018) defined RegTech as pure technology that highlights the regulation challenges faced by the financial service providers; where these challenges categorized in the following categories as the following:

- Monitoring Challenges.
- Compliance & Reporting Obligations.

RegTech relies on automation processes and machine learning procedures to reduce the financial institution costs, efforts, and time.

RegTech became a business that financial institution can play this rule by investing in this industry to help other financial institutions to comply with regulations and being a pioneer in this industry if it an in-house development business, figure 2 shows the investment in RegTech worldwide.

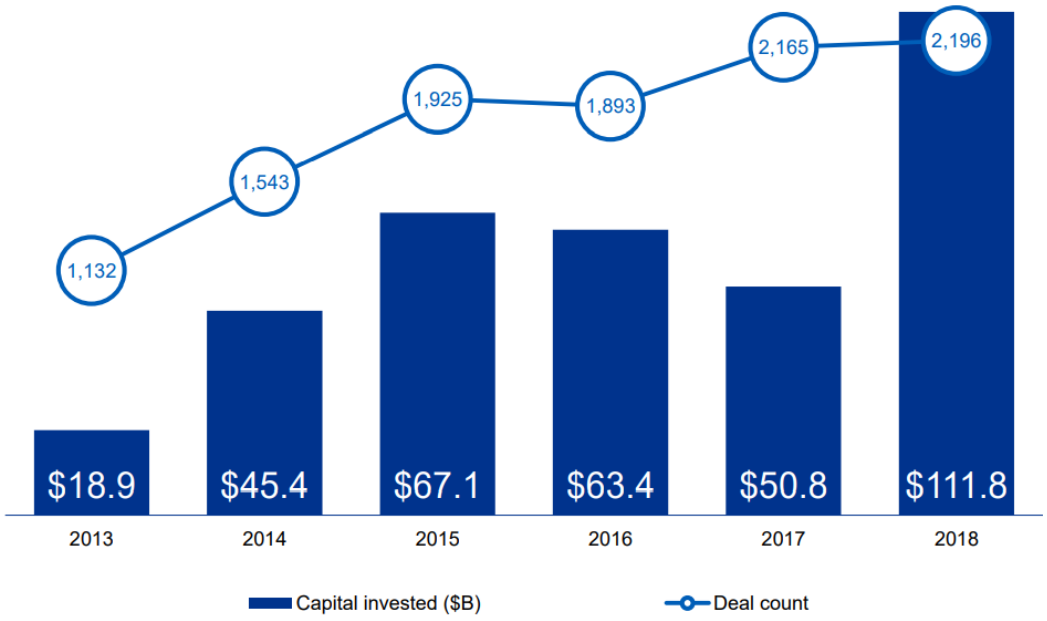

Figure 2. Global private investment (VC, PE and M&A) in RegTech 2013–2018

Source: POLLARI & RUDDENKLAU (2019, p.10)

2.1.5. Objectives in the adoption of Fintech by banks

Banks are also users and adopters of Fintech. It was the banks that laid the groundwork for digital currency or money as information, first with credit cards and then with debit cards that provided the same services directly from a bank account. The main purpose of the development of fintech by banks is to improve user experiences while increasing banking efficiency. The self-service aspects of fintech, for example, require less administration and net a lower transaction cost for the banks.

ROMĀNOVA & KUDINSKA (2016) discussed in their study that Fintech is the main driver for banks to improve and enhance their financial services to meet their customers' needs according to the rapid change in technology, Fintech is an integral part in the banking industry, Fintech drive

this competition in the market that forced banks to collaborate with them to enhance their services. On the other part, the development of the banking products required providing information about these products in order to develop it accordingly, so banks will provide these information's to the fintech providers to accomplish these tasks (ROMĀNOVA & KUDINSKA, 2016).

A recent report for the World Bank Group (PUBDOCS.WORLDBANK, 2019a), shows that Fintech has a significant role to boost the economic growth and increase the financial inclusion, Fintech could help and lead banks to achieve more benefits and growth through the collaboration between these two financial giants in the market.

Banks started to establish M&A (merger & Acquisition) strategies to keep in the pace of this rapid change in the financial technology industry, to keep their services updated and meet the customers' needs in the market; where customers have less reliance on using cash in their financial transactions (PALANDRANI, 2019).

2.1.6. Fintech and banks: opportunity or threat?

For banks, it would appear that fintech is both an opportunity and a threat. Banks have already lost an estimated 24% of revenues to non-bank fintech services and products 88% of traditional banks are extremely concerned about continued loss of market share in services such as transfers, payments, and loans (STRANDVIK et al., 2018). As 82% have planned to collaborate, partner, or invest in fintech initiatives, with 45% of traditional banks already having begun at least one collaborative project (STRANDVIK et al., 2018).

ROMĀNOVA & KUDINSKA (2016) shows that Fintech is a threat to banks; there are real indicators show that banks are losing part of their market share to Fintech competitors in the market. BENSAR & RODRÍGUEZ (2018) argue that fintech is a threat to banks as they are not able to provide culturally appropriate services, and that for Islamic fintech, from online zakat and waqf to smart contracts and cryptocurrency, Muslims concerned about non-appropriate banking are able to turn to these alternatives. In general, banking and the financial industries were formed on Western cultural values, and these create great impediments to the value proposition expected in Muslim majority areas such as Palestine.

A recent study by JÜNGER & MIETZNER (2019, p.1) investigated about the German households adoption of Fintech services; the results show that 31% of banks users have an intention to move to Fintech providers. Actually, these current studies gave banks a clear indicator from their customers' point of view about their intention and their ability to switch to other Fintech providers to meet and satisfy their needs.

WANG et al. (2018) revealed that Fintech has a significant positive impact on banks' performance in terms of cost reduction, service efficiency, more focus on the customer-oriented view. Fintech has an important role in enhancing the small banks' credit supply; it improves the banks' credit capability to grant the SME's with the required fund (SHENG, 2020). Banks have realized that Fintech is a key pillar in innovation in the financial services; Fintech helps in accelerating the banks' innovation to digitize their financial services (DRASCH et al., 2018).

2.1.7. Banks readiness to Fintech services

The value that consumers obtain from the firms with internet and technology focus is increasing rapidly, banks consumers found that banking services still slow and less useful comparing with Fintech services that many companies provided in the market; this leads a high pressure and stress at the banking industry to review their strategies and their services to be aligned with the fast use of digital devices as mobiles and also in the same side to meet the consumers' needs. Banks' top management recognized that they need to push the front office services and functions into digital services; this push mainly derived from the consumers' needs; so, banks management shift 92% of their front office investments into digital forms (HEFFNER, 2019).

HEFFNER (2019) shows in his report that 60% of customers' negative feedback comes from the banks' back-offices. Banks must have the digital-oriented view; it is like a roadmap for banks how to develop their internal capabilities into a digital view that gather all the banks' functions that are responsible to provide a digital experience to customer through different services channels. It gave banks an indicator to improve their internal capabilities, strategies, investment plans and their plans to digitize your services to make sure that they will provide services which gain higher customer satisfaction and to obtain higher customer experience in these services.

Banks need to digitalize their own capabilities in order to help them to replace their traditional services delivery methods from product-centered or geographic services into customer-centric

services based on digital services provided to customers through digital channels (for example mobile access). The main driver for fintech adoption by banks is the increasing reliance on technology; it is the main driver that banks have been evaluated in this regard to check their ability and their readiness for Fintech adoption (POLLARI & RUDDENKLAU, 2019). The Financial Stability Board (FSB) who is involved and specialized in the financial sectors policies and supervision revealed in his study (2017) that there are three main major drivers for Fintech innovation that drive the digital financial services into a new era which create great pressure on banks to re-innovate their services into a digital-based service that meets the customers' needs, these three drivers as the following (FSB.ORG, 2017):

- The global shift in customers' expectations and the new demanding factors associated with this shift.
- The evolving technology.
- The fast change in the financial regulations and market structure.

Figure 3 shows an international survey for the banking industry to compare themselves with the Fintech services providers in the world, this study is an important study to compare the Palestinian banks place among the international banking industry, 51% said that they are in parallel with Fintech providers while 29% said they are behind the competitors, so it is a clear indicator that banks are in threat to cope with the fast innovation in financial services and follow the competitors (ASSETS.KPMG, 2017). The researcher took the technological base to compare the banks' readiness as an internal capacity. This study handled around 160 financial institutions as a sample size in their survey disturbed in 36 countries around the World.

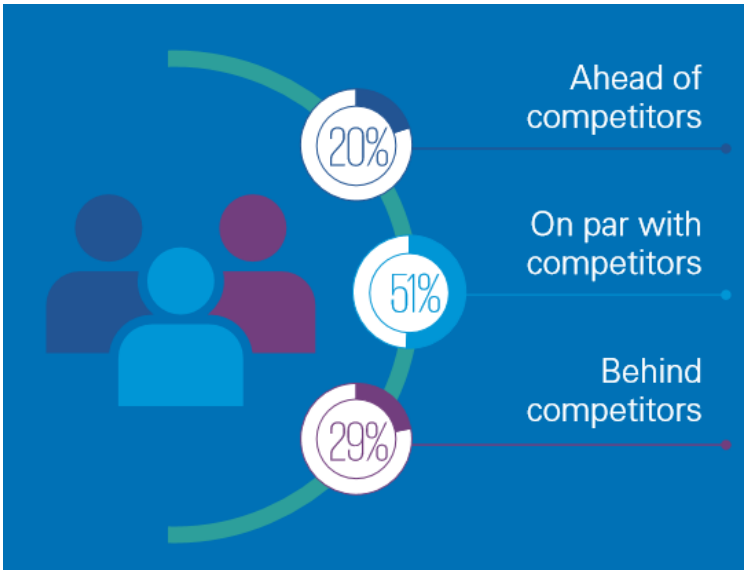

Figure 3. Banks comparing themselves against Fintech services providers

Source: ASSETS.KPMG (2017, p.7)

PWC (PricewaterhouseCoopers) (2016) in their global fintech survey revealed a significant result; these results gave a pure indicator about the banking industry; 76% of bank respondents have a fear that their businesses at risk to Fintech companies, moreover, 42% of banks joined a partnership with these Fintech companies to improve their financial services. Figure 4 illustrates the impact of technology on the global e-commerce system in the world; the main players in this transition are the evolution of mobile apps due to the rapid phone adoption in the world, the figure indicated that mobile apps occupy 30% of this impact on e-commerce volume.

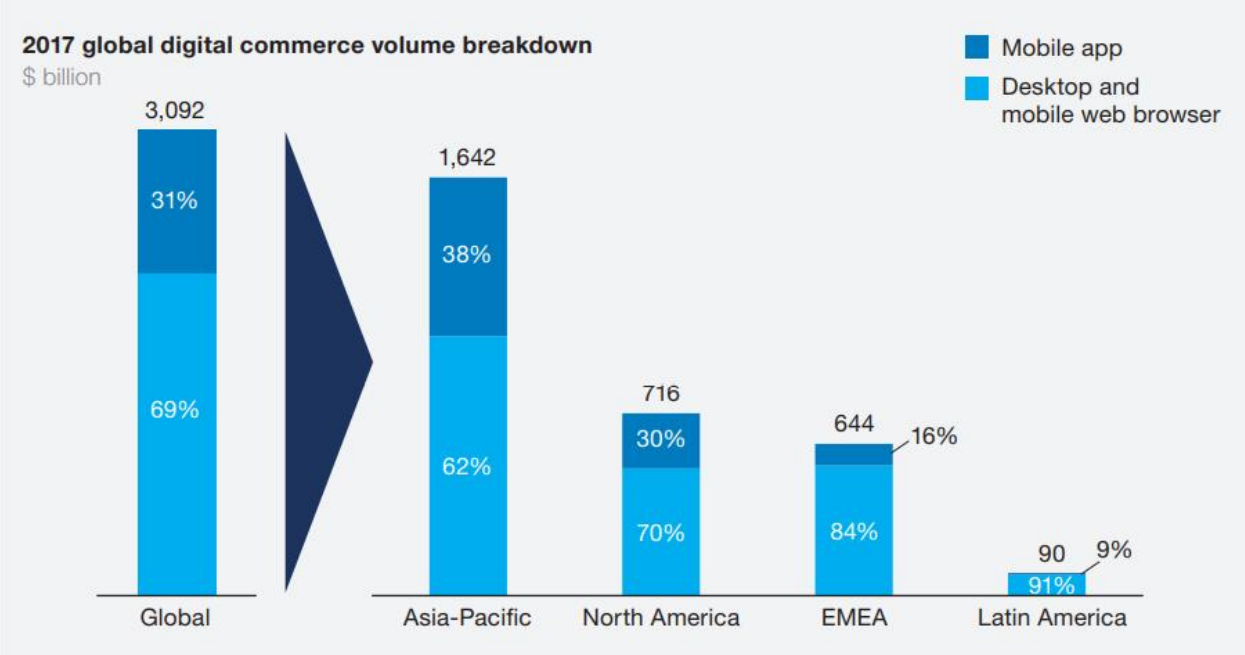

Figure 4. Mobile Apps share from the global e-commerce volume 2017

Source: MCKINSEY Adopted from GCI Analytics (2018, p.7)

The researcher did deep interviews with the pioneer banks in Palestine in Fintech services adoption, besides an intensive interview with the Palestinian Monetary Authority which is the government body who is responsible for the banking system in Palestine; actually, the interviews were concentrated and focused on the technological capabilities of these banks to Fintech services adoption, they have been evaluated to six major Fintech digital capabilities (requirements); these capabilities are the major Fintech technical requirements that banks need to adopt and enhance their internal capacities and competencies in order to provide such innovated and digital-base services to banks customers. The detailed interviews are attached in the Appendices section, Appendix 2.

The researcher adopts the following technological framework (Table 1) which is the main evaluation form for the banks in order to evaluate their compliance, adoption, and usage of financial technology in their services. This framework comes from the main Fintech developers in the world, it has been gathered to make a holistic framework that covers all the requirements for the digital transition in the financial services in the banking industry that deliver competitive

Fintech services from the banks' side that meets the customers' needs and to keep them in the competition in the market side by side with the Fintech competitors.

Table 1. Fintech Core technologies

	Fintech Core Technology Categories					
	1. Remittances & Payment	**2. Big Data & Artificial Intelligence**	**3. Digital Banking**	**4. Lending & Alternative Financing**	**5. Security & Risk Management**	**6. Blockchain Services**
Fintech Technology Sub-Categories	1.1 Omnichannel payment	2.1 Automated support	3.1 Personal Financial Management	4.1 Lending Marketplaces	5.1 PCI & DSS	6.1 Process Automation
	1.2 Money Transfer	2.2 Predictive Analytics	3.2 Onboarding New Customers	4.2 Loan Comparison Solutions	5.2 GDPR	6.2 P2P transactions
	1.3 API Development	2.3 Financial Data Management	3.3 Digitalization of Banking	4.3 Supply Chain Financing	5.3 Security Testing	6.3 Supply Chain Management
	1.4 Third-party integration	2.4 Data-driven management decision	3.4 Fraud and Security	4.4 Invoice-based Financing	5.4 Fraud Detection	6.4 Asset Tokenization
	1.5. Mobile Payments	2.5 Fraud Detection	3.5 Banking Data Aggregation APIs	4.5 Fund Management	5.5 Advanced Risk System	6.5 Data Access Decentralization
	1.6 Online payment	2.6 AI for Back Office	3.6 Anti-money Laundering			6.6 Digital Identity

Source: Author's own construction

Table 1 explains the main categories as technology-based requirements to adopt the Fintech services requirements in the banks' systems, it is the technological infrastructure required to provide customers with the competitive Fintech services along with the requirements of the legal system categorized in (Security & Risk Management requirements); the Fintech developers are able to help banks to meet the international legal requirements in order to obtain the financial services license; they will be able to provide these services after the compliance tests done by the authorized financial control organization in the country.

The researcher derived the above model mentioned in table 1 from different Fintech articles, books and Fintech official services, the majority of Fintech adoption services are listed in this table, this

is the novelty of this research work, as it is was a hard task to find an adoption model of Fintech services, the author constructed this model to be as a model-based Fintech services to measure the banks readiness to each category in this model.

The researcher will provide a brief about each category mentioned in table 1, these categories as the following:

A. Remittances & Payment (Online Payments system): Local payment gateway that integrate the global payments platforms into an individual (the bank) e-commerce site.

- Omnichannel payment: One contract, one integration, and one back office to keep track of payments via all your online and POS sales channels, "Omnichannel is a multichannel approach to collecting payments that offer customers the ability to pay their bills via their preferred payment channel (i.e., online, IVR, mobile, in the front office, etc.) When customers can make payments the way they want, they're more likely to pay" (INSTAMED 2020, BHISHEK et al. 2020, LIU et al. 2017).
- Money Transfer: Send and Receive money online securely and reliably (GLOBALFINDEX 2017, GOMBER et al. 2018, p.234).
- API Development: Improving the banks' digital offerings through third-party applications and services, "An application programming interface, enables a software program to interact with other software" (REPLICON, 2020). API means an interface that helps banks to connect their banking software's with a local or international broker to get the benefit from real-time pricing and placing trades (BRODSKY & OAKES 2017, ZACHARIADIS & OZCAN 2017).
- Third-party integration: The bank will Integrate its payment solutions with a trustful service provider to enable users practicing their experiences that they are familiar in this regard (GOMBER et al., 2018, p.245).
- Mobile Payments: User-friendly solutions to allow customers to pay for goods and services with a mobile app (GOMBER et al. 2018, p.229, ROLFE 2013).
- Online payment: Connecting the banking solutions to online payment options to meet the demand for automated online services (LEE & CHIN, 2018, p.37).

B. Big Data & AI (Artificial Intelligence) Services: Produce real-time business reporting, collect data from various resources, manage this data, and get insight for future decisions.

- Automated support: Automate communication with customers via AI, chatbots, and NLP (Natural Language Processing) (KRAYEWSKI, 2020).
- Predictive Analytics: Forecast outcomes, and avoid unexpected financial losses, neural networks and deep learning and big data technologies (GIUDICI et al., 2019).
- Financial Data Management: Easily understandable and detailed reporting of the banks financial data (LI & MARINČ, 2018, p.32).
- Data-driven management decision: Build solid ground for the ban'k further actions by applying collected data to actual decision-making processes (KERSTING, 2018; CONSTANTIOU & KALLINIKOS, 2015, p.45).
- Fraud Detection: Using AI to find vulnerabilities and detect potential threats for improved security of banks' financial operations and user data (QI & XIAO, 2018; GIUDICI, 2018).
- AI for Back Office: Monitoring Backlogs, manage processes, and increase efficiency of the bank's workflow and AI has the capacity to predict the consumers' behavior by analyzing their experience (ABU DAQAR & SMOUDY, 2019a; INTEL, 2020).

C. Digital Banking: Digitalizing services, online banking, mobile banking, and contactless payment (credit cards, mobile payment).

- Individual Financial Management: This feature helps individuals to manage their assets in the bank, such as; money investment, expenses control, and budget management (WINNEFELD & PERMANTIER, 2017).
- Onboarding New Customers: Make smooth user flow at every touchpoint with the banking services, and welcome the new customers with two clicks, not with a bunch of papers (GROVER, 2020; DELOITTE, 2020b).
- Digitalization of Banking: Embedding the digital technologies into the bank services in order to speed up the individuals and the operations processes, making customers transactions more transparent, and ensuring the security of the customers' data (GOMBER et al. 2017, p.537, WINNEFELD & PERMANTIER 2017).

- Fraud and Security: Establishing the digital security systems in the banking systems and testing the bank services and systems against any harmful and expected vulnerabilities (GOMBER et al., 2017, p.562).
- Banking Data Aggregation APIs: The bank will integrate its solutions by using APIs in order to avoid the time consumable operations to collect the customers and the other data to access the required services (MEDIUM 2020, BBVAOpen4U 2020).
- Anti-money Laundering: Check the transparency and legitimacy of the bank money sources that users operate with while using its services (GOMBER et al., 2017, p.566).

D. Lending and Alternative Financing: Develop lending platforms, that clients can easily customize, integrate, and extend. Using these platforms, borrowers can get money quickly and effortlessly, they can focus on their businesses instead of looking for funds. Helping clients to connect their lending platforms with banks to streamline financing for end customers.

- Lending Marketplaces: Creating a lending solution that provides credit score services and connect borrowers with banks (JAGTIANI & LEMIEUX 2019, FENWICK et al. 2017).
- Loan Comparison Solutions: Build loan scoring components and responsive borrower-centric web portals (SEWELL, 2020).
- Supply Chain Financing: Develop an independent marketplace for asset-based financing, optimize cast-to-cash funding, and affordable short-term investment (FENWICK et al. 2017, LEE et al. 2019).
- Invoice-based Financing: Solution for improved cash flow, in-advanced payments to employees and suppliers, and fast investments (HORACIO, 2019).
- Fund Management: Creating solutions to manage investments of businesses and financial institutions in a single, easily accessible place (ALTEXSOFT, 2020).

E. Security & Risk Management: Risk management security audits for global payment provides. Streamline certificate processes and meet specific regulatory standards. Generating reports on all collected personal data of users and implement automated features to remove data upon user's request. Proven test practices to detect and fix

bugs in software's that often causes vulnerabilities that can be exploited to commit fraud.

- PCI DSS Compliance: Ensure payment solution complies with the global security standards to provide financial services to a wider audience (TASSEV, 2020; EPIXELSOFT, 2020).
- GDPR Compliance: Meeting all requirements regarding personal data privacy and automate users' requests for processing of their data (DELOITTE, 2020a; PYMNTS, 2020).
- Security Testing: Confirming that Banks software solutions are free of architectural bugs or any potential vulnerabilities (ELSON, 2020; VENTURELAB, 2020).
- Fraud Detection: Secure the bank solution with high-quality code and special measures for preventing unauthorized access to user's data and valuable assets (MOON & KIM, 2017).
- Code Review and Audit: Find and fix bugs in the banks' software's and solutions at every stage of the development process (WEBCACHE, 2020).
- Advanced Risk System: Calculating all potential risks for the bank and its customers to come up with mutually beneficial solutions for risk management in security operations (GIUDICI, 2018).

F. Blockchain Services: Data management and network infrastructure development. Process automation and value-driven solutions.

- Process Automation: Achieve greater operational efficiency and eliminate redundant processes and bureaucracy with fully automated and regulated smart contracts (DU et al., 2019).
- P2P transactions: Guarantee secure and transparent transactions through peer-to-peer network that requires no third party to process and verify agreements (CAI, 2018; WAMBA et al., 2019).
- Supply Chain Management: Ensure secure, transparent, and easily manageable logistics and improve cash flow with real-time data recording and sharing (KSHETRI, 2018).
- Asset Tokenization: Enhance the liquidity of the bank business assets, converting them into tokens in line with RegTech trends and enabling smooth on-chain settlement (FERNANDEZ-HERRAIZ et al. 2020, BLÉMUS & GUEGAN 2020).

- Data Access Decentralization: Support data access control and security to interoperate with global networks without any risks of unauthorized data changes or violations (EYAL 2017, WAMBA et al. 2019).
- Digital Identity: Increase mobility, controlling both corporate and personal data with a secure digital ID that provides access to financial records (WAMBA et al. 2019, PUSCHMANN 2017, ARNER et al. 2020).

2.2. The growing dominance of fintech

2.2.1. Fintech and banks in competition

Fintech services are typically competing with banks, at least those products that allow for currency storage and payment functionality. There are far more business models than this, however the typical remittance or exchange for a fee (such as Xoom or Western Union online services), investment holding and trading, payment facilitation, insurance and self-service, and receiving funds. The main opportunity for fintech products is the capture the markets of emerging markets where the traditional banking practices have excluded much of the population (ZALAN et al., 2017). In the Middle East, it has been estimated that about 70% of the population is without banking access, and this appears to hold true in Palestine (WENDEL, 2018). Many people who do have bank accounts also use fintech, and in some cases, Fintech requires a bank account for full usages, such as the PayPal e-wallet. Figure 5 shows that Fintech revenue share compared with the traditional financial services players, in UK Fintech occupies the highest share.

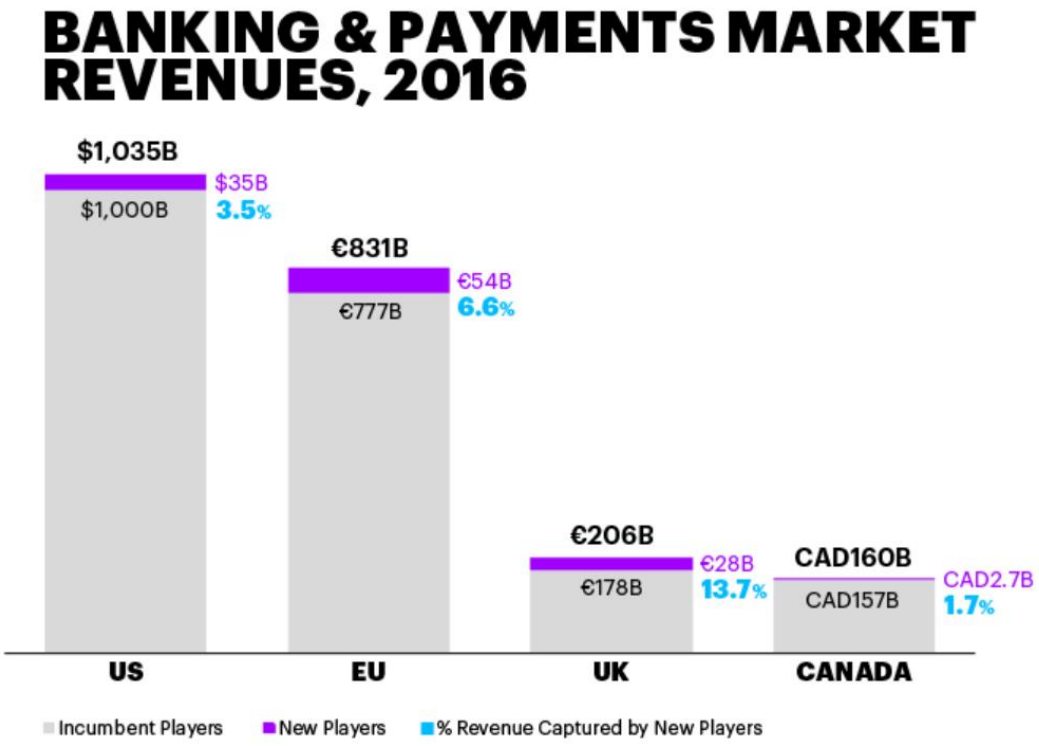

Figure 5. Fintech's one third share of banking and payment market

Source: FINTECHNEWS (2018)

Note: New Players are the Fintech competitors

2.2.2. The threat of FinTech and its impact on customer expectations towards banking services

In this section the researcher will discuss the customers view toward the traditional banks' services and how Fintech affects their financial behavior, the growing dominance of young customers in the world and the technology that facilitate the digital financial access were the main drivers for Fintech companies to attract and provide Fintech services aligned with their needs.

For example, Millennials (Born 1980-2000) making up around a quarter of the world's population (SACHDEV, 2019). This customer segment is a huge segment that has a significant impact on Banks, and how it shapes the financial services, this segment of customers is alerted to technology and how Fintech companies attract them to use their services. A research handled by ENVISIONIT (ENVISIONIT, 2018) shows that 68% of Millennials believe that the way that we access money will be changed during the next five years, 70% said during these five years the payment methods will be changed, while the most important thing 73% of the study population agreed that they are

more receptive to the Fintech services which are provided from giant technology companies worldwide. The critical point which is a threat to the banks that 33% of them believe that banks will cease to exist during this period (5 years).

Fintech plays a major role to drive the financial industry into a different approach, it affects the customers' behavior through its services, the results of these approaches through the adoption of these services; Fintech reduced the financial fee payments, Millennials and Gen Z save a portion of money through their credit cards usage and abandoning the excess of over-drafting; and on the other side they shift part of their spending to other entertainments resources (CARLIN et al., 2017).

2.2.3. The new consumer generations

While Millennials and Generation Z get all of the attention, it was Generation X, a small population between the baby boomers and the Millennials who were the early adopters of fintech and digital banking services with the use of bank cards and ATMs (TULGAN, 2000). The Millennials, as a large cohort, were raised with the idea that such digital uses of currency and instant self-serve transactions were normal, Millennials are anyone born between 1981 and 1996, while Gen Z are referred as anyone born from 1997 onward (DIMOCK, 2019). Fintech is not an innovation within this mindset, but rather a given and an expectation; from this perspective, traditional banks with poor value chains are simply seen as outdated and irrelevant (BRODMANN et al., 2018). There is in general a higher level of technology acceptance and fintech adoption among Millennials and Generations Z in comparison to the Baby Boomer cohort, which has a much lower trust as well as less comfort with online commerce and banking (BERRAIES et al. 2017, TAN & LEBY LAU 2016).

2.2.3.1. Millennials & Gen Z in Fintech Adoption

This thesis focused on the role of Millennials and Gen Z in Fintech adoption because these generations are the majority of Fintech users. CHANG et al. (2016) investigated in their study that the majority who adopt and use Fintech services are the Millennials unlike their parents which are the main bank customer segment. On the other side; Millennials considered with lower financial capability compared with their parents and old age customer segments; so, Fintech and Banks competing for each other to obtain and acquire this huge segment and provide them with suitable

financial services fit with their needs, the authors used TAM model in achieving these results (HU et al., 2019).

Another study by CARLIN et al. (2017) investigated about the factors associated with Millennials' Fintech adoption intention and the results show that Millennials' financial knowledge and awareness, and the life expectancy were the main factors that influence the Fintech adoption intention behavior.

According to SACHDEV (2019), he found that Millennials have a high interest to use technology in their lives; it means for Banks and Fintech companies that they have to promote their services in a digital form, for example, mobile, internet, etc. Moreover, he found that Millennials don't trust banks compared with other generations as Gen Z (Born from 1997), they prefer the traditional banking services (traditional financial services). One of the most important results in his study is that Millennials are the most debt laden generation comparing with other generations. In this study, there is a comparison between the marketing strategies used to reach both generations through Fintech services (Millennials and Gen Z), this comparison based on their financial behavior as mentioned earlier. Table 2 discusses the different marketing strategies with both generations.

Table 2. Fintech marketing strategies Millennials vs Gen Z

Generation	**Marketing Strategy**		
Millennials	Don't Judge	Being Responsive and Quick Response actions	Make it an easy process
Gen Z	Providing Multi-Faceted Approach	Social Savvy	Keeping things real

Source: Author's Own Construction based on SACHDEV (2019)

A recent study shows that the trust factor is significantly associated with the perceived usefulness in adopting the Fintech services among the Gen Z and Millennials, whereas the perceived risk has no influence or an impact on Fintech adoption among these generations, moreover, it has no influence on their attitudes (MEYLIANA et al., 2019, p.31). BOONSIRITOMACHAI & PITCHAYADEJANANT (2017) investigated about the factors that affect the Millennials mobile banking adoption using TAM UTAUT, the results show that Hedonic motivation was the most important dimension that affects the Millennials Fintech adoption, while security has a negative relationship with this dimension.

Furthermore, JIWASIDDI et al. (2019) found that these four factors which are (brand image, trust, perceived usefulness, and perceived ease of use) significantly influencing the Millennials' attitude to adopt Fintech services. Moreover, KIM et al. (2016) found in their studies that promotion plays a significant role in Fintech adoption, promotion is a critical factor that positively affects the consumers' Fintech adoption.

2.2.4. Artificial intelligence and big data in the Financial industry

Artificial intelligence and big data have been disruptive in all sectors and industries because of their ability to analyze and provide results rapidly that go beyond the capacity of a single human analyst. ABU DAQAR & SMOUDY (2019a) explored the impact of AI on Customers Experience, the study discloses that AI has a significant predicting role to interpret the variance of customers' experience by 26.4%.

AI and Big Data have an important role in labor savings. Moreover, they have greater capacity and level of insight. Artificial intelligence systems include chatbots for guiding users, robo-advisors that track and providing feedback on wealth management, and pre-approval systems. Customers have an intention to adopt AI-based services in Fintech, the attitude of customers is the key indicator shows that customers have the intention to adopt these services, and also the perceived usefulness has an influence on adoption especially robo-advisor services (BELANCHE et al., 2019). AI and big data have a great impact on the financial industry, it drives the industry into a new age of intelligence, customers will be able to access the new generation of financial services, AI & big data will be able to provide the following (MARUTITECH, 2020):

- Accurate decision making.
- Automated customer support.
- Fraud detection and claim management.
- Insurance management
- Automated virtual financial assistant
- Predictive analysis in the provided services
- Wealth management for all customers segments

There are three main categories that AI and Big Data transformed the banking services, customers support, and the banks' front office; around 40% of Millennials don't use the traditional banking services, they are moved into the digital world, chatbots and voice assistant have been introduced to meet the customers' needs, the second category which is Fraud Detection; the bank will be able to detect any fraud cases that are hidden and may face the banks at any time, through the use of AI and Big Data the bank will be able to deal with these obstacles, the last category which is Lending and Risk Management; Banks will be able to assess the risk associated with the customers' operations and services along with the lending options provided for these customers (GOSSETT, 2020).

2.2.5. Real-time payment

The real-time gross settlement system is a specialized system for credit transfer at the moment between institutions that are part of that system. This is the system that drives finance, but in fact debit, credit card, and similar forms of payment are not part of that system and these transactions appear in real-time, but are actually cleared using post-trade processing systems. These systems simply tally up what is owed or collect what is due based on a pre-negotiated agreement on the terms of a financial channel or relationship.

These agreements and alliances are the real drivers of fintech. In fact, real-time payments have a significant impact on the banks' financial services; the payments became simple and easy to access worldwide; it affects the consumers' behavior to easy switch from banks, commercial banks are the pioneers to provide a global payment system for their clients that corporate banks, these systems help payments to be more transparent with higher efficiency level, in the UK the systems had been tested and it scores around 100% of efficiency level through this approach STP (State Through Processing) (BERTRAND, 2020).

One of the key challenges that affect the banks performance is the current IT systems; these systems are not up-to-date to meet the current customers' requests to access the current new real-time payments systems, another key issue which is the low level of customers trust in banks, it is a negative indicator for banks; it requires their high attention to adopt the latest cutting-edge technology to acquire the required IT infrastructure to adopt these systems, but conversely around 80% mobile users believe that the banks apps are the most trustful apps (INGWB, 2020).

KODITHUWAKKU (2018) investigated about the impact of e-banking services on customers satisfaction, the results show that there is a significant positive correlation between e-transactions such as e-payments and customers satisfaction. Another study by ROOZBAHANI et al. (2015) found that there is a significant positive impact of e-payment tools and customers satisfaction in the banking sector. Real-time payments considered one of the most dominant categories in Fintech adoption, the main drivers of this adoption as these drivers are the requirement to push the use of real-time payments; Technology is the main driver as the mobile adoption rate is too high among different countries worldwide which is the main responsible technological factor that affects the access of real-time payments, figure 6 explain the vast shift in real-time payment in the world (Real-time payments are changing the reality of payments. Real-time payments are changing the reality of payments, 2015).

Figure 6. Real-time Payment Tripping Point

Source: DELOITTE (2015, p.6)

Figure 6 shows the main drivers that shift the real-time payment into a new era, and it drives the industry into a new chapter of payment; it became the first rank category in Fintech adoption internationally.

The recent EY report for 2019 about the global Fintech adoption index, it represents the main Fintech categories rank by adoption rate (2015-2019), Payment and Money Transfer reserved the first rank among all these categories as illustrated in Figure 7 (FINTECHAUSCENSUS, 2019).

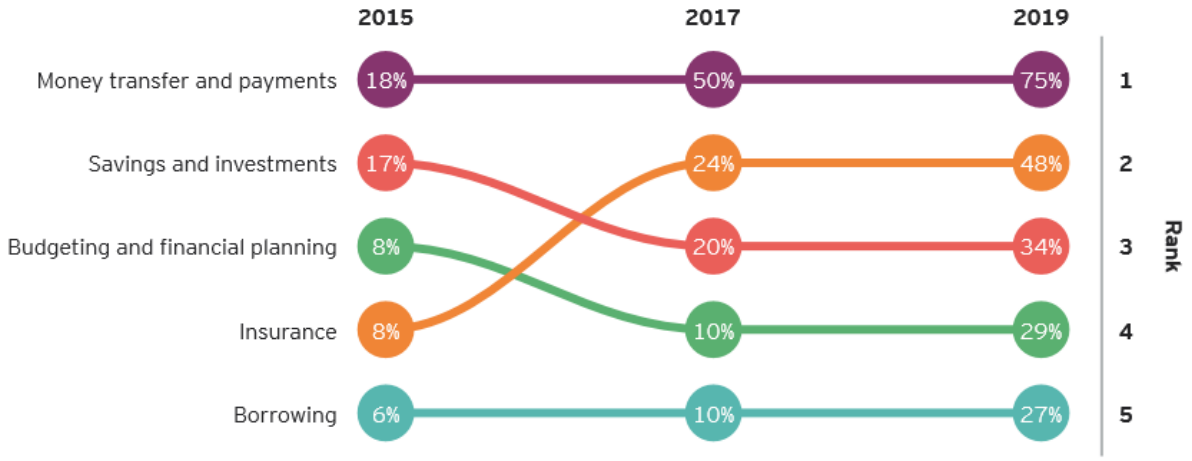

Figure 7. Fintech categories rank by adoption rate (2015-2019)

Source: FINTECHAUSCENSUS (2019, p.10)

An interesting study for the Americas Market Intelligence shows that real-time payments providers worldwide lead the e-payments, these providers are the main competitors for the traditional financial institutions such as banks, these services attract customers and it increases their adoption of Fintech adoption (AMERICASMI, 2020).

The recent report for DELOITTE (2019) as illustrated in table 3; it shows the economic impact of real-time payment in the three different income countries (High-income, Middle-income & Low-income), it is clear from table 3 the economic impact associated with real-time payments on the different income countries classification.

Table 3. The economic impact of real-time payments

Country 1	Country 2	Country 3
Costs Reduction up to 87 Million USD	Costs Reduction up to 464 Million USD	Costs Increases up to 1 Billion USD
Float Value Reduction up to 15 Billion USD	Float Value Reduction up to 13 Billion USD	Float Value Reduction up to 7 Billion USD
Tax Receipts Improvement up to 117 Million USD	Tax Receipts Improvement up to 22 Million USD	Tax Receipts Improvement up to 71 Million USD

Source: Author's Own Construction based on DELOITTE (2019)

2.2.6. E-wallets and banking

E-wallets are essentially a way to store digital currency, and it may also allow for instant payment to participating retailers (CHANDRA et al., 2017). While banks have produced e-wallet products that are tied to a bank account, there are also e-wallet products that do not require a bank account (CHANDRA et al., 2017). A study in Bangladesh compared the technology acceptance level of e-wallets produced by banks, and an e-wallet product that was created by a mobile phone company (CHANDRA et al., 2017). The e-wallet could be topped up in the same way that one buys phone credit. Both e-wallet products were stored on a mobile phone, and could be used for a wide variety of ordinary payments, such as utility bills.

The TAM data indicated that in the Bangladeshi population, the e-wallet provided by the telecommunications provider had higher acceptance based on ease of use and intention to use. To that end, it is easy to see that fintech does not necessarily need to work with banks or the banking system, and companies that have created alternative credit and currency system, such as the mobile phone credit, have innovated to express this functionality as an e-wallet without the need for or participation from banks. It can be expected that continued increasing market share of fintech will therefore be resulting in depriving banks of that market share, even where the bank is a partner, since part of the market share is diverted regardless. The key for banks is therefore to innovate in terms of new demand and new value for consumers of financial services.

E-wallet nowadays considered the top list of e-commerce trends worldwide, around 41% worldwide have the intention to use e-wallets (CLIMER, 2020). There are 2.07 billion customers will use e-wallets for the purchasing purpose in 2019, there an increase by 30% comparing with 2017 (1.6 billion customers), the leading country in using e-wallet worldwide is china (ROLFE,

2019). Another issue associated with e-wallet which is the relationship between it and the cashless customers' transaction; SARIKA & VASANTHA (2019, p.1164) investigated about the impact of e-wallet on cashless transactions especially the e-payment transactions, they found that e-wallet has a significant positive impact on economic growth and cashless operations.

YADAV & ARORA (2019, p.1) investigated the impact of e-wallet on customers satisfaction; the findings show that there is a significant positive relationship between e-wallet solutions and customers satisfaction.

2.2.7. The Future of the Financial Services

The researcher in this study focuses on the impact of Fintech industry on the traditional financial services that are provided by the conventional banks. JÜNGER & MIETZNER found that the majority of the German households have a higher adoption intention toward the new Fintech services, this segment of households is characterized by higher financial education, technology, and lower trust. This segment of customers has the ability to deal with Fintech providers rather than banks. According to the current study by TAKEDA et al. (2020), they investigated how the regional banks stock prices will be affected by the investment in Fintech; the results indicate that banks' stock prices have no significant relationship with IT investment, whereas; equity investment in the Fintech companies has a significant negative impact on the stock prices of these banks. This result gives a clear indicator of how banks will be affected by the investment in the dominant Fintech players in the market; it will affect the banks' business in the market. PHAN et al. (2020) Fintech has a negative impact in predicting the banks' performance, this finding shows that Banks is in a real threat to move forward the digitization in their financial services to keep in line with the digital transformation process in the financial services.

2.3. Analysis of the fintech ecosystem in Palestine

2.3.1. The fintech ecosystem

The fintech ecosystem refers to the players, the dynamics, and the functions that are served by the players (LEE & SHIN, 2018). The fintech ecosystem in Palestine occurs within the wider context of the Middle East and North Africa (MENA) region, and in recent years this area has witnessed fantastic growth (YEHIA, 2018, p.30). By 2016 the annual investment had reached $900 million

USD for MENA fintech projects and initiatives, with $750 million USD invested in the prior three years. About 70% of the MENA population do not have access to traditional banks, although this proportion varies widely between nations and regions (WENDEL, 2018). The main opportunity for fintech products is the capture the markets of emerging markets where the traditional banking practices have excluded much of the population (ZALAN et al., 2017).

2.3.2. The economy of Palestine

Palestine has a great deal of difficulty supporting real GDP growth because of the dampening effect of insecurity and restrictions on productivity generally as well as Israeli separation of the Gaza Strip territory from the West Bank territory (GLEESON, 2016). This was evident in 2018 when GDP growth was just over zero (PUBDOCS.WORLDBANK, 2019b). Palestine is divided into two parts, the Gaza strip in the west, and the West Bank, a much larger area with considerable importance to both Israel and Palestine. Between 70% and 80% of the Palestinian Authority budget comes in the form of donor grants and aid, and this has been in decline in recent years (PUBDOCS.WORLDBANK, 2019b). There is no indication that safe passage and travel will resume between the West Bank and Gaza, and this will limit growth potential (PUBDOCS.WORLDBANK, 2019b). real GDP growth is estimated to remain between 0.5% and 1.6 % of the next few years, with inflation of about 2% and a reduction of individual and household income of 2% to 3% (PUBDOCS.WORLDBANK, 2019b).

One of the main reasons for loss of revenues was a determination by the Israeli authority to stop the transfer of value-added and duty revenues which are collected on behalf of the Palestinian Authority (PUBDOCS.WORLDBANK, 2019b). Palestine does not present a thriving economic reality; however, it has many unique challenges that might be overcome through the use of fintech.

2.3.3. Banking and finance in Palestine

Banking in Palestine is driven by the same dimensions as that of any other banks in the world, based on the research literature. A study of factors predicting the use of online banking services by customers of Palestinian banks using a custom adoption framework found that the main influence in the adoption of technological leadership of the institution, followed by trust, loyalty, customization value for the user, and privacy concerns (SALEM et al., 2019). Studies have also found that customer satisfaction, service quality, and bank image play an important role in

customer loyalty and willingness to recommend, in the case of Islamic banks in Palestine. (ABD GHANI et al., 2017).

General attitudes toward technology

RABAYAH (2019, p.1) described the use of the TAM model to better understand both technological determinants of acceptance, but also cultural ones, in the context of a Palestinian university and student intention to adopt e-learning. Cultural dimensions of uncertainty avoidance, power distance, and individualism-collectivism had an impact on behavioral intention to adopt or accept e-learning and the culture of learners, revealing that uncertainty avoidance and power distance had strong negative impacts on the intention to adopt new technologies.

Financial barriers

Israeli banks began terminating agreements and cutting connections to partner banks in the West Bank stating that there were too many risks in relation to potential laundering of money from illegitimate sources and the sponsorship of terrorism (TOFFANO et al., 2019, p.1). This created challenges for settling accounts by firms and individuals (TOFFANO et al., 2019, p.1). Proposals have included the use of a distributed ledger system delivered by mobile or online application in order to ease this problem. However, such approaches do not take into account the lack of willingness of Israeli banks and the lack of political will of Israeli authorities to have any kind of relationship to the Palestinian banking system.

Islamic finance and Conventional banking

Islamic finance refers to the financial institutions and services which ensure compliance with important aspects of Islamic belief and Shariah law. GRASSA (2015, p.135) described Shariah governance of Islamic financial institutions still come under banking and financial regulations of the jurisdictions where they are located, leading to considerable variation in Islamic finance around the world. For Palestinian Islamic banking services, this means isolation, often from other Islamic financial services that are located in jurisdictions that do not look favorably on dealings and trade with Palestine. The Conventional banks in Palestine apply and being complied with the PMA (the Palestinian Monetary Authority) roles, conditions, regulations, and the state policy, and the Islamic Banks as well, but the Islamic banks' operations must be obliged with Shariah law and ruling. Islamic banks provide substitute financial products and services which are considered as a substitute for conventional banks (SIRAJ & PILLAI, 2012). In Palestine there is no presence for

the Israeli Banks in the market; but it is a must that there is an intermediary Israeli bank to deal with by the Palestinian banks either conventional or Islamic, they must cooperate to fulfill the banking and the financial services requirements between these banks and the intermediary Israeli Banks in a direct way; these services such as money transfer and cheques.

2.3.4. The fintech ecosystem in Palestine

The role of government

The government has multiple roles in relation to the fintech system in Palestine. Like all national governments, there is an interest in innovation in the financial sector that could result in economic growth and incoming foreign currency. The Palestinian Monetary Authority (PMA) is the regulator of banks and fintech products (to the extent that there are any), however, the agency is also the main proponent of fintech with any power within the ecosystem.

Traditional financial institutions

There are 14 traditional banks operating in Palestine with 351 branches, and deposits equal to 83% of GDP, and bank assets of about $16.1 billion which are equal to 109% of GDP (AL BAWABA, 2020). The Bank of Palestine, the Palestine Investment Bank, Islamic International Arab, Palestine Islamic Bank, Al Quds Bank, The National Bank, Safa Bank, and Arab Bank all operate in Palestine and have an online or mobile banking component.

Customer base

The customer base for banks and fintech in Palestine include those users with traditional bank accounts, as well as the underbanked and the unbanked segment of the Palestinian population which is about 70% of the population according to the Palestinian Monetary Authority but 2.6 million Palestinians have smartphones (CUEN, 2020). Palestinians are aware of alternative financial firms as well. A study of university students in Palestine revealed that there was a high awareness (70% of the sample) of crowdfunding mechanisms and associated fintech, with indicating (TALLA et al., 2020).

Fintech products and services

Palestine is isolated from many fintech products that are under American banking regulation, and therefore refuse to do business in Palestine or with Palestinians, and this includes PayPal, the most

common and popular e-wallet service and payment method for international freelance work. Israelis in the West Bank are, however, served by PayPal and this has been the cause of considerable controversy (ABUNIMAH, 2018). These situations speak to the grave difficulties that the Palestine economy and financial system have as the risk for businesses is considered too high for many foreign firms. Palestinians in the Gaza Strip are using cryptocurrency at a higher per capita rate than that of developed countries, and this likely reflects the main difficulties in relation to currency exchange and foreign payment (CUEN, 2020). While organizations banned from the financial systems of America and allies like Hamas are using cryptocurrency to raise funds from outside of the country, the largest segment of users is ordinary Palestinians according to reports on the ground (CUEN, 2020). Put bluntly, Palestinians are already adopting fintech at a high rate, but with no Palestinian based fintech firms to choose from, they are using foreign fintech in combination with local underground cryptocurrency dealers (CUEN, 2020).

The Qassam Brigade, the military arm of Hamas that also has control of the Gaza Strip, has provided information to local people in a variety of ways, including a tutorial on its website and a way to generate new wallets for each transaction to reduce potential issues of foreign enforcement of the Hamas blacklisting (CUEN, 2020). These are not considered compliant transactions to the extent that institutional bitcoin transactions are prohibited by PMA regulations (CUEN, 2020). The main use of cryptocurrency was to receive payment for freelance work or a foreign remittance, and it is generally agreed that the Hamas campaign to raise funds using cryptocurrency created widespread awareness of the use of cryptocurrency to bypass current challenges and barriers (CUEN, 2020). It was further noted in the report that the exchange of cryptocurrency for local currency in Gaza Strip carried fees and risks that were much higher than ordinary fintech exchanges for this purpose.

Investment

Fintech has not come to any real fruition in Palestine, and with a lack of actual results, the numbers of interest are levels of investment in facilitating and supporting startups, especially fintech. The numbers vary widely, but with many of the investments being from founders, there is no accurate information. Investors in Palestinian fintech are often non-governmental organizations or foreign aid agencies. (LEADERS, 2019). For example, the Business Start-up Incubators Program announced by the European Union in 2017, to be delivered through the Belgian Development

Agency had the intention of providing training, mentorship, coaching, advising, and other services to support startups, including fintech companies, in six locations in Palestine (LEADERS, 2019). It is not clear whether the plan to support 120 start-up companies, with provision of initial seed investment for half, ever came to fruition as there was no further information. This clarifies an important point in relation to investment in Palestine generally, which is that good intentions often fail due to the complexity and the barriers involved.

2.3.5. Fintech startups in Palestine

As BJØRN and BOULUS-RØDJE (2018) describe the lack of access to financial infrastructure within Palestine in combination with other problems of infrastructure create a situation where it is close to impossible to have a successful fintech startup, and the result is that fintech solutions are more likely to come from Palestinians living outside of Palestine. Different criteria are needed to define success given this situation of brutal economic conditions, isolation from the financial systems of most of the world, and regulatory enforcement from foreign agencies that criminalized ordinary financial transactions that stem from or lead to Palestine.

PalPay

While there are financially related startups based in Palestine, there are no true non-bank fintech services despite entrepreneurship in the area of digital currency exchange from local dealer. The Bank of Palestine has online and mobile banking applications that work from a smartphone or computer, and they also work with PalPay, the cleverly named fintech startup which was co-founded by the Bank of Palestine and PCNC Solutions to provide a basic e-wallet service which includes utility payments, more than 6,000 points of sale within Palestine and transfers between users (PALPAY, 2020a).

Economies

This startup began in 2010 to provide Arabic language and focused information services to allow for trading information in a MENA friendly format. The company reported that it is self-funded, and now also provides an English language portal of content. While not a true fintech service, it does provide automated financial information services (ECONOMIES, 2020).

Gamiphy

Gamiphy is an online marketing tool and service that helps to engage users and in so doing collect marketing data in the form of points-driven games. Options include quizzes and similar formats that allow for the collection of user preference data, as well as badges and other rewards for community and crowd work/input to a site (GAMIPHY, 2020).

2.3.6. The impact of foreign fintech

The North American and European financial and fintech ecosystem are very influential, and they have an impact on the overall ecosystem of Palestine. This is not because of trends leadership, but instead because of impositions and restrictions that arise from the Western perspective of the Palestine context. This can be illustrated by reviewing the biggest fintech companies, and how Palestinian users can, or can't, get access to them. PayPal does not allow Palestinians to create an account, which creates a great deal of difficulty for startups as well as online workers who are seeking to convert their digital foreign currency to local funds. For many displaced people, online work has provided them with a way to make a living using platforms such as Upwork, Fiverr or as remote employees (HATAYAMA, 2018).

2.3.7. Fintech and Financial Inclusion

Fintech one of the most important pillars in financial inclusion in the world, it is highly correlated to financial inclusion; it has been proved through many significant studies that the provided services through Fintech companies have a positive impact on financial inclusion in both emerging and well-developed economies worldwide, moreover; the value that Fintech providers provide to individuals have the highest impact and effect when they are within the low and the variable income level; Fintech providers will deliver these services with low cost to customers through low cost ways to obtain the services (OZILI, 2018). Digital devices play a key role in supporting the financial inclusion in any country; digital devices are the major tool that promote Fintech services for people, and as it was mentioned earlier in this thesis that Fintech services have a positive impact on Financial inclusion (LAUER & LYMAN, 2015). Fintech innovations were contributed in

increasing the financial inclusion through providing alternative solution to access the financial services for the unbanked segments in the society (SENYO & OSABUTEY, 2020).

2.4. Fintech & Financial Inclusion in Palestine

Figures 8 and 9 show the most important statistics that support Fintech services providers in Palestine and the Financial inclusion strategy that the Palestinian Monetary Authority dedicated the resources to support and increase the financial inclusion in Palestine; the two main pillars that drive the Fintech services are smartphone penetration rate and the financial inclusion ratio, as mentioned in figure 8 the percentage of the mobile subscribers in Palestine is 84%, while the smartphone penetration rate is 70% according to The National Company for Electronic Payments-Palestine report (2019) (through the interview with company itself). Moreover, the below percentages support the evidence mentioned earlier about the positive relationship between Fintech and digital devices especially when smartphone users have access to the internet, figure (8) shows that the percentage of the active internet users is 60% which is a great indicator for the Fintech providers and for the government to enhance the financial inclusion in Palestine (HOOTSUITE, 2019).

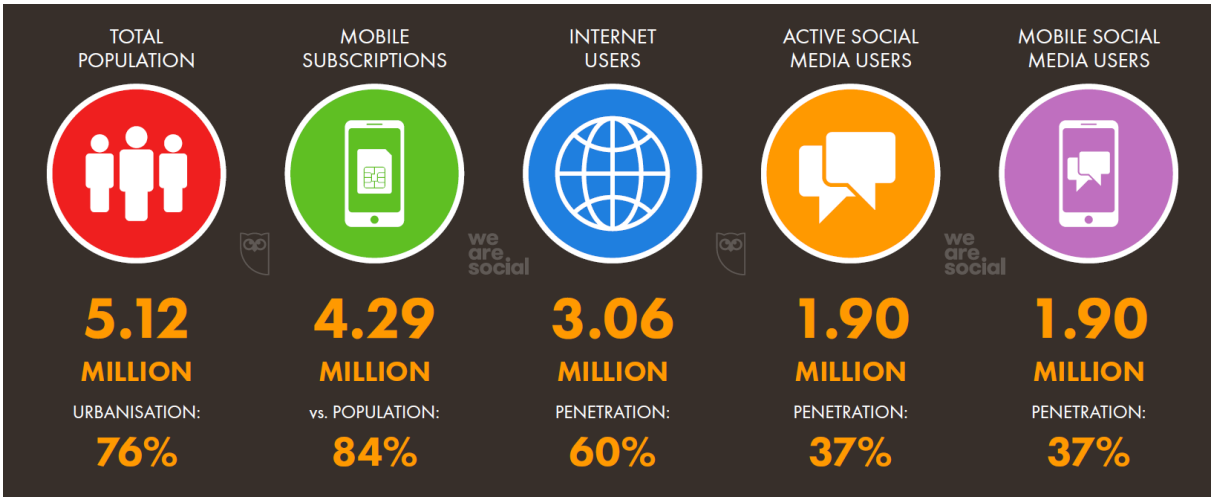

Figure 8 Mobile, Internet & Social Media use in Palestine.

Source: HOOTSUITE (2019, p.15)

Moreover, figure 9 illustrates the year-on-year change in Palestine digital growth indicators, these indicators are the main drivers for the involved parties in Palestine to drive the digital

transformation in the financial industry and enhance the Fintech services in the market along with serving individuals for better access to the financial services regardless their geographic positions in the country.

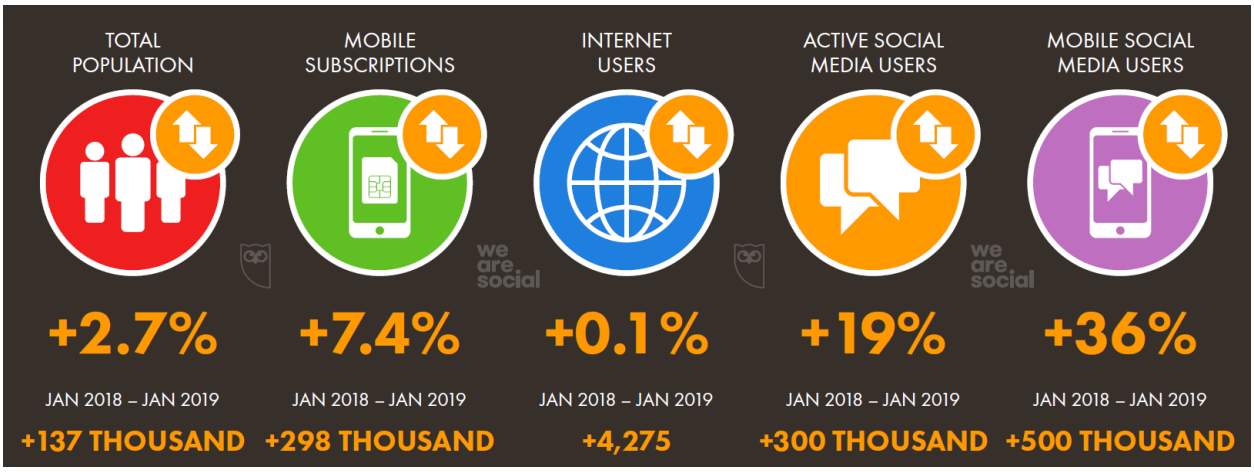

Figure 9. The Annual Digital Growth- Palestine

Source: HOOTSUITE (2019, p.16)

PMA (the Palestinian Monetary Authority) they are the governmental body in Palestine that control the financial system in Palestine as the central bank in other countries; according to their comprehensive report about the National Financial Inclusion Strategy in Palestine, they announced the total percentage of the financial inclusion in Palestine which is 36.4% from the overall adult population; it means that the majority of the adult population suffer from the financial exclusion. This percentage gave the Fintech providers and the banks in Palestine the initiative to promote digital services for the citizens in order to decrease the ratio of the financial exclusion in Palestine and acquire more customer base for both Banks and Fintech providers, in the last two years the competition has been increased among these two rivals to provide reliable, convenient, real-time, and suitable financial services that fit the customers' needs with a lower access cost (PMA, 2020).

2.4.1. Fintech Context Analysis

The new fintech reality began with digital, information and online innovations driven by banks, however over the past decade there has been increasing development of new entrants in the financial services sector that are small, non-bank actors. In many cases, these new fintech

companies are providing the same services as banks, but at a lower cost or with a higher level of relevance and acceptability to the user (OZILI, 2018). Traditional banks are concerned about the fintech disruption, and they have reason to be, given that one-quarter of revenues have been displaced by these companies in Western countries. Traditional banks also see the important opportunity in working with fintech companies to more rapidly innovate, building on the strengths of the traditional banks in terms of branding and trust, while accessing and leveraging the agility and analysis of fintech companies in relation to looking at old problems in a new way (PMA, 2020).

Fintech may be creating fear for the established, traditional banks; however, most are small enterprises in need of capital, and in this way of integration, or fintech partnerships with banks, may bring out the best of both worlds. The banking and fintech ecosystem and realities in Palestine present unusual and rather unique issues (PWC, 2016). In addition to the usual issues, political reasons are the cause of banking and commerce disconnects as well as economic isolation for the population (BANSAL et al., 2010). Despite an underperforming economy, Palestine may be able to leverage common interests of the people, the Palestinian authorities, established banks in Palestine and up and coming fintech startups to reduce the impact of the continued political actions. That process will create certain strengths that may hold long term advantages and benefits for banking, fintech and innovation in Palestine (DE OLIVEIRA MALAQUIAS & HWANG, 2018).

2.5. Conceptual Framework: Extended TAM (E-TAM)

The technology acceptance model (TAM) has provided the main way of predicting, analyzing and identifying consumer adoption of technology, including fintech products and services (CHUANG et al., 2016). Developed by DAVIS et al. (1989) the model was intended to bridge the human aspect of technological engineering - behavior. The theory of reasoned action and theory of planned behavior provided a basis for determining technological adoption based on what people say that they would do. The original priority variables were simply perceived usefulness and perceived ease of use (DAVIS et al., 1989).

2.5.1. Theories of technology adoption and acceptance

There are a number of theoretical frameworks in relation to purchasing intention in marketing studies, and these have evolved for the most part over the past fifty years, becoming widely influential and even becoming the common or popular paradigm. In 1977, HILL et al. theory of reasonable action (TRA) helped to provide a basis for predictive studies of purchase intention (HILL et al., 1977, p.244). This was followed by theory of planned behavior which provided further connection points between a person's intention and behavior or actions. The theory of planned behavior (TPB) was built on the basis and foundation of TRA, and further proposed that the TRA tents could be used to create a link between beliefs and attitudes and subsequent behavior, leading to the concept of behavioral intention (AJZEN, 1985). From these, the TAM helped to provide a specific focus for these theoretical tools- the determination of adoption of technology.

2.5.2. Technology Acceptance Model (TAM)

DAVIS et al. (1989) further extended TRA and TPB in figure 10 in order to have a model of behavioral or use intention, rather than purchase intention. The function of the model may have been what contributed to the initial popularity as the publication of the article coincided with a rising use of individual computers in the workplace, and this encountered significant resistance that was a source of confusion to executives seeking new efficiencies. It was however a departure in relation to the use of the TRA and TPB, which were essentially marketing theories drawn from psychology intended for the understanding of consumers, not potential technology users.

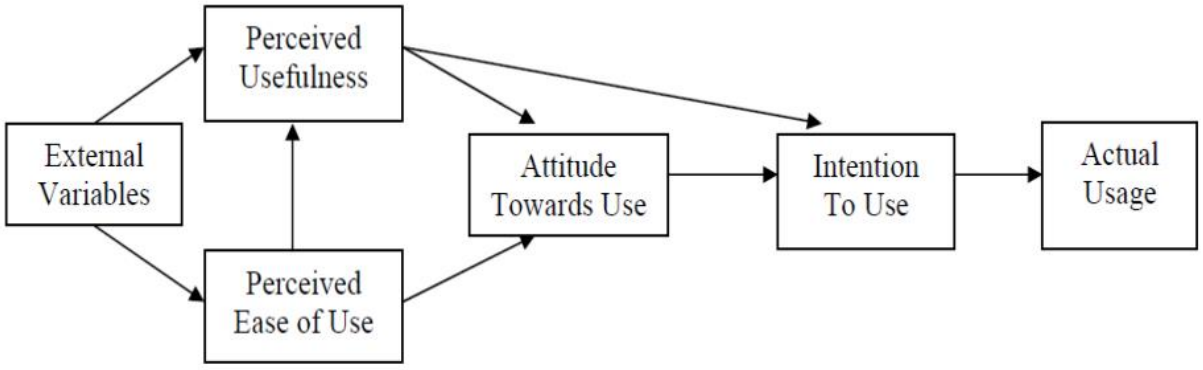

Figure 10. The first modified version of TAM (Davis, Bogozzi and Warshaw, 1989)

Source: LAI (2017, p.18)

Decomposed Theory of Planned Behavior

TAYLOR & TODD (1995a, p.137) proposed that models of intention and action could be decomposed and further refined and validate to provide support for various functions and research interests. In this decomposition, each of the dimensions and factors could be validated and dropped, or modified, in order to better suit the research circumstances. This provided permission, in a sense, for the decomposition and restructuring of the TAM, resulting in a new diversity of extended TAM models.

Extended Technology Acceptance Model and variations

There was no question that the TAM had greatly expanded understanding and insights into technology use and acceptance, and that it had predictive value (MCFARLAND & HAMILTON, 2006). TAM was only able to explain between 4% and 45% of variation in adoption, and refinements were needed leading to greater accuracy, figure 11 shows the driven TAM context (MCFARLAND & HAMILTON, 2006).

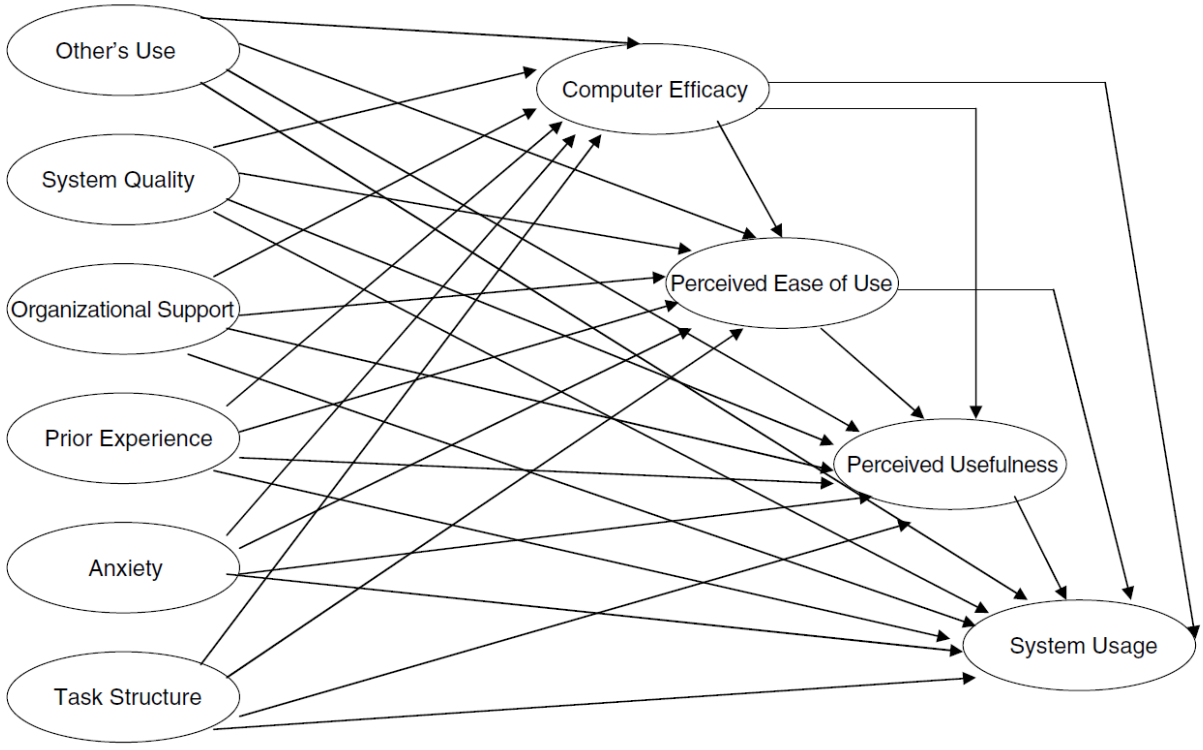

Figure 11. Context driven TAM

Source: MCFARLAND & HAMILTON (2006, p.433)

VENKATESH & DAVIS (2000) extended the TAM in order to better understand social influence as well as cognitive processes that were known to have an impact on behavior with the TAM 2 model. There was an assumed context of the workplace, rather than consumer behavior (VENKATESH & DAVIS, 2000). New social dimension included the perception of norms, the level of voluntary discretion, and the image of the technology, with cognitive dimensions of job relevance, output quality, and results of use (VENKATESH & DAVIS, 2000). VENKATESH & BALA (2008) further described the TAM 3 in figure 12, which included points for intervention in the system as a tool for managerial decision making.

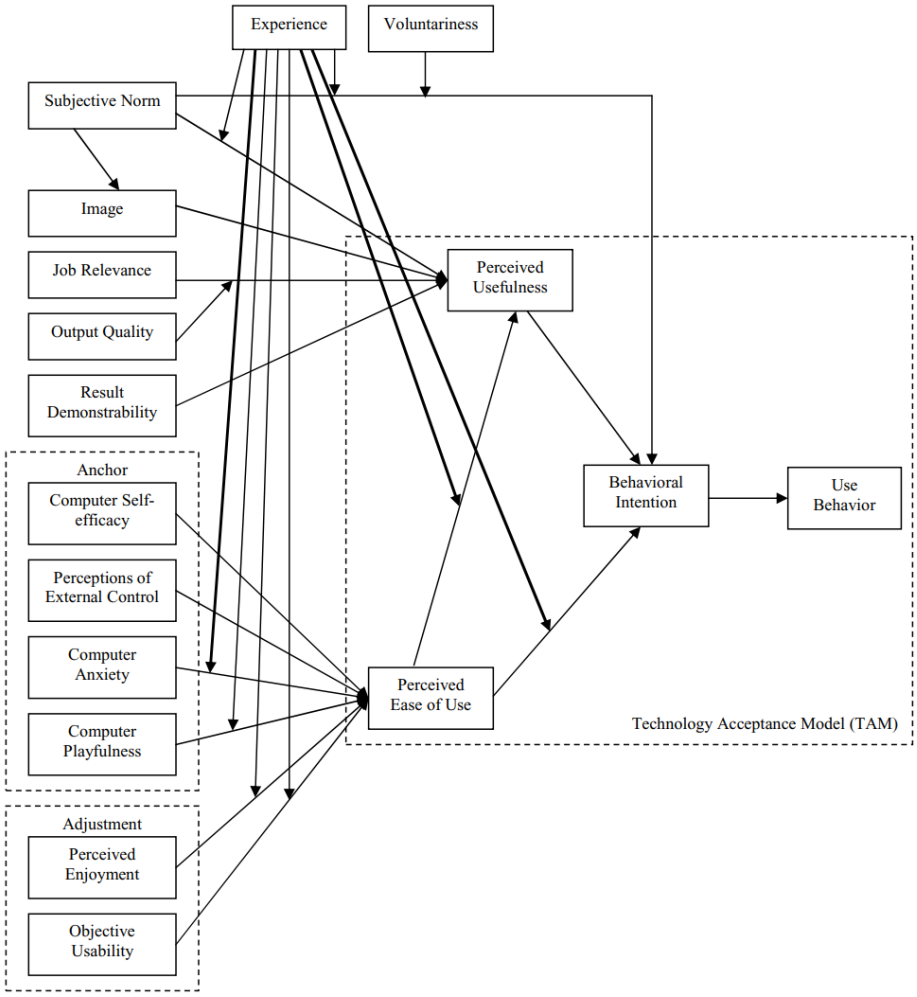

Figure 12. Extended TAM 3 with adoption, context and points of intervention

Source: VENKATESH & BALA (2008, p.280)

Understanding technology acceptance in fintech today

The theory of reasonable action (TRA) and theory of planned behavior (TPB) were borrowed from these as the basis and the justification for the evolution of the technology acceptance models (TAM) (TAHERDOOST, 2018). The resulting model is very flexible and forgiving, in that factors driving acceptance can be added, validated or rejected, however, this has resulted in increasing heterogeneity of the model rather than increased consistency and standardization (TAHERDOOST, 2018).

2.5.3. The Nine dimensions of E-TAM

Perceived Usefulness

Perceived usefulness referred to beliefs that a task or duty could be made easier with the use of technology (DAVIS et al., 1989). If no connection was made in relation to the usefulness of technology in achieving a task then the perceived usefulness was low. This would reflect the relative priorities of the user, and the perceived aspects were often in relation to that priority framework. For example, if the user prized speed of the task, but the technology focused on increasing the quality of the task output or the collation and storage of all data, then this might not register as useful to the user.

CHANG et al. (2016) found in their study that knowing your customer is one of the most important issues in Fintech adoption, mapping the customer knowledge to better understand the provided Fintech services and having the customer attention and awareness that these services are useful for him. Moreover, another study by CARLIN et al. (2017) investigated about the Fintech adoption determinants of the Millennials; the results revealed that their financial knowledge has significant influences on Millennials' behavioral intention of their Fintech adoption.

Perceived Ease of Use

Perceived ease of use refers to the effort required to achieve the task by using the technology (DAVIS et al., 1989). This reflected the ease of use which was determined by a user before actually using technology, and often without actually witnessing any use of the technology. In cases where they could not relate to how the technology was used, the resulting measurement of this dimension would be low. Many studies investigated about the significant relationship between the perceived ease of use and the consumers' technology adoption, RIQUELME & RIOS (2010) found that

perceived usefulness has a significant impact on consumers attitude toward adopting Fintech services, whereas if the consumers knew that these Fintech services are easy to use they have a high potential to adopt them, and also SUM CHAU & NGAI (2010) & ABBAD (2013) found that Perceived Ease of Use is a key variable in determining Fintech adoption among users. Furthermore, another study by TAYLOR & TODD (1995b, p.144) revealed that perceived ease of use has a positively impact on perceived usefulness through their study by using the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) and Decomposed Theory of Planned Behavior (DTPB).

Trust

Trust refers to the user's belief that their use of the financial services or tools will not result in negative impacts such as misuse of information, or a breach of privacy or property. Trust does not come as the result of researching the issue or making reasoned analysis, it is a property that is challenging to earn and lost in a moment with any kind of misstep, real or perceived, that would result in a low trust score. The researcher found many studies that express the role of trust in adopting Fintech services, KOKSAL (2016, p.327) and BASAK et al. (2016) found that the Trust in the Fintech service provider gave the consumer the confidence to use these services which are provided from this provider. Another study found that there is a significant impact of trust on Fintech adoption intention (HANAFIZADEH et al., 2014, p.62).

Brand Image

Brand image refers to the impression of the sponsoring firm or owner, based on image characteristics as well as media reports and general presentation of the company. This brand image is determined separately from the product or service itself. The service provider brand image plays a critical role in influencing the image of a reliable service to the consumers in the market, it has a significant positive effect on the consumers' perception to use these services (PARK et al., 2014). Moreover, a study by RIYADH et al. (2010, p.1) found that brand image has a positive impact on consumers' quality perception; SALEEM & RASHID (2014) agreed with these results they found that there is a positive influence of brand image on consumers satisfaction. While LEE & CHUNG (2009) found that brand image plays a significant role in influencing the users' trust for the brand itself.

Perceived Risk

The perceived risk is different from trust, in that the trust measures the extent to which it is believed that the firm is trustworthy and would not have malintent or negligence, whereas the risk refers to the problems that could result from using the technology itself; the types of risk associated with consumers regarding their intention to use Fintech services classified into two types, financial risk and the privacy risk perceived by consumers when using fintech services (KHEDMATGOZAR & SHAHNAZI, 2017, p.389).

Users usually have fear when dealing with their personal information; especially when other parties misusing their personal information (BANSAL et al., 2010). Usually, when users want to access any fintech services they need to provide their personal information in order to verify their identities to let them use these services, so; it merits to investigate if perceived risk has a significant impact on consumer's trust in such a brand that provides fintech services (DE OLIVEIRA MALAQUIAS & HWANG, 2018). There is a study that found that perceived risk is associated with users' trust; the researcher considered this dimension as one of the ninth dimensions used in TAM model (KIM & PRABHAKAR, 2000).

Government Support

Government support refers to the regulatory framework and conditions, as well as the macroeconomic effects and overall positive or negative position of government agencies in relation to the technology. Many government agencies have funded and supported startup incubators, for example, as a means of ensuring that startups get early support that might lead to innovation and new industry. Where government support is limited, or even contrary to the technology, the result for this dimension would be low, this dimension is the main factor that affects Fintech adoption (YEE-LOONG et al., 2010). Government support has a significant positive impact on fintech adoption and also founded that Government support affects the user's intention to adopt Fintech services (KIWANUKA, 2015). Government support is an important factor that influences the online services adoption as Fintech services (MARAKARKANDY et al., 2017).

User Innovativeness

The level of innovation exposure and interest of the user is a factor in technology acceptance and the context of technology acceptance. This can be captured and interpreted in a number of ways for operational purposes, and it is therefore very heterogeneous across studies that use it. User innovativeness is expressed in a way that the users are highly innovative and this innovativeness is the main reason to mitigate their risk perception toward their intention to adopt Fintech services (LEICHT et al., 2018). Human innovation is interpreted by the degree that this human (user) is interested in new things to try and use it (ADEIZA et al., 2017). KIM et al. (2010) found that user innovativeness has a significant positive impact on the users' intention to use online services.

Attitude

Attitude refers to the aggregate feeling of being willing to try to use technology, or to even be enticed and excited to use it. On the other end of the spectrum are those who clearly do not want to engage with the technology, in other ways it is defined as the personal tendencies associated with his intention behavior to show a specific behavior (LIFEN ZHAO et al., 2010). Two studies found through using the TAM model that there is a positive relation between the users' attitude to technology and their adoption intention to use this technology as Fintech services (SHAIKH & KARJALUOTO, 2015, p.129; ABOELMAGED & GEBBA, 2013).

Intention

The human intention behavior is affected by many key drivers in order to use the technology in such context, this behavior comes from the person's belief that information technology has a contributed impact in enhancing the work performance. This intention is highly associated with these two predictors perceived ease of use and perceived usefulness (VENKATESH & BALA 2008, LEGRIS et al. 2003). Furthermore, government support has a significant influence on the person's intention to use the e-banking services (JARUWACHIRATHANAKUL & FINK, 2005).

2.5.4. The use of TAM in studies of fintech and financial technology adoption

The use of TAM and customized extended TAM continues to be one of the most accepted approaches to behavioral intention in relation to technology acceptance. HU et al. (2019) proposed yet another iteration of the extended TAM model by which was then used in combination with perceived risk as determining factors of the trust which mediated technology adoption, a slight refinement of Davis and associated original model. JIN et al. (2019) reported on fintech acceptance in the Malaysian context, using the TAM dimensions of usefulness, ease of use and perceived risk, with the addition of the categories of relative advantage, perceived cost, and the mediating effect of awareness of consumers. It can be seen that the decomposition factor is active, however, this creates issues of comparison.

2.5.5. E-TAM & Fintech Study Results

The following table 4 presents some of the dimensions of E-TAM in relation to recent studies and results.

Table 4. Study results related to E-TAM and Fintech

VARIABLE (DIMENSION)	AUTHORS	SAMPLE	ADOPTION OF WHAT	WHERE	FINDINGS
Perceived Usefulness	CHUANG et al. (2016)	440 consumers (convenience sample)	Fintech	Taiwan	Perceived usefulness has a significantly positive effect on the attitudes toward using Fintech dimension.
Perceived Usefulness	MUÑOZ -LEIVA et al. (2017)	103 bank customers	Mobile banking app created by a bank	Spain	This study rejected perceived usefulness as a factor correlated with intention to use mobile banking applications
Perceived Usefulness	JIN et al. (2019)	----------	Fintech	Malaysia	Perceived Usefulness positively the Consumers Intention to use and adopt Fintech Services
Perceived Ease of Use	CHUANG et al. (2016)	440 consumers (convenience sample)	Fintech	Taiwan	Perceived ease of use has a significantly positive effect on the attitudes toward using Fintech dimension.
Perceived Ease of Use	HU et al. (2019)	387 bank users	Fintech	China	Perceived ease of use does not affect users' attitudes toward the adoption regarding Fintech services.

VARIABLE (DIMENSION)	AUTHORS	SAMPLE	ADOPTION OF WHAT	WHERE	FINDINGS
Trust	CHUANG et al. (2016)	440 consumers (convenience sample)	Fintech	Taiwan	Brand and service trust has a significantly positive effect on the attitudes toward using Fintech dimension.
Trust	HU et al. (2019)	387 bank users	Fintech	China	Trust in Fintech services has a significant influence on users' attitudes for adoption.
Brand Image	HU et al. (2019)	587 bank users	Fintech	China	The study shows that Brand Image has a significant relationship with users' attitude to adopt Fintech services
Perceived Risk	HU et al. (2019)	387 bank users		China	Perceived risk does not affect users' attitudes toward the adoption regarding Fintech services.
Perceived Risk	JIN et al. (2019)		Fintech	Malaysia	
Perceived Risk	MUÑOZ -LEIVA et al. (2017)	103 (convenience sample	Mobile banking app created by a bank	Spain	This study rejected risk as a factor correlated with intention to use mobile banking applications
Government Support	SÁNCHEZ-TORRES et al. (2018)	600	Online financial services (bank and non-bank)	Columbia	Government support did not have a significant impact on technology adoption.
User Innovativeness	ZHANG et al. (2018)	520 Amazon Mechanical Turk	Fintech	Worldwide	The study reveals that User innovativeness is important in Fintech adoption

VARIABLE (DIMENSION)	AUTHORS	SAMPLE	ADOPTION OF WHAT	WHERE	FINDINGS
Attitudes	CHUANG et al. (2016)	440 consumers (convenience sample)		Taiwan	Attitudes have a significantly positive effect on behavioral intention to use fintech.
Attitudes	MUÑOZ -LEIVA et al. (2017)	103 (convenience sample	Mobile banking app created by a bank	Spain	Attitude was the main factor determining user acceptance of mobile banking applications
Intention	MARAKARKANDY et al. (2017)	300 Internet bank users	Fintech	India	Intention is associated with Fintech adoption and have a significant impact on increasing the usage

Source: Author's own construction based on literature

3. MATERIALS AND METHODS

This chapter describes each topic involved in the construction of this research work for the PhD thesis. The topics covered are; Section One: Data collection methods, Section Two: Study instrument (questionnaire design), Section Three: Conceptual model, Section Four: Study population, Section Five: Sample size, and Section Six: Methods of data analysis.

3.1. Data collection

In order to answer the study questions and hypotheses, the researcher collects the reliable data that are aligned with the study objectives. The main data source used is the primary source, since it is an exploratory study designed to explore the reality and the intention in adopting Fintech services in Palestine. It also examines the Palestinian Banks readiness to the requirements of Fintech industry in the Banking financial services by gathering reliable data.

3.1.1. Primary Data

The study used two main sources of data, the first source is the interviews with the pioneer banks in Palestine whom involved in digitizing their financial services and following the international trend to adopt the Fintech services. These banks are upgrading their systems to meet their customers' needs. These interviews were with the key top management level in each of these banks. They are involved and responsible for the financial technology transition and having the long-term strategies of Fintech in their banks. They provided the real context for Palestinian banks' readiness for this emerging Fintech era within the banking industry.

The second source is a questionnaire. The researcher used this approach in order to collect the required information that addresses and answers the study questions and hypotheses. According to FODDY & MANTLE (1994, p.382) this type of questionnaire is one of the main tools for data collection.

The questionnaires in this study are in the e-form method. The researcher targeted two populations in Palestine. These two populations reflect the two generations that meet the objectives of the study, Millennials and Gen Z. They are the main motivators for banks to adopt the Fintech technology within the industry since they have high intention to adopt the Fintech services.

Services that are provided by companies and other financial institutions worldwide, beyond the banking industry. The study used two questionnaires, with very similar items with few differences in social profile. One questionnaire targeted the Millennials and the other targeted Gen Z. The major source of data for Gen Z was the Arab American University, one of the biggest universities. The purpose of using this university is it has the solid base of technology where many students are aware of these services, and there is a huge cultural mix. Hence, this university was the best option to target Gen Z in order to get responses about their intention to adopt the new Fintech services within the market. Millennials are the bank users in West Bank-Palestine were their age between 25-40. The researcher reached this age group through social media channels. Furthermore, the researcher collaborated with a social media specialist to find this group; especially the employees who own bank account.

Finally, the questionnaires were structured to discover and explore the social behavior of these generations in terms of their financial behavior and their intention to adopt Fintech services when using the extended model of TAM (Technology Acceptance Model). Measuring this behavior will give a clear indicator banks in Palestine, and elsewhere, about how to adjust, renovate, upgrade, and use the last cutting-edge technology to meet their customers' needs.

3.1.2. Secondary Data

The researcher used other data sources to provide evidence. Studies, experts, official reports and government bodies involved and qualified to provide the recorded data about this topic. The researcher obtains this source of data from journals, textbooks, periodicals, and reports.

3.2. Thesis Instrument

The researcher adopted the following method for this thesis:

3.2.1. Questionnaire Design

The two study survey questionnaires are in three sections: Section one is the demographic variable; it is consisted of 10-11 items where the Millennials one consists of 11 items. Section two covers the consumers' financial behavior and Fintech perception. The section consists of 22-23 items. Millennials are covered with 23 items, while the last section is about the respondents' intention to

adopt Fintech (according to the Extended Technology Acceptance Model E-TAM). This section consists of nine sub-sections, Perceived Usefulness (consists of 4 items), Perceived Ease of Use (3 items), Trust (2 items), Brand Image (3 items), Perceived Risk (3 items), Government support (3 items), User Innovativeness (2 items), Attitude (3 items), Intention (2 items). The two questionnaires have the same nine sub-sections with the same items for each sub-section. These questionnaires are constructed on the basis of five Likert scales in the third section: Consumers Financial Behavior and Fintech Perception, using the Extended Technology Acceptance Model.

The questionnaire steps

To build a well administered questionnaire the researcher chose to use a validated questionnaire especially adapted to learn Fintech Adoption Intentions. Here the Extended Technology Acceptance Model (E-TAM) is utilized. It is the most well-known model for achieving this purpose. The model has nine scales, as follows in table 5 (ZHANG et al., 2018).

Table 5. Thesis questionnaire scale

Variables	Scales	Sources
Perceived Usefulness	Fintech could meet my financial services needs	(LOCKETT & LITTLER, 1997) and (HUH et al., 2009)
	"Fintech services could save my time"	
	"Fintech services could improve services efficiency"	
	On General, Fintech services are suitable to me	
Perceived Ease of Use	Fintech services are easy to use	(CHENG et al., 2007) and (ZANDHESSAMI & GERANMAYEH, 2014)
	"I think the operation interface of Fintech services interface is user friendly and easy to understand"	
	Fintech services equipment's are easy to obtain (mobiles, APPs, Internet Connection, et al.)	
Trust	"Fintech services keep my personal information safe"	(YEE-LOONG et al., 2010) and (SÁNCHEZ - TORRES et al., 2018)
	"Fintech services are trustable"	
Brand Image	"The bank could provide good services and products"	(HA, 2004) and (RUPARELIA et al., 2010)
	I prefer services provided by familiar brands	
	The bank has a good reputation	
	Money could be stolen when using Fintech Services	

Perceived Risk	"I think that my personal privacy will be under threat to be disclosed"	(MARAKARKANDY et al., 2017) and (GRABNER-KRÄUTER & FAULLANT, 2008)
	On general, Fintech services are risky	
Government Support	In my opinion the government encourage and supports the usage of Fintech services	(MARAKARKANDY et al., 2017)
	I think the government provided the solid base from regulations and legislation to facilitate the work of Fintech services	
	I believe that government provided the required infrastructure that push the Fintech services in the market	
User Innovativeness	When there is a new product, I am among the early birds who would like to try and use it	ZHANG et al. (2018)
	"In my opinion using Fintech services is a very good idea"	
Attitude	It is a pleasant experience when using Fintech services	(GRABNER-KRÄUTER & FAULLANT, 2008)
	"I am interested in using Fintech services"	
	"If I used Fintech services before I will continue using it"	
Intention	I am looking for using fintech services very soon	(MARAKARKANDY et al., 2017) and (PATEL & PATEL, 2018)
	"I am willing to recommend Fintech services to friends"	

Source: Own Construction based on literature

3.2.2. Banks Readiness Measure

The researcher in this study gathers the main Fintech functions that banks could adopt and develop their products and services accordingly, while it handles the most recent technology, regulation requirements to introduce Fintech services that make them able to compete with other Fintech rivals in the market, this model has been developed based on the most recent cutting-edge technologies and Fintech requirements and functions that have a direct impact on banks' main systems and products. The model has been developed based on the 6th main Fintech core technologies as the following: Remittances & Payments, Big Data & Artificial Intelligence, Digital Banking, Lending & Alternative Financing, Security & Risk Management, and Blockchain Services, these six categories are the main Fintech categories worldwide that a bank could compare

its competencies and capacities according to these global Fintech requirements in order to be capable to follow the fast pace in the digital financial services.

The researcher used the categories mentioned in table 1 (Fintech Core technologies) to reveal the extent of application of these categories by banks through personal interviews with the top three banks in Palestine in Fintech adoption and experience in this domain, these banks have the highest Fintech services and committed to providing the most recent technologies in this field, so the researcher builds this model to compare the compliance and the adoption for each category by these banks. The author used the mean analysis for each category and then used the mean for all categories to measure the overall compliance of this model.

3.2.3. Validity of Questionnaire

This study uses Principal Component Analysis (PCA) in order to test the study model; convergent validity. Validity of instrument means the degree that the study model is a good fit with survey data, that's including convergent validity test. "The convergent validity reflects the correlation degree of multiple indicators for a variable, which is measured by the average variance extracted AVE of the latent variable, the CR, and the loading of corresponding measurable variables" (RUVIO et al., 2008, p.41). The AVE of the sample must be larger than 0.5, while the loadings of the study measurable variables must be greater than 0.7 (RUVIO et al. 2008, CHIN 1998). All the evidences in table 6 support the convergent validity of all constructs. As shown in table 6, the AVE was greater than 0.5 for all variables and CR is larger than 0.7, so the validity is granted in this model.

Table 6. Validity Test

Variable	Items	AVE		CR		Result/Pass
		Millennials	Gen Z	Millennials	Gen Z	
Perceived Usefulness	4	0.542	0.544	0.756	0.763	Yes
Perceived Ease of Use	3	0.533	0.584	0.706	0.734	Yes
Trust	2	0.529	0.531	0.722	0.756	Yes
Brand Image	3	0.512	0.533	0.716	0.703	Yes
Perceived Risk	3	0.573	0.760	0.800	0.904	Yes
Government Support	3	0.517	0.819	0.729	0.931	Yes

User Innovativeness	2	0.536	0.527	0.704	0.759	Yes
Attitude	3	0.522	0.665	0.766	0.856	Yes
Intention	2	0.562	0.751	0.719	0.858	Yes

Source: Author's own calculation.

3.2.4. Normality Test

The researcher used different methods to examine if the study data closely to be normally distributed, Skewness and Kurtosis were used, the researcher extracted the Z-Value per each Skewness and Kurtosis if the values between these cutoff points (-1.96,1.96), the researcher used this measure for both questionnaire the Millennials and Gen Z, tables (7 & 8) show the results from this test (FIELD, 2018, p.79).

Table 7. Skewness & Kurtosis Z-Value

	Millennials						**Gen Z**					
	Skewness		**Kurtosis**		**Z-Values Skewness**	**Z-Values Kurtosis**	**Skewness**		**Kurtosis**		**Z-Values Skewness**	**Z-Values Kurtosis**
PU	-.146	.170	-.414	.338	-0.9	**-1.2**	-.246	.167	-.620	.333	-1.47	**-1.86**
PEU	-.133	.170	-.333	.338	-0.8	**-1.0**	-.253	.167	-.567	.333	-1.52	**-1.70**
TRU	-.157	.170	-.366	.338	-0.9	**-1.1**	-.212	.167	-.516	.333	-1.27	**-1.55**
BI	-.043	.170	-.277	.338	-0.3	**-0.8**	-.120	.167	-.537	.333	-0.72	**-1.61**
PR	.069	.170	-.201	.338	0.4	**-0.6**	-.012	.167	-.542	.333	-0.07	**-1.63**
GS	.071	.170	-.138	.338	0.4	**-0.4**	.066	.167	-.371	.333	0.40	**-1.12**
UI	-.005	.170	-.211	.338	0.0	**-0.6**	-.304	.167	-.614	.333	-1.82	**-1.85**
ATT	-.130	.170	-.170	.338	-0.8	**-0.5**	-.318	.167	-.582	.333	-1.91	**-1.75**
INT	-.246	.170	.139	.338	-1.4	**0.4**	-.304	.167	-.404	.333	-1.82	**-1.21**

Source: Author's own work based on SPSS results

According to table 7, all the Z-Values for both Skewness and Kurtosis were between -1.96 and 1.96, which means that the study data are a little skewed and kurtosis for all the study variables, but it doesn't differ significantly from normality. The researcher can assume that the data are approximately normally distributed (GEORGE & MALLERY, 2010; TROCHIM & DONNELY, 2006; FIELD, 2009; GRAVETTER & WALLNAU, 2014).

The second method the researcher used is Kolmogorov-Smirnov and Shapiro-Wilk to test normality based on the p-value for each variable in the study, the results supported if the p-value is greater than 0.05 then we could assume that the data is approximately normally distributed. The blow table shows the test for both Millennials and Gen Z for the nine dimensions of the study variables (SALKIND, 2007).

Table 8. Kolmogorov-Smirnov and Shapiro-Wilk Test

Tests of Normality (Millennials)							Tests of Normality (Gen Z)						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk				Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.		Statistic	df	Sig.	Statistic	df	Sig.
PU	.194	550	.052	.932	550	.662	**PU**	.130	560	.057	.936	560	.762
PEU	.123	550	.059	.916	550	.601	**PEU**	.155	560	.054	.930	560	.642
TRU	.168	550	.524	.878	550	.413	**TRU**	.182	560	.523	.925	560	.613
BI	.195	550	.510	.942	550	.794	**BI**	.171	560	.530	.933	560	.548
PR	.113	550	.064	.965	550	.895	**PR**	.112	560	.067	.963	560	.527
GS	.153	550	.061	.955	550	.743	**GS**	.125	560	.059	.958	560	.437
UI	.132	550	.052	.905	550	.591	**UI**	.162	560	.051	.908	560	.416
ATT	.150	550	.058	.894	550	.470	**ATT**	.152	560	.052	.918	560	.541
INT	.103	550	.067	.819	550	.415	**INT**	.121	560	.061	.864	560	.356

a. Lilliefors Significance Correction

Source: Author's own work based on SPSS results

Table 8 revealed that both tests support the normality assumption that the study data is approximately normally distributed, all of the sig. are above 0.05 which indicates that the data are approximately normally distributed (STEINSKOG et al. 2007, SHAPIRO et al. 1968).

3.2.5. Collinearity Test

The researcher used the collinearity test through SPSS using Linear Regression test to assess the Multicollinearity effect among the study variables, here in this study the researcher used two different questionnaires for TAM (Technology Acceptance Model), one used for Millennials and the other for Gen Z to check their adoption intention for Fintech using this model. So, the collinearity test used for both questionnaires, the researcher depends on the VIF cutoff which is 5, all VIF below 5 will be accepted according to RINGLE et al. (2015) and it means that Multicollinearity doesn't exist between the tested variables in the study, Multicollinearity means

that there are two or more variables in the study model are highly linear related, it is a problematic issue in assessing the relationships between the variables.

Table 9 shows the collinearity test for both questionnaires, Millennials, and Gen Z.

Table 9. Collinearity test/ Millennials & Gen Z

Coefficients[a]					
Model		Millennials		Gen Z	
		Collinearity Statistics		Collinearity Statistics	
		Tolerance	VIF	Tolerance	VIF
Dimensions	PU	.465	**2.150**	.310	**3.226**
	PEU	.523	**1.913**	.359	**2.785**
	TRU	.481	**2.077**	.397	**2.517**
	BI	.703	**1.423**	.450	**2.224**
	PR	.779	**1.284**	.624	**1.603**
	GS	.637	**1.569**	.729	**1.371**
	UI	.618	**1.618**	.359	**2.788**
	ATT	.485	**2.060**	.280	**3.570**

a. Dependent Variable: INT

Source: Author's own work based on SPSS results.

Table 9 shows that all the VIF for both questionnaires were below 5 then the researcher concluded that there is no multicollinearity among the study variables.

3.2.6. Reliability of Questionnaire

Pre-testing the questionnaire considered an important step for the earlier observations through the pilot test technique in order to ensure its reliability. According to FINK (2003, p.117), the pilot study must have at minimum 10 questionnaires. This thesis pre-tested by using a 30 sample of students and the same number of 30 people under the criteria to achieve the objective of the questionnaire. The questionnaires tested for reliability and content forms to ensure the conformity and the compliance with the research instrument validity guidelines (MACKENZIE, 2003, p.323).

This thesis used Cronbach Alpha reliability test, this test used in both the pilot study and in the final survey. The researcher used this test in this study by distributing 30 questionnaires for two samples, these questionnaires were distributed for each sample which is similar to the targeted

sample that has similar specifications (using TAM model) as a pilot thesis. The researcher paid significant attention and the importance of discussing the content and the objective of these questionnaires with the study respondents.

The researcher used to give the required explanations to the study respondents in the main places that the study takes place, this process became before answering these questionnaires. Because of these explanations, all the participants got ready and they were able to answer the questionnaires. This method was intentionally adopted by the researcher to achieve the best meaning of data reliability. According to TAVAKOL AND DENNICK (2011), the study must meet the acceptable Alpha value which is aligned with the instrument statistical requirement, so the acceptable value must be equal to or greater than 0.70

The questionnaires' reliability can be tested according to TAVAKOL & DENNICK (2011) by comparing the questionnaires results with the threshold value which is 0.7. Table 10 shows that the reliability values for all the study variables are accepted according to the accepted value which is greater or equal to 0.7.

Table 10. Reliability test/ Millennials & Gen Z

Variable	Items	Reliability		Result/Pass
		Millennials	Gen Z	
Perceived Usefulness	4	0.814	0.780	Yes
Perceived Ease of Use	3	0.762	0.784	Yes
Trust	2	0.908	0.812	Yes
Brand Image	3	0.705	0.798	Yes
Perceived Risk	3	0.868	0.910	Yes
Government Support	3	0.875	0.918	Yes
User Innovativeness	2	0.747	0.713	Yes
Attitude	3	0.852	0.897	Yes
Intention	2	0.878	0.916	Yes

Source: Author's own work based on SPSS results

As shown from table 10, validity of the questionnaires was examined by coefficients correlation and the results for all dimensions were above 0.5, also, reliability of the instruments was tested by using Cronbach's Alpha coefficient and the result was found to be more than 0.7.

3.3. Conceptual Model

The overall objective of this thesis is to find out the readiness of the Palestinian Banks for the Fintech technology in the banking industry; through studying the Palestinian financial ecosystem, to discover the financial situation if it encourages the adoption of Fintech or it is a threat for the banks. Moreover, the study shows two main players in the ecosystem which are the main drivers to adopt Fintech in the market; these two players are Millennials and the Generation Z, these two generations have a significant impact on the Fintech adoption intention, it assists banks to discover their adoption intention and to tailor and digitize the current banks services to meet their needs to compete the current Fintech competitors in the market; as these companies targeted Millennials and Gen Z in the first line because of the high unbanked ratio in Palestine which is around 70% of the population.

So, the researcher used the extended Technology Acceptance Model to explore these generations intention to adopt the Fintech services, as it is an indicator for the banks and other Fintech companies about the market direction and trends toward these financial technology services as it is a guideline and strategy that lead all of them to provide these generations with suitable financial services that fit and satisfy their needs. Therefore, the researcher in this thesis formulated the conceptual framework to be the guide for the study as the follows in figures 13 and 14.

The researcher used the Structural Equation Modeling (SEM) by using AMOS software version 24 to examine the impact of E-TAM dimensions on these three internal variables from the same E-TAM model which are the most influenced dimensions in the E-TAM that affect Millennials and Gen Z Fintech adoption. These three variables are (Attitude, Perceived Usefulness, and Intention) considered as the dependent variables of the study; while the rest of the variables were independent variables. SEM is used in this study because it is one of the most efficient statistical methods which deals with the relationship between the study variables by using the covariance matrix, multiple regression, and path analysis tests (POOLTHONG & MANDHACHITARA, 2009). The researcher designed the conceptual models of this study for each generation based on these three determinants (Attitude, Perceived Usefulness, and Intention), in each model the researcher examined the impact of all of the E-TAM dimensions on these three variables and how could interpret the variance per each variable. So, this study used the SEM to reveal the relationship between the study variables through the covariance matrix. Moreover, the researcher used the SEM

to measure the influence of independent variables on the study dependent variables. SEM estimates' calculations were used to predict the econometric equation for the study variables. The researcher designed the study conceptual models illustrated in the following two figures 13 & 14; the results in these two figures are based on the SEM analysis results (Path Analysis, regression weights, and the squared multiple correlations).

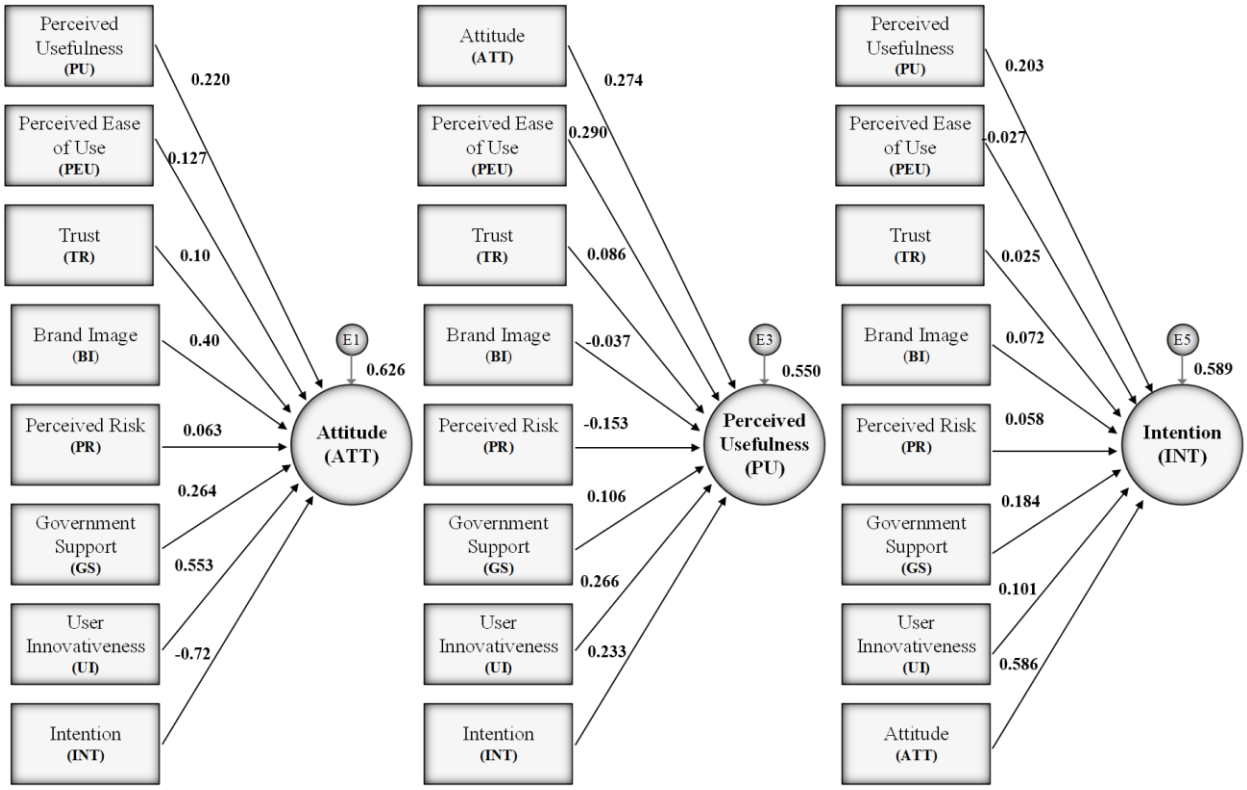

Figure 13. SEM Conceptual Model 1-2 (Millennials)

Source: Author's own construction (Derived from E-TAM)

Note: Numbers (0.626, 0.550, 0.589) obtained from the squared multiple correlations tables, while other number extracted from the Standardized Regression Weights tables (Appendix 2)

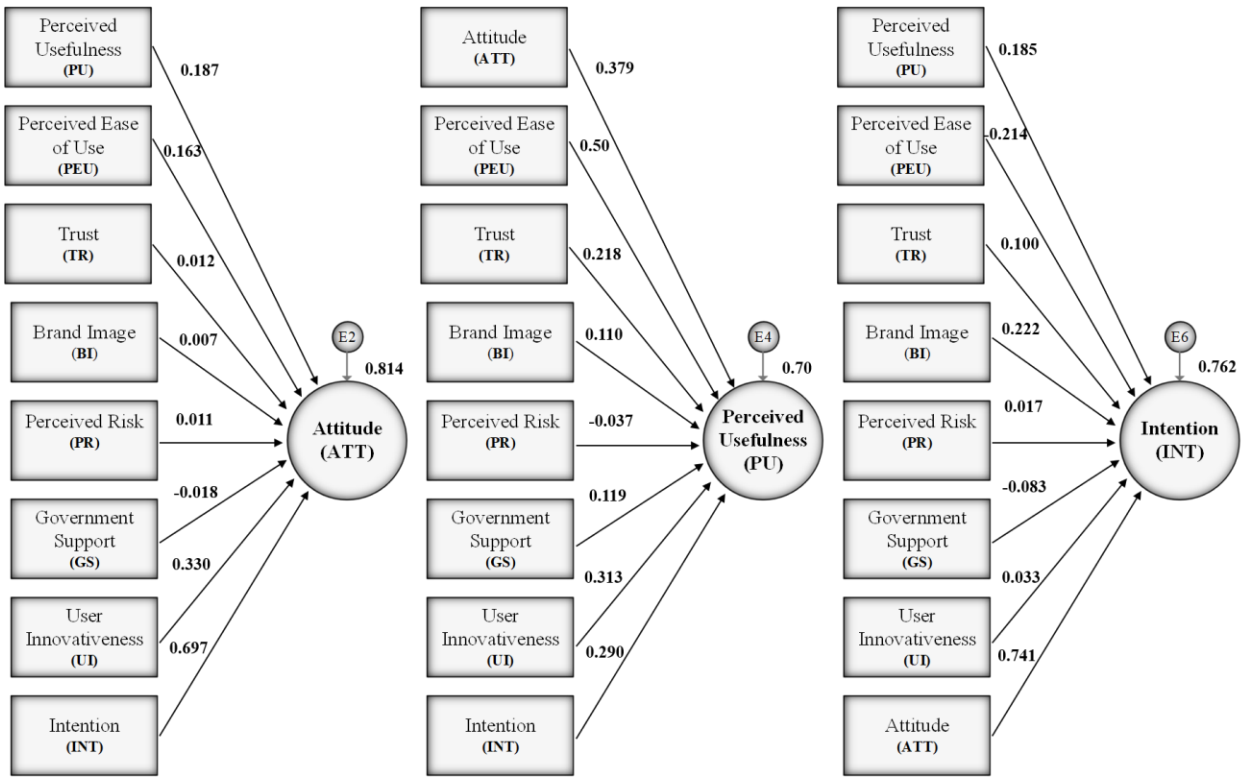

Figure 14. SEM Conceptual Model 2-2 (Gen Z)

Source: Author's own construction (Derived from E-TAM)

Note: Numbers (0.626, 0.550, 0.589) obtained from the squared multiple correlations tables, while other number extracted from the Standardized Regression Weights tables (Appendix 2)

3.4. Population

The population of thesis is divided into two main segments, Millennials are the generation of people born between 1981 and 1996 (DIMOCK, 2019) and Gen Z is the generation of people born 1997 onward (DIMOCK, 2019) in West Bank Area in Palestine. The questionnaires were distributed randomly via social media channels to achieve an acceptable sample size; it was in the form of e-Form questionnaire targeted people whom in the mentioned age. Moreover, for the Gen Z population, the researcher chose a very famous and popular location to distribute his e-Form questionnaire which is the Arab American University-Palestine (AAUP) with 12,000 students' population. It consists of a complete mix of students of the targeted age, the university has an optimal distribution of students according to the geographic location to reflect the Palestinian market opinion toward Fintech adoption intention. AAUP has been selected for the dedicated Gen

Z as it expresses exactly the required age group (18-24 years), location diversity, different cultures, and different financial behavior. While for Millennials the author targeted the bank users in West-Bank, Palestine (age group 25-40, 1.1217 Million, 22% of Population). The researcher targeted this age group through social media channels, the main social media channels used to distribute the survey are FB and LinkedIn, and the researcher collaborated with a specialist in social media to target this group, the researcher aimed to target the employees within this age segment as the majority have a bank account and Fintech experience. Appendix 1 (Palestine Population) shows the demographic distribution and the number of the population per each group and location.

The researcher also used the technical interview technique (this type of interview used with IT specialists because the interview is related mostly to IT categories) to explore the pioneer Palestinian banks in Fintech adoption and their readiness for the Fintech cutting-edge technologies to adopt and digitize the latest financial technologies in the banking industry, so the researcher holds interviews with three pioneer banks in this domain (Fintech Industry), actually the banks' top management insisted to keep their names hidden due to the sensitive data that they provide for this research. The researcher selected one Islamic bank which is the highest reputed bank in Palestine and it has a significant impact on the digital financial industry in Palestine. Whereas the author selected two Palestinian commercial banks within the same criteria as the Islamic Bank. There are 14 registered banks in Palestine (table 11) according to the Palestinian Monetary Authority, local and foreign, there are 7 foreign banks and 7 local banks. There are three Islamic Banks from the local banks, Palestine has no international foreign Islamic Banks. The questionnaires were limited for the Palestinian Banks because it is hard to make a sensitive interview about this topic with an international bank, it needs high coordination and negotiation with their top management to accept, and also all their headquarters are out of Palestine it needs high logistician efforts. Banks in Palestine employ around 8,587. Table 11 shows the banks' list.

Table 11. Banks in Palestine

Number	Bank Name	# of Employees	# of Branches	Classification Local/ Foreign
1	Bank of Palestine	2,326	98	Local
2	Arab Bank	923	32	Foreign
3	The National Bank	1,296	73	Local

4	Quds Bank	741	39	Local
5	**Palestine Islamic Bank**	664	45	Local
6	**Arab Islamic Bank**	595	25	Local
7	Cairo Amman Bank	514	22	Foreign
8	The Housing Bank for Trade & Finance	279	15	Foreign
9	Bank of Jordan	344	20	Foreign
10	Palestine Investment Bank	272	20	Local
11	Jordan Ahli Bank	218	10	Foreign
12	Jordan Commercial Bank	138	7	Foreign
13	**Safa Bank (Islamic Bank)**	127	9	Local
14	Egyptian Arab Land Bank	150	7	Foreign
Total		**8,587**	**422**	**-**

Source: Author's own work

3.5. Sample size

The researcher used the stratified sampling to insure the equitable presentation for the study targeted population for the two questionnaires. Thesis sample size identified according to KREJCIE & MORGAN (1970) equation as the following:

Study minimum sample size (n)

$$(\boldsymbol{n}) = \boldsymbol{p}\% \times \boldsymbol{q}\% \times [\frac{\boldsymbol{z}}{\boldsymbol{e}\%}]^2$$

Where:
"n : the sample size required
p% : the proportion belonging to the specified category
q% : the proportion not belonging to the specified category
z : the z value corresponding to the level of confidence required
e% : the margin of error required"

"The adjusted sample size n is calculated as:" $\boldsymbol{n} \div \{\mathbf{1} + \left[\frac{\boldsymbol{n}}{\boldsymbol{N}}\right]\}$

Where:
"n: the sample size
N: the total population"
The sample = 50% × 50%× [1.96/5%]2
= 384.16

The University Population (Arab American University- Palestine) is 12,000 students.

The adjusted sample size =384.16 ÷ {1 + [384.16/12,000]}

Minimum Sample size = 372 observations, and the minimum number will be 385 samples for any population size.

A number of 600 questionnaires distributed to respondents for both generations. A number of 589 respondents out of the total 600 have been retrieved, 29 questionnaires have been discarded due to the corruption in data, so 560 questionnaires were adopted for the analysis for Gen Z population. The response rate is 98%. While for Millennials, 600 questionnaires distributed via social media, 568 have been retrieved, 18 have been discarded due to the corruption in data, so the response rate is 95%, so 550 questionnaires were adopted.

3.6. Method of data analysis

The researcher used SPSS version 25 (the statistical package for social science) and AMOS version 24 (Analysis of Moment Structures) for data analysis. The researcher checked that study data for entry errors and ensured the stability and the accuracy of data. The study used the parametric tests to assess the relationship between the study variables. The parametric tests were used for this purpose as the following: Frequency test used to describe the demographic variable, mean and standard deviation used for the research questions, one sample T test to test part of hypotheses, where AMOS used to find the correlations among the study variables to examine the relationship between variables, Path Analysis, and squared multiple correlations were used to examine the significant impact of the E-TAM model on Millennials and Gen Z Attitude/Perceived Usefulness/Intention of Fintech Adoption.

4. RESULTS AND DISCUSSION

4.1. Participants' Social Profile

This study will reflect the Financial Behavior and the Fintech Adoption Intention among two Generations in Palestine, Millennials (born between 1981-1996) & Generation Z (1997 onward) in Palestine.

The study was based on a full structured questionnaire distributed to more than 600 persons under the target population of this study basis on these two categories on the base of a sample random sampling technique. For the Gen Z questionnaire; the targeted population is the students of the Arab American University in Palestine, West Bank Area.

Table 12. Participants' Social Profile

Social Profile		Millennials		Valid N	Gen Z		Valid N
Items	**Dimensions**	**Frequencies**	**%**		**Frequencies**	**%**	
Sex	Male	297	54.0%		263	47.0%	
	Female	253	46.0%		297	53.0%	
Monthly Income	500-1599 NIS	48	8.8%		74	13.2%	
	1600-2599	89	16.1%		74	13.2%	
	2600-5000	225	41.0%		220	39.2%	
	>5000	188	34.1%		192	34.4%	
Own Bank Account	Yes	526	95.6%		346	61.8%	
	No	24	4.4%		214	38.2%	
e-banking Usage	I don't have Bank Account	19	3.4%	**550**	174	31.1%	**560**
	I don't Use it	199	36.1%		248	44.3%	
	Once a Month	134	24.4%		69	12.3%	
	Twice a Month	32	5.9%		27	4.8%	
	3+ Times a Month	166	30.2%		42	7.5%	
	Yes	550	100.0%		560	100.0%	

Own Smartphone	No	0	0.0%		0	0.0%	
Tuition Fees Payment Method	NA	318	58.0%		0	0.0%	
	Cash	121	22.0%		426	76.0%	
	Money Transfer	105	19.0%		128	23.0%	
	Cheque	6	1.0%		6	1.0%	

Source: Author's own work

4.2. Analysis of Participants' Social Profile

- Table 12 shows that around 40% of Gen Z is Unbanked, it is a positive indicator for both banks and Fintech companies to target this segment.
- **Around 45% of Gen Z don't use e-Banking service (the following four sentences interpret this statement)**
  - It means that there are no awareness programs from the bank side to encourage and motivate the usage of e-banking services.
  - This segment has no knowledge or information about the advantage of using this kind of e-service.
  - The bank advantage in cost reduction when this segment directed to use this e-channel.
  - Around 12% of Gen Z use e-banking once a month; it has many indicators for banks, Did the banks meet their needs and wants through e-banking? Did they provide the exact service to use via e-banking? Is it easy to use? Is it an effective tool to use (time-saving, 24h availability, user friendly... Etc.)?
- **Around 36% of the Millennials don't use e-banking service, it is a negative indicator for both banks and Fintech companies to target this segment (the following four sentences interpret this statement)**
  - It means that percentage is a burden for banks and Fintech companies, it indicates that this segment has no interest to use e-channels, it is a bad indicator for Fintech companies, if this percentage will not be treated and to direct them to use the e-services in the future they will lose the financial benefits generated from their usage.
  - On the other side, it will be hard then to adopt the new technologies associated with their financial services.

- It is a chance for Fintech on the optimistic side, that they can target this segment to provide them with easy and simple financial solutions that meet their needs.
- It deserves to evaluate the effectiveness and the efficiency of the provided e-services in order to achieve routes that will guide the banks about the suitable services and channels that will fit the customer's needs.
- **Around 61% of Millennials use e-banking either once/twice/ +3 a month; it indicates that the majority of users use the e-banking services (the following three sentences interpret this statement):**
- The positive indicator for Banks; banks could attract millennials (with no e-services experience) to adopt the e-services in the future, and they are the winning marketing tool to encourage others to use these services, the word-of-mouth marketing strategy is still the most effective marketing strategy in Palestine and WW.
- The negative indicator, these types of users already used and have feedback about the usage of e-services, they have the knowledge, feedback, suggestions, and their own experience; so, Fintech companies can attract them (positive indicator for Fintech) to use their services as it is brand new services in the financial services that depend on the availability of technology and the ability to use this technology. So, Fintech can provide them with the exact products and services that meet their needs.
- Another negative indicator, this segment (61%) could be underbanked in the near future, they will quit using banks services to use the Fintech services due to many reasons, ease of use, 24h service availability, feasibility, profitability if it is related to a wealth management module that provided by Fintech companies.

For Fintech companies, it is the chance to exploit this segment:

- Data shows that all the sample own smartphone by (100%).
- It is one of the main indicators that Fintech relies on to penetrate the market and spread its services.
- The other Indicator is the percentage of unbanked/Underbanked Gen Z and Millennials, the recent financial inclusion studies show that more than 50% of the Palestinians are unbanked.

- The important note is around 25% of Gen Z and 19% of Millennials transfer money to pay their tuition fees, which means it is a great opportunity to push them to pay these fees via e-Wallet.

For Banks, there is a good indicator, actually it is a critical one which needs higher negotiation skills and capital to enhance and empower their appearance in the Higher Education Organizations:

- Data shows that the majority of Gen Z have a bank account in the bank that has an appearance in the same university (43% the dominance of one bank compared with others) so it is a major role that the bank can play to increase its market share among this generation and promote its services.
- Banks have the opportunity to adopt the Fintech role to invest or establish this kind of services under the umbrella of Fintech services under the control of the bank (partnership, cooperation, investment, acquisition business model with Fintech companies).

For Fintech, it is also a good indicator, actually this point also enhances the idea behind fintech companies to target the students in the Universities, if they will establish contacts with the top management of these institutes to open e-Wallet account for the unbanked segment as the first priority, then opening new virtual accounts for students who already have a bank account.

4.3. Analysis of Participants' Financial Behavior & Fintech Perception

Table 13 shows the analysis results for both Millennials and Gen Z Financial behavior and Fintech perception.

Table 13. Results Comparison between Millennials & Gen Z (1-4)

Item	Millennials	Gen Z	Notes
Most Important About Financial Services	Reliability/Trust 45%	Ease of Use 46%	Let your services easy to use to be adopted by Gen Z
	Ease of Use 40%	Reliability/Trust 35%	While investing in your trust image with Millennials and let your services easy to use
Financial Services Access (Method)	Branch Visit 50%	Branch Visit 62%	Gen Z: Lower Trust indicated higher visits to the bank itself
	Mobile Banking 29%	Mobile Banking 17%	Millennials: Higher Trust, leads to higher mobile banking usage
Using Banks Services rather than Fintech	65% Agree	59% Agree	Higher Trust with Millennials leads to higher use of bank services
			While lower trust leads to higher intention to use Fintech services
Payment Method (Frequently)	Cash 58%	Cash 80%	Lower # of Banks Account holders (Gen Z) leads to use cash intensively
	Debit/Credit Card 30%	Debit/Credit Card 18%	Affording Millennials Debit/Credit cards leads to higher card payments
			Fintech Advantage (Chance): to use e-wallet service to migrate cash users into e-payment through e-wallet
Fintech Awareness	48%	38%	Good Indicator for Fintech industry to start in the Palestinian market
Using Fintech services	9% Active Users	6% Active Users	Using Online Payment Services
	46% User	25% Users	
			e-Payment service is needed by these two segments in the market

Source: ABU DAQAR et al. (2020)

Table 14. Results Comparison between Millennials & Gen Z (2-4)

Item	Millennials	Gen Z	Notes
Prefer Using e-Wallet to access work Payroll	88%	NA	Opportunity for Fintech to provide e-Wallet service for companies and organizations
			Opportunity for companies and organization to reduce costs and getting rid of indemnity
Using e-Wallet to pay tuition fees	84% want it	84% want it	It shows that e-Wallet service is needed in the market, it promotes Fintech services
Prefer Real-time Service	87% Agree	70% Agree	The majority need real-time financial services, which means Banks specifically need to highly invest in technology to achieve this milestone in their financial services
			Fintech opportunity to provide solutions and services to grant banks this kind of service
Need an Instant Money Transfer (Previous situation)	50% faced this situation	47% faced this situation	This means the market in need for an instant money transfer service
What do you think about Fintech?	48% Complementary	45% Complementary	Majority said Fintech companies is playing complementary role
	19% Competitor	32% Competitor	We conclude that Gen Z is dominant to adopt Fintech services in the market
What service let you quit your bank	Better Service,	Better Service, Ease of Use &	We conclude that both Generations agreed that Fintech services could

to use Fintech services?	Ease of Use & Speed of Service	Speed of Service	guarantee these three categories of Fintech features compared with banks services

Source: ABU DAQAR et al. (2020)

Table 15. Results Comparison between Millennials & Gen Z (3-4)

Item	Millennials	Gen Z	Notes
Fintech Services Security through Mobile	63% Secured	56% Secured	It means that security issue perception toward fintech services is granted, no problem with security issues
Financial Trust (Banks)	86% trust banks	82% trust banks	It means that Banks have a solid base and could promote Fintech services with the cooperation with Fintech companies, and they could promote new financial services competing fintech companies
The Benefit of Mobile Banking Services	61% Time-Saving	41% Time-Saving	Millennials looking for time-saving in accessing financial services
	25% 24h Access	30% 24h Access	Gen Z looking for the service availability to be 24h
Fintech Services Cheaper than Banks Services	62% think so	66% think so	It shows that all generations have a positive perception that Fintech services are cheaper
			It means that they have the intention to adopt the Fintech services
Promotion is a driver for e-Banking usage?	90% agreed	90% agreed	We conclude that promotion is a key factor to promote and encourage the usage of e-Banking services
Financial Services want to use at Mobile	63% Payment Services	58% Payment Services	Banks and Fintech must target the payment category

	26% Wealth Management	24% Wealth Management	It a surprising result, banks said customers have no interest in these services, but in fact, it is the contrary
	6% Robot Advisor	14% Robot Advisor	Customers want a personal financial consultant to manage their financial issues

Source: ABU DAQAR et al. (2020)

Table 16. Results Comparison between Millennials & Gen Z (4-4)

Item	Millennials	Gen Z	Notes
Which e-Wallet service wants to use?	e-Bills Payment	Purchasing via e-commerce	Millennials prefer the four categories with the same priority
	Purchasing via e-commerce	Deposit and Withdraw	
	Deposit and Withdraw	e-Bills Payment	Gen Z prefer these four categories (the first category has the main priority)
	Money Transfer	Internet & Mobile top-up	
Type of Bills you want to pay on Mobile?	Mobile Phone	Mobile Phone	Millennials prefer the four categories; mobile phone bills are the highest among them
	Mobile Charge top-up	Mobile Charge top-up	
	Goods for Work	Tuition Fees	Gen Z prefer these four categories mobile phone bills is the highest among them
	Others	Others	
Daily Mobile Apps Usage	The majority of Millennials 53.3% using mobile apps on daily basis between 70-100%	71.2% of Gen Z using mobile Apps daily, between 70-100%, The notable issue is 21.7% of them using apps on this percentage 90-100%	The results indicate that Gen Z have more app experience and usage than Millennials, it helps banks and Fintech to target them toward using mobile app services

Source: ABU DAQAR et al. (2020)

4.4. Questions Results

Q1: To answer the thesis question: "What is the readiness level of the Palestinian Banks for the Fintech requirements in the financial digital transformation?"

To answer this question the author depends on the last cutting-edge standards of Fintech core technologies that a bank should establish to create the base of Fintech services in Future as a competitive advantage. The readiness is completely based on the technology base of Fintech.
The six Categories of Fintech Core technology as follows:

The author used the categories mentioned in table 1 to check the compliance of the three main operated banks in Palestine investing in Fintech services along with their high interest in adopting the latest technology to digitize the traditional banking services into pure automated services.

Table 17. Banks' Compliance with Fintech Core technologies

Sub-Category	1. Remittances & Payment			Sub-Category	2. Big Data & AI			Sub-Category	3. Digital Banking			Sub-Category	4. Lending & Alternative Financing			Sub-Category	5. Security & Risk Management			Sub-Category	6. Blockchain Services		
	Bank A	Bank B	Bank C		Bank A	Bank B	Bank C		Bank A	Bank B	Bank C		Bank A	Bank B	Bank C		Bank A	Bank B	Bank C		Bank A	Bank B	Bank C
1.1	x	x	x	2.1	x	x	√	3.1	x	x	x	4.1	x	x	x	5.1	√	√	√	6.1	x	x	x
1.2	√	√	√	2.2	x	x	x	3.2	x	x	x	4.2	x	x	x	5.2	x	√	√	6.2	x	x	x
1.3	x	√	x	2.3	x	x	√	3.3	√	√	x	4.3	x	x	x	5.3	√	√	√	6.3	x	x	x
1.4	x	√	√	2.4	x	x	x	3.4	√	√	√	4.4	√	√	√	5.4	√	x	√	6.4	x	x	x
1.5	√	√	x	2.5	√	x	x	3.5	x	x	x	4.5	x	x	x	5.5	√	x	x	6.5	x	x	x
1.6	√	√	√	2.6	x	x	x	3.6	√	√	√									6.6	x	x	x
Total	50 %	83 %	50 %		17 %	0 %	33 %		50 %	50 %	33 %		20 %	20 %	20 %		80 %	60 %	80 %		0 %	0 %	0 %
AVG	61%				17%				44%				20%				73%				0%		

Source: Author's own construction

Table 17 shows the results based on these categories and subcategories as illustrated in table 1, it expresses how banks use/adopt these technological requirements to compete the massive competition imposed by the Fintech companies worldwide:

- The two categories that banks in Palestine have an impact are (Remittances & Payment and Security & Risk Management); these categories are the core functions and the standard systems required to provide financial services for the clients. It is clear that banks have many differences in this category, API development, Third-party integration are the main sub-category functions that banks need to invest in and to adopt such technology to provide the associated services with this technology in their internal systems. While one of these banks has a better recognition for the fast pace of disruptive technology in Financial services; so, these banks has the solid base to establish the required services and to respond immediately to any competition or to fulfill the client's requests. While all banks missing the Omnichannel payment feature; it helps the bank clients to operate all types of payments either locally or internationally in one place, in one platform in the bank itself through its digital platforms. The majority of these banks achieve 50% of the required technology to better compete in the market and achieving higher customer base through providing the competitive services aligned with the customer's needs.
- For the second category (Security & Risk Management); the security requirements were mostly fulfilled by banks as it's the core and the obligatory requirements for the safety of the financial transactions, the majority of the banks are a little bit behind the risk management technology; as Advanced Risk System and Fraud Detection, they need to enhance their entire system to embed it with the latest technology that enables their systems to discover the risk issues automatically through the financial transactions.
- Digital Banking: the results show a shocking result in this category where the majority of these banks are within the threshold, and others didn't meet at least the threshold of the requirements for digital banking. It's clear that there are weaknesses in their digital banking systems; the systems didn't support the Personal Financial Management, Onboarding New Customers & Banking Data Aggregation APIs. Through the structured questionnaire in this study; both generations (Millennials & Gen Z) agreed that they need the personal financial management services to be provided in their digital financial services, and though these results based on the interviews with the banks; they have no features support this service in their digital services. The current banking system didn't support the digital acquisition of new customers; for example, the long account opening procedure makes it

difficult for the customer to spend much time and to sign dozens of papers to open and account; taking into consideration some of the challenges that prohibit banks to adopt the full digitizing acquisition procedure is that the digital signature still not validated in Palestine. While Data Aggregation APIs mean that the client will Integrate his financial solutions through an API to avoid the need to collect banking data to access services; all banks have no access to this technology in their systems.

- Big Data & AI: The majority of banks have no intelligent systems for Big Data Analysis and Artificial Intelligence systems embedded in their banking software's and systems; where predictive analytics and data-driven decisions are the core of AI and Big Data systems. Some banks have the experience to adopt business intelligence systems and they are using these systems but not it's not a full AI system, it's a platform linked with the banks' systems to retrieve data and start analyzing these data but it doesn't give solutions and predictions.
- Lending & Alternative Financing: Banks have no access and have no systems and technology to enter the lending space and the other supply chain financing services either locally and internationally; these results aligned with the same results that the author obtained when he did a deep interview with PMA (Palestinian Monetary Authority) it is the government body which is responsible on all banks issues stating from the regulations and ending with their services; crowdfunding and P2P lending is still not validated in Palestine so it is a weakness in the overall financial system in Palestine.
- Blockchain Services: The banks in Palestine still far away from this technology to be implemented in Palestine, due to the high cost of this technology besides to it needs that the government in Palestine to establish and create the infrastructure for this technology in order to be adopted by the banks in Palestine, without this intervention the banks will not be able to use this technology in their financial services.

The Answer to the question: We conclude that the banks' readiness for the Fintech era is around 35%, which is classified as a low level of readiness. (Mainly two categories out of six are applicable to meet the Fintech requirements in the banking financial technology).

Q2: What is the Attractiveness level of the Palestinian Market for Fintech Services?

This question has been answered through interviews with the bank's top management, there is a consensus that the Palestinian market is attractive for Fintech services; there is something which is the main pillar of Fintech to target a market which is the unbanked ratio in the county, in Palestine the unbanked ratio is 70%, which means that this segment has no bank account, they are the target segment for these companies to acquire them in new Fintech services. We can conclude that level of attractiveness is High due to the high percentage of the unbanked in Palestine. Furthermore, there are feasibility studies that show the feasibility of these Fintech services in the Palestinian market. These studies are based on business intelligence software that measures the potential of these services according to the customers' financial behavior. The banks didn't provide any specific data in this regard because of its sensitivity in the market.

Q3: What is the usage level of Fintech Services among Millennials and Gen Z in Palestine?

The results reflect the two generations usage behavior for Fintech services, it was clear that the usage is low according to the low scores that both generations scores regarding the usage behavior (the only method I used for e-payment, I use it frequently), Millennials is 19% while Gen Z is 11.4%.

Q4: What is the intention level of Fintech Services usage among Millennials and Gen Z in Palestine?

The results from the questionnaires show that the Intention level of Fintech services usage is high among the two generations. (Millennials, Gen Z), (M=4.0732., SD=0.5596), (M=4.1297., SD=0.8252) respectively.

Q5: What is the Government Support level for Fintech Services in Palestine from the Millennials and Gen Z point of view?

The results show that the Government Support level of Fintech services in Palestine is medium among the two generations. (Millennials, Gen Z), (M=3.216., SD=0.867), (M=3.165, SD=0.979) respectively. The results were expected from the respondents; actually, Fintech services need the Government Support to provide a suitable infrastructure in terms of the technical part as

blockchain infrastructure. Furthermore, the Political situation plays a significant role in these kinds of services in Palestine; so, government intervention is needed to provide a solid base for the international companies to invest in this technology in the country, banks and Fintech companies will be the direct parties who involved in this intervention to gain benefits and to secure their business to meet the cutting-edge technology in the financial services.

4.5. Hypotheses Results

Hypothesis 1

H1: Government Support plays a significant role in supporting the Fintech in Palestine (From the Millennials and Gen Z point of view)?

One sample t-test was used to examine the first hypothesis (Government Support plays a significant role in supporting the Fintech in Palestine) in table 18, with a 95% level confidence, table 17 shows that Government Support from the Millennials and Gen Z point of view (mean=3.216, SD=.8678 (mean=3.165, SD=.979) respectively wasn't significantly different from 3.67 (cut point), (t= 53.064, p=0.000) (t= 47.035, p=0.000) respectively. The results support the null hypothesis which means that Government support doesn't play a significant role in supporting the Fintech in Palestine (From the Millennials and Gen Z point of view.

Table 18. The results of one sample t test for Government Support

Generations	Dimension	Mean	Std. deviation	Mean differences	T-value	P – value
Millennials	**Government Support**	3.216	.8678	3.216	53.064	.000
Gen Z	**Government Support**	3.165	.9797	3.165	47.035	.000

Source: Author's own work based on SPSS results

Correlation coefficients among exogenous and endogenous variables.

The size of the value of the correlation coefficient was decided, for indicating the relationship strength between two variables. According to COHEN's standard (1962), the guidelines for assessing the relationship are showing in Table (19):

Table 19. The guidelines for assessing the relationship

Strength	Value
Small	0.10 to 0.29
Medium	0.30 to 0.49
Large	0.50 to 1.0

Source: Author's Own Construction adopted from COHEN (1962)

Hypothesis 2

H2: There is a significant relationship in exogenous and endogenous variables in the Fintech Adoption Intention for Millennials and Gen Z in Palestine

Table 20. Millennials Correlation coefficients among E-TAM variables

Path Direction			Estimate
PEU	<-->	PU	.580
PU	<-->	TRU	.569
PU	<-->	BI	.412
PU	<-->	PR	.067
PU	<-->	GS	.226
PU	<-->	UI	.466
PU	<-->	ATT	.620
PU	<-->	INT	.588
PEU	<-->	TRU	.584
PEU	<-->	BI	.460
PEU	<-->	PR	.044
PEU	<-->	GS	.324
PEU	<-->	UI	.369
PEU	<-->	ATT	.501
PEU	<-->	INT	.454
TRU	<-->	BI	.419
TRU	<-->	PR	.092
TRU	<-->	GS	.431
TRU	<-->	UI	.411
TRU	<-->	ATT	.473
TRU	<-->	INT	.478
BI	<-->	PR	-.134
BI	<-->	GS	.282
BI	<-->	UI	.252
BI	<-->	ATT	.360
BI	<-->	INT	.372
PR	<-->	UI	-.013
PR	<-->	GS	-.339

PR	<-->	ATT	.107
PR	<-->	INT	.053
GS	<-->	UI	.325
GS	<-->	ATT	.240
GS	<-->	INT	.347
UI	<-->	ATT	.570
UI	<-->	INT	.519
ATT	<-->	INT	.722

Source: Author's own work based on AMOS results

Table 20 shows that the correlations between all Extended Technology Acceptance Model variables are seen positive except between (Perceived Risk & Government Support -0.339), Millennials see Perceived Risk of Fintech adoption is negatively correlated with the Government Support; it means the higher Government Support the lower Perceived Risk among all generations. The researcher can show the following results based on table 20, in Palestine, the Millennials Intention toward the Fintech adoption is highly correlated with their Attitude (0.722), Millennials Attitude also highly correlated with the Perceived Usefulness (0.620) of the Fintech services. The top three variables that are highly correlated with Millennials' Intention for Fintech adoption are (Perceived Usefulness, User Innovativeness & Attitude), which means that these variables highly predicted the Millennials' Intention to adopt Fintech services.

While the surprising fact that Perceived Risk has no place or effect on the Millennials Intention to adopt Fintech services; it means that the Perceived Risk toward these kinds of services hasn't any role in Millennials' adoption Intentions. Perceived Usefulness variable is the only variable among all variables that is highly correlated with all variables except with Perceived Risk that has no effect in Millennials adoption Intention of Fintech services. Millennials show that Government Support didn't play that important role to facilitate the mission for Fintech companies to provide the solid base that let these companies offer their Fintech services in the market; these results aligned with the first Hypothesis findings.

Table 21. Gen Z Correlation coefficients among E-TAM variables

Path Direction			**Estimate**
PEU	<-->	PU	.709
PU	<-->	TRU	.600
PU	<-->	BI	.619

PU	<-->	PR	.222
PU	<-->	GS	.061
PU	<-->	UI	.673
PU	<-->	ATT	.769
PU	<-->	INT	.728
PEU	<-->	TRU	.652
PEU	<-->	BI	.582
PEU	<-->	PR	.154
PEU	<-->	GS	.046
PEU	<-->	UI	.641
PEU	<-->	ATT	.667
PEU	<-->	INT	.555
TRU	<-->	BI	.429
TRU	<-->	PR	.409
TRU	<-->	GS	.155
TRU	<-->	UI	.580
TRU	<-->	ATT	.597
TRU	<-->	INT	.552
BI	<-->	PR	-.115
BI	<-->	GS	.291
BI	<-->	UI	.549
BI	<-->	ATT	.610
BI	<-->	INT	.620
PR	<-->	GS	-.289
PR	<-->	UI	.157
PR	<-->	ATT	.202
PR	<-->	INT	.195
GS	<-->	UI	.214
GS	<-->	ATT	.081
GS	<-->	INT	.054
UI	<-->	ATT	.758
UI	<-->	INT	.663
ATT	<-->	INT	.849

Source: Author's own work based on AMOS results

Table 21 shows that the correlations between all Extended Technology Acceptance Model variables are seen positive except between (Perceived Risk & Government Support -0.289), this result is aligned and typically similar with Millennials view, so both generations see Perceived Risk of Fintech adoption is negatively correlated with the Government Support; it means the higher Government Support the lower Perceived Risk among all generations. The researcher can conclude the following, In Palestine, Gen Z Intention toward the Fintech adoption is highly correlated with

their Attitude (0.849) which is the highest relation between variables, Gen Z Attitude also highly correlated with the Perceived Usefulness (0.769) of the Fintech services, the results also typically similar with Millennials view. The top three variables that are highly correlated with Gen Z Intention of Fintech adoption are (Perceived Usefulness, User Innovativeness & Attitude (0.728, 0.663, 0.849 respectively), which means that these variables highly predicted Gen Z Intention to adopt Fintech services.

Furthermore, Government Support doesn't play a significant role to encourage Gen Z to adopt Fintech services; it means that the Government Support from their point of view toward these kinds of services has a lower level. It means that the government has a limited engagement in this issue to support, encourage, and create the base for Fintech services in Palestine. Perceived Usefulness variable is the only variable among all variables that is highly correlated with all variables except with Government Support that has no role in Gen Z adoption Intention of Fintech services. Gen Z shows that Government Support didn't create the required Fintech ecosystem to push these services in the market.

Hypothesis 3

H3: There is a significant impact of E-TAM dimensions on Millennials/Gen Z Attitude toward Fintech services in Palestine

Table 22. Squared Multiple Correlations (Millennials) H3

Variable	Estimate
ATT	0.626

Source: Author's own work based on AMOS results

The researcher concludes from table 22; by using SEM; the squared multiple correlations show a significant relationship exists between E-TAM variables in this model, in other words, it Indicates that the combination of E-TAM variables (**INT, PR, BI, GS, UI, PEU, TRU, PU**) significantly predict the Millennials Attitude in Fintech Services Adoption, also as R^2= 0.626 which means that the independents' variables could explain 62.6% from the variation in the dependent variable "Millennials Attitude".

Table 23. Squared Multiple Correlations (Gen Z) H3

Variable	Estimate
ATT	0.814

Source: Author's own work based on AMOS results

The researcher concludes from table 23; by using SEM; the squared multiple correlations show a significant relationship exists between E-TAM variables in this model, in other words, it Indicates that the combination of E-TAM variables (**INT, PR, BI, GS, UI, PEU, TRU, PU**) significantly predict the Gen Z Attitude in Fintech Services Adoption, also R^2= 0.814 which means that the independents, variables could explain 81.4% from the variation in the dependent variable "Gen Z Attitude".

Table 24. Regression Weights (Millennials) H3

Path Direction			Estimate	S.E.	C.R.	P
ATT	<---	**PU**	**.194**	.046	4.230	***
ATT	<---	PEU	.099	.040	2.451	.064
ATT	<---	TRU	.005	.028	.189	.850
ATT	<---	BI	.032	.041	.775	.439
ATT	<---	PR	.033	.027	1.223	.221
ATT	<---	**UI**	**.182**	.036	5.080	***
ATT	<---	**INT**	**.413**	.039	10.658	***
ATT	<---	GS	-.035	.025	-1.388	.165

Source: Author's own work based on AMOS results

SEM (Path Coefficients) analysis was used to test if E-TAM variables significantly predicted the Millennials' Attitude in Fintech services adoption. The results indicated that the three predictors (Perceived Usefulness, User Innovativeness & Intention) explained 62.6% of the variance (R^2= 0.626). It was found that PU significantly predicted Millennials Attitude in adopting Fintech services (ß=.194, p< 0.001), as did UI & INT (ß=.182, p< 0.001), (ß=.413, p< 0.001) respectively.

The econometric model equation Based on table 24:

Millennials Attitude = 0.194 PU+ 0.182 UI + 0.413 INT

The interpretations of the significant independent variables:

- There is a direct impact between **Millennials Attitude (ATT)** and (PU, UI & INT), an increase in the following predictors' coefficients values (PU, UI & INT) by (1.94, 1.82 & 4.13) units respectively would increase **Millennials Attitude** by 10 units.
- But there is no impact for these predictor variables (PR, BI, GS, PEU, TRU) on **Millennials Attitude.**

Table 25. Regression Weights (Gen Z) H3

Path Direction			Estimate	S.E.	C.R.	P
ATT	<---	**PU**	**.170**	.037	4.641	***
ATT	<---	**PEU**	**.140**	.035	4.035	***
ATT	<---	TRU	.009	.028	.309	.757
ATT	<---	BI	.006	.034	.179	.858
ATT	<---	PR	.006	.022	.281	.779
ATT	<---	GS	-.011	.024	-.444	.657
ATT	<---	**UI**	**.228**	.028	8.179	***
ATT	<---	**INT**	**.486**	.028	17.267	***

Source: Author's own work based on AMOS results

SEM (Path Coefficients) analysis was used to test if E-TAM variables significantly predicted the Gen Z Attitude in Fintech services adoption. The results indicated that the four predictors (Perceived Usefulness, Perceived Ease of Use, User Innovativeness & Intention) explained 81.4% of the variance (R^2= 0.814). It was found that PU significantly predicted Gen Z Attitude in adopting Fintech services (ß=.170=, p< 0.001), as did PEU, UI & INT (ß=.140, p< 0.001), (ß=.228, p< 0.001), (ß=.486, p< 0.001) respectively.

The econometric model equation based on table 25:

Gen Z Attitude = 0.170 PU+ 0.140 PEU+ 0.228 UI + 0.486 INT

The interpretations of the significant independent variables:

- There is a direct impact between **Gen Z Attitude (ATT)** and (PU, PEU, UI & INT), an increase in the following predictors' coefficients values (PU, PEU, UI & INT) by (1.70, 1.40, 2.28 & 4.86) units respectively it might increase **Gen Z Attitude** by 10 units.
- But there is no impact for these predictor variables (PR, BI, GS & TRU) on **Gen Z Attitude.**

Hypothesis 4

H4: There is a significant impact of E-TAM dimensions on Perceived Usefulness of Fintech Adoption in Palestine from Millennials/Gen Z point of view

Table 26. Squared Multiple Correlations (Millennials) H4

Variable	Estimate
PU	0.550

Source: Author's own work based on AMOS results

The researcher concludes from table 26; by using SEM; the squared multiple correlations show a significant relationship exists between E-TAM variables in this model, in other words, it Indicates that the combination of E-TAM variables (**INT, PR, BI, GS, UI, PEU, TRU, ATT**) significantly predict the Perceived Usefulness of Millennials in adopting Fintech Services, also R^2= 0.550 which means that the independents variables can explain 55% from the variation in the dependent variable "Perceived Usefulness".

Table 27. Squared Multiple Correlations (Gen Z) H4

Variable	Estimate
PU	0.70

Source: Author's own work based on AMOS results

The researcher concludes from table 27; by using SEM; the squared multiple correlations show a significant relationship exists between E-TAM variables in this model, in other words, it indicates that the combination of E-TAM variables (INT, PR, BI, GS, UI, PEU, TRU, ATT) significantly predict the Perceived Usefulness of Gen Z in adopting Fintech Services, also R^2= 0.700 which means the independents variables can explain 70% from the variation in the dependent variable "Perceived Usefulness".

Table 28. Regression Weights (Millennials) H4

Path Direction			Estimate	S.E.	C.R.	P
PU	<---	**PEU**	**.197**	.041	4.766	***
PU	<---	**TRU**	**.142**	.028	5.041	***
PU	<---	BI	.063	.042	1.497	.134
PU	<---	PR	-.018	.028	-.641	.522
PU	<---	**GS**	**-.068**	.026	-2.667	.008
PU	<---	UI	.067	.037	1.838	.066
PU	<---	**ATT**	**.203**	.044	4.637	***
PU	<---	**INT**	**.161**	.040	4.048	***

Source: Author's own work based on AMOS results

SEM (Path Coefficients) analysis was used to test if E-TAM variables significantly predict the Millennials' Perceived Usefulness of Fintech services adoption. The results indicated that the five predictors (Perceived Ease of Use, Trust, Government Support, Attitude & Intention) explained 55% of the variance (R^2= 0.550). It was found that PEU significantly predicted Millennials Perceived Usefulness of Fintech services adoption (ß=.197, p<0.001), as did TRU, GS, ATT & INT (ß= .142, p<0.001), (ß= -.068, p=0.008), (ß = .203, p<0.001), (ß= .161, p<0.001) respectively.

The econometric model equation based on table 28:

Perceived Usefulness = 0.197 PEU + 0.142 TRU - 0.068 GS + 0.203 ATT + 0.161 INT

The interpretations of the significant independent variables:

- There is a direct impact between **Perceived Usefulness (PU)** and (PEU, TRU, GS, ATT & INT), an increase/decrease in the following predictors' coefficients values (PEU, TRU, GS, ATT & INT) by (**1.97, 1.42, -0.68, 2.03 & 1.61**) units respectively it would increase **Perceived Usefulness** by 10 units.
- But there is no impact for these predictor variables (INT, PR, BI, UI) on **Perceived Usefulness.**

Table 29. Regression Weights (Gen Z) H4

Path Direction			Estimate	S.E.	C.R.	P
PU	<---	**PEU**	**.255**	.036	7.137	***
PU	<---	TRU	.027	.028	.949	.343
PU	<---	**BI**	**.144**	.035	4.094	***
PU	<---	PR	.047	.023	2.068	.089
PU	<---	GS	-.017	.024	-.693	.488
PU	<---	UI	.064	.029	2.234	.225
PU	<---	**ATT**	**.180**	.031	5.894	***
PU	<---	**INT**	**.158**	.029	5.458	***

Source: Author's own work based on AMOS results

SEM (Path Coefficients) analysis was used to test if E-TAM variables significantly predict the Gen Z Perceived Usefulness of Fintech services adoption. The results indicated that the four predictors (Perceived Ease of Use, Brand Image, Attitude & Intention) explained 70% of the variance (R^2= 0.700). It was found that PEU significantly predicted Gen Z Perceived Usefulness of Fintech services adoption (ß=.255, p<0.000), as did BI, ATT & INT (ß= .144, p<0.000), (ß= .180, p<0.000), (ß = .158, p<0.000) respectively.

The econometric model equation based on table 29:

Perceived Usefulness = 0.255 PEU + 0.144 BI + 0.180 ATT + 0.158 INT

The interpretations of the significant independent variables:

- There is a direct impact between **Perceived Usefulness (PU)** and (PEU, BI, ATT & INT), an increase in the following predictors' coefficients values (PEU, BI, ATT & INT) by (2.55, 1.44, 1.80 & 1.58) units respectively it might increase **Perceived Usefulness** by 10 units.
- But there is no impact for these predictor variables (PR, GS, UI, TRU) on **Perceived Usefulness.**

Hypothesis 5

H5: There is a significant impact of E-TAM dimensions on Millennials/Gen Z Intention for Fintech services adoption in Palestine

Table 30. Squared Multiple Correlations (Millennials) H5

Variable	Estimate
INT	0.589

Source: Author's own work based on AMOS results

The researcher concludes from table 30; by using SEM; the squared multiple correlations show that a significant relationship exists between E-TAM variables in this model, in other words, it indicates that the combination of E-TAM variables (**ATT, PR, BI, GS, UI, PEU, TRU, PU**) significantly predict the Millennials Intention in adopting Fintech Services, also R^2= 0.589 which means the independents variables could explain 58.9% from the variation in the dependent variable "Intention".

Table 31. Squared Multiple Correlations (Gen Z) H5

Variable	Estimate
INT	0.762

Source: Author's own work based on AMOS results

The researcher concludes from table 31; by using SEM; the squared multiple correlations show that a significant relationship exists between E-TAM variables in this model, in other words, it indicates that the combination of E-TAM variables (ATT, PR, BI, GS, UI, PEU, TRU, PU) significantly predict the Gen Z Intention in adopting Fintech Services, also R^2= 0.762 which means the independents variables could explain 76.2% from the variation in the dependent variable "Intention".

Table 32. Regression Weights (Millennials) H5

Path Direction			Estimate	S.E.	C.R.	P
INT	<---	**PU**	**.206**	.053	3.870	***
INT	<---	PEU	-.024	.047	-.520	.603
INT	<---	TRU	.015	.032	.472	.637
INT	<---	BI	.066	.048	1.379	.168
INT	<---	PR	.035	.031	1.111	.266
INT	<---	**GS**	**.102**	.029	3.516	***
INT	<---	UI	.080	.042	1.926	.054
INT	<---	**ATT**	**.554**	.050	11.169	***

Source: Author's own work based on AMOS results

SEM (Path Coefficients) analysis was used to test if E-TAM variables significantly predicted the Millennials Intention in Fintech services adoption. The results indicated that the three predictors (Perceived Usefulness, Government Support & Attitude) explained 58.9% of the variance (R^2= 0.589). It was found that PU significantly predicted Millennials Intention in Fintech services adoption (ß= .206, p<0.001), as did GS & ATT (ß= .102, p<0.001), (ß= .554, p<0.001) respectively.

The econometric model equation based on table 32:

Intention = 0.206 PU + 0.102 GS + 0.554 ATT

The interpretations of the significant independent variables:

- There is a direct impact between Millennials **Intention** in Fintech services adoption **(INT)** and (PU, GS & ATT), an increase in the following predictors' coefficients values (PU, GS & ATT) by (**2.06, 1.02, 5.54)** units respectively it might increase **Intention** by 10 units.
- But there is no impact for these predictor variables (PR, BI, UI, PEU, TRU) on Millennials' **Intention** in Fintech services adoption**.**

Table 33. Regression Weights (Gen Z) H5

Path Direction			Estimate	S.E.	C.R.	P
INT	<---	**PU**	**.213**	.044	4.869	***
INT	<---	**PEU**	**-.234**	.041	-5.650	***
INT	<---	TRU	.087	.033	2.640	.078
INT	<---	**BI**	**.239**	.041	5.866	***
INT	<---	PR	.012	.026	.462	.644
INT	<---	GS	-.062	.028	-2.180	.069
INT	<---	UI	.029	.033	.870	.384
INT	<---	**ATT**	**.693**	.035	19.558	***

Source: Author's own work based on AMOS results

SEM (Path Coefficients) analysis was used to test if E-TAM variables significantly predicted the Gen Z Intention in Fintech services adoption. The results indicated that the four predictors (Perceived Usefulness, Perceived Ease of Use, Brand Image & Attitude) explained 76.2% of the variance (R^2= 0.762). It was found that PU significantly predicted Gen Z Intention in Fintech services adoption (ß= .213, p<0.001), as did PEU, BI & ATT (ß= -.234, p<0.001), (ß= .239, p<0.001), (ß= .693, p<0.001) respectively.

The econometric model equation based on table 33:

Intention = 0.213 PU - 0.234 PEU + 0.239 BI + 0.693ATT

The interpretations of the significant independent variables:

- There is a direct impact between Gen Z **Intention** in Fintech services adoption **(INT)** and (PU, PEU, BI & ATT), an increase/decrease in the following predictors' coefficients values (PU, PEU, BI & ATT) by (**2.13, -2.34, 2.39, 6.93)** units respectively it would increase **Intention** by 10 units.
- But there is no impact for these predictor variables (PR, GS, UI, TRU) on Gen Z **Intention** in Fintech services adoption**.**

The researcher summarized the study hypotheses, table 34 shows all the tested hypotheses and the result per each hypothesis if it is accepted or rejected.

Table 34. Summary of Study Hypotheses

No.	Hypotheses	Result: Accepted / Rejected	
		Millennials	Gen Z
1	Government Support plays a significant role in supporting the Fintech in Palestine	Rejected	Rejected
2	There is a significant relationship in exogenous and endogenous variables in the Fintech Adoption Intention for Millennials and Gen Z in Palestine	Accepted	Accepted
3	There is a significant impact of TAM dimensions on Millennials/Gen Z Attitude toward Fintech services in Palestine	Accepted	Accepted
4	There is a significant impact of TAM dimensions on Perceived Usefulness of Fintech Adoption in Palestine from Millennials/Gen Z point of view	Accepted	Accepted
5	There is a significant impact of TAM dimensions on Millennials/Gen Z Intention for Fintech services adoption in Palestine	Accepted	Accepted

Source: Author's own work

4.6. Findings Discussion

4.6.1. Questions Discussion

In this section, the researcher discussed each question in the thesis with the previous studies mentioned in the literature review.

Q1: "What is the readiness level of the Palestinian Banks for the Fintech requirements in the financial digital transformation?"

The researcher founds that the Palestinian banks' readiness for Fintech requirements in terms of the technological base is around 35%, which is classified as a low level of readiness. The Palestinian banks met the requirements of these two categories with above than 60% for all of them (Remittances & Payment, and Security & Risk Management). As a researcher I found that this is a weak point in this industry as banks dominating the financial industry in Palestine; other categories (digital banking, big data and AI, and blockchain technology) are important in the financial industry; regardless others may consider that they achieve a very good ranking in Payments and Remittances as this category formulated about 75% of Fintech adoption worldwide (EY,2019). This percentage changed in a rapid way since 2015 compared with 2019, the adoption was 18% (2015), 50% (2017), and 75% (2019); these percentages reflect how trends changed in this industry in the World Wide context; It means that financial institution needs to adopt other categories related to this industry to meet the requirements and the main functions of the digital transformation in the financial industry as consumers are the main key drivers for this transformation, as well-knowns consumer behavior changed periodically so banks and other financial institutions need plans to face this transformation in order to meet their consumers' needs and expectations and to be aligned with the market requirements and trends. It is considered as an opportunity and threat at the same time.

The researcher would like to point out one of his recent results about the role of Top Management in enhancing the quality of service and meeting the new customers' expectation; this result contributed to how the banks must be ready to listen to the market needs and have a keen hearing and also having the best intelligence tools to stay in the competition in the market and meet the customers' needs, top management commitment in the total quality management system (TQM)

is the most influencing factor that affects the organizational competency and capacity for innovation (ABU DAQAR & CONSTANTINOVITS, 2020).

Q2: What is the Attractiveness level of the Palestinian Market for Fintech Services?

Fortunately, the researcher reached the top management who was involved in the banks strategic planning process to obtain the real image about the Palestinian market attractiveness for Fintech services from the banks' point of view; there is a consensus among all interviewees that the Palestinian market is attractive for Fintech services. The main driver for this attractiveness is the high percentage of the unbanked people in Palestine which is around 70% as mentioned earlier in the Literature Review section; it supports the banks' arguments to target this group with digital financial services based on the available technology in the country related to financial services, it helps the financial institution to increase their market share in the market and on the other side they will improve their financial services into competitive Fintech services that meet the consumer's needs (PMA, 2020). The researcher found that there is a high attractiveness level in the market for the Fintech services adoption by these financial institutions due to the high percentage of unbanked people. The researcher stresses that there is a pure opportunity banks need to exploit, as fast as they exploit this opportunity it will stay an opportunity; unless it will be a critical threat that other Fintech companies will exploit to target the unbanked people with their innovative and easy to use services.

Q3: What is the usage level of Fintech Services among Millennials and Gen Z in Palestine?

The Results reflect a low usage of Fintech services among these generations based on their scores; Millennials is 19% while Gen Z is 11.4%, this result hide two indicators for the financial industry in Palestine, the first one is the unavailability of Fintech services provided to the customers in the market, as the researcher mentioned earlier there was a low level of awareness among consumers in this regard, the other indicator the new Fintech comers (Fintech companies) have a clear image and solid base to establish their services because the rivalry in this context still have no place because there are no experts or established businesses who provide such services in this domain. ENVISIONIT (2018) stresses in their recent study that around 73% of respondents are more receptive to use Fintech services from well-known companies which is a real threat to banks that need to overcome and to find the best solutions to decrease the competition in this situation (ENVISIONIT, 2018).

Q4: What is the intention level of Fintech Services usage among Millennials and Gen Z in Palestine?

As the researcher mentioned earlier; awareness is different than intention toward Fintech services from his point of view, as it needs proof; the target group awareness in this study scored a low level while the intention level to adopt Fintech services scored a high level of intention; both generations showed high interest in Fintech services according to these scores; (Millennials, Gen Z), (M=4.0732., SD=0.5596), (M=4.1297., SD=0.8252) respectively. This result supports the fact that 73% of the target group have the intention to use Fintech services while 68% of them see that the way that we access money will be changed soon in the next five years (ENVISIONIT, 2018). The findings are aligned with the researcher's work through investigating the intention of Millennials and Gen Z for Fintech adoption, high Intention level recoded for both of them, while Millennials have the highest intention (ABU DAQAR et al., 2020). These results support that there is an opportunity for Fintech companies to exploit these trends and tendencies toward adopting Fintech services by Millennials and Gen Z, moreover, banks need to pay efforts to either compete with Fintech companies or to cooperate with them to develop and enhance their digital services to meet the consumers' needs.

Q5: What is the Government Support level for Fintech Services in Palestine from the Millennials and Gen Z point of view?

This study revealed that the Government Support level of Fintech services in Palestine is medium from the two generations' point of view. (Millennials, Gen Z), (M=3.2163., SD=0.8678), (M=3.1651, SD=0.9797) respectively. According to the researcher's background about the Fintech ecosystem in Palestine, the results were aligned with the actual situation about the Fintech support by the Government. Actually, Fintech services heavily rely on the Government Support to provide the accurate infrastructure in terms of the technical part as blockchain infrastructure to facilitate the mission for the service providers to push their innovative services through the digital channels. Furthermore, the Political situation plays a significant role in providing such services in this regard; the researcher analyzed the situation; it needs a government intervention to establish a solid base for international companies to direct their investment in this domain, banks and Fintech companies will be the direct beneficiaries who involved in this intervention to gain benefits and to secure their business to meet the cutting-edge technology in their financial services. Government support is the key pillar in Fintech adoption and one of the main reasons that affect the consumers' intention to

adopt Fintech services (YEE-LOONG et al. 2010, KIWANUKA 2015, MARAKARKANDY et al. 2017).

4.6.2. Research Hypotheses Discussion

In this section, the researcher will discuss the thesis hypotheses with the previous studies' hypotheses mentioned in the literature review.

Ha-1: Government Support plays a significant role in supporting the Fintech in Palestine (From the Millennials and Gen Z point of view)?

The results show that Government support doesn't play a significant role in supporting Fintech in Palestine from the Millennials and Gen Z point of view, both generations agreed that Government has no role in motivating or creating the suitable infrastructure that supports Fintech to provide these kinds of services to the market. The researcher result matches other researchers results; SÁNCHEZ -TORRES et al. (2018) found that Government Support has no significant impact on supporting the adoption of online financial services, these results compared with the degree level that government intervenes to support Fintech, in this study, the results show a low level of government intervention. Other studies show that higher government intervention will lead to higher Fintech support and adoption (YEE-LOONG et al. 2010, KIWANUKA 2015, MARAKARKANDY et al. 2017).

Ha-2: There is a significant relationship in exogenous and endogenous variables in the Fintech Adoption Intention for Millennials and Gen Z in Palestine

All study variables are positively correlated except between (Perceived Risk & Government Support), which means that Millennials & Gen Z see that the higher Government Support the lower Perceived Risk. The researcher results revealed that Millennials Intention toward Fintech adoption is highly correlated with Attitude, and also Millennials & Gen Z Attitude are highly correlated with Perceived Usefulness of Fintech services which is the same as Gen Z. The researcher found these three variables (Perceived Usefulness, User Innovativeness & Attitude) were the most highly correlated with Millennials & Gen Z Fintech Adoption Intention, it shows that these variables highly predicted their Fintech Adoption Intention. The most interesting results in this study are

Perceived Risk has no place or effect on Millennials Fintech Adoption Intention; it means that Perceived Risk has no role on their adoption intention which is a strong point and opportunity for banks and Fintech companies to exploit it to provide services in this domain without paying critical attention toward the perceived risk toward these services. Perceived Usefulness is highly correlated with all study variables except with Perceived Risk, it reflects truth and proof for banks and Fintech companies to tress delivering the benefits to consumers and instill these benefits in their minds.

Furthermore, Millennials & Gen Z see that Government Support didn't play any important role to facilitate the mission for Fintech companies to provide their services in the Palestinian market, the researcher concludes that Government Support didn't create the required Fintech ecosystem to push these services in the market, this result matches SÁNCHEZ-TORRES et al. (2018) results that Government support has no impact on Fintech adoption. The study results coincide with significant studies in this context, where perceived risk does not affect consumers attitude toward Fintech adoption (HU et al. 2019, JIN et al. 2019, MUÑOZ-LEIVA et al. 2017). Moreover, CHUANG et al. (2016) found that perceived usefulness is a key variable that positively affect the consumers attitude in Fintech adoption.

Ha-3: There is a significant impact of E-TAM dimensions on Millennials/Gen Z Attitude toward Fintech services in Palestine

This study shows there is a significant impact of E-TAM dimensions on both Millennials and Gen Z Attitude toward Fintech Adoption, (Millennials R^2= 0.626; Gen Z R^2= 0.814) which means the independents' variables could explain 62.6%, 81.4% from the variation in the dependent variable "Millennials and Gen Z Attitude" respectively. Gen Z predictors highly predict the generations attitude rather than Millennials, it is a highly noted result complied with the most recent results by Forbes that Gen Z is the highest adopter for Fintech services and surpasses Millennials (FUSCALDO, 2020).

The researcher econometric model equation shows the following:

Millennials Attitude = 0.194 PU+ 0.182 UI + 0.413 INT

Gen Z Attitude = 0.170 PU+ 0.140 PEU+ 0.228 UI + 0.486 INT

There is a direct impact between **Millennials Attitude (ATT)** and (PU, UI & INT), an increase in the following predictors' coefficients values (PU, UI & INT) by (1.94, 1.82 & 4.13) units respectively it might increase **Millennials Attitude** by 10 units, while there is a direct impact between **Gen Z Attitude (ATT)** and (PU, PEU, UI & INT), an increase in the following predictors' coefficients values (PU, PEU, UI & INT) by (1.70, 1.40, 2.28 & 4.86) units respectively it would increase **Gen Z Attitude** by 10 units. The results show that Perceived Ease of Use plays a significant role in Gen Z attitude, which means that these generations need an easy and simple way to access these services compared with Millennials, this fact needs full consideration from banks and Fintech companies to promote their products on this basis. All the mentioned variables in this hypothesis that predict Millennials and Gen Z attitude in Fintech Adoption aligned with these researchers' results (CHUANG et al. 2016, JIN et al. 2019, HU et al. 2019, MARAKARKANDY et al. 2017).

Ha-4: There is a significant impact of E-TAM dimensions on Perceived Usefulness of Fintech Adoption in Palestine from Millennials/Gen Z point of view

The researcher found that there is a significant impact of TAM variables on Perceived Usefulness of Fintech Adoption from both Millennials and Gen Z point of view, (Millennials R^2= **0.550**; Gen Z R^2= **0.700**) which means the independents' variables could explain **55%,70%** from the variation in the dependent variable "Perceived Usefulness" respectively.

The researcher econometric model equation shows the following:

Perceived Usefulness (Millennials) = 0 .197 PEU + 0.142 TRU - 0.068 GS + 0.203 ATT + 0.161 INT

Perceived Usefulness (Gen Z) = 0.255 PEU + 0.144 BI + 0.180 ATT + 0.158 INT

There is a direct impact between **Perceived Usefulness (PU)** and (PEU, TRU, GS, ATT & INT) from Millennials point of view, an increase/decrease in the following predictors' coefficients values (PEU, TRU, GS, ATT & INT) by (**1.97, 1.42, -0.68, 2.03 & 1.61**) units respectively it might increase **Perceived Usefulness** by 10 units, while there is a direct impact between **Perceived Usefulness (PU)** and (PEU, BI, ATT & INT) from Gen Z point of view, an increasing in the following predictors' coefficients values (PEU, BI, ATT & INT) by (**2.55, 1.44, 1.80 & 1.58**) units

respectively it would increase **Perceived Usefulness** by 10 units. The common variable between these two generations that predict Perceived Usefulness is Perceived Ease of Use, it is a key result that shows that PEU is the main pillar that helps banks and Fintech companies to make their services simple, user friendly, and easy to use to attract consumers to adopt their Fintech services. These results match the findings of these research's that PEU highly predicts and affect Fintech adoption (RIQUELME & RIOS, 2010; SUM CHAU & NGAI, 2010; ABBAD, 2013).

Ha-5: There is a significant impact of E-TAM dimensions on Millennials/Gen Z Intention for Fintech services adoption in Palestine

The study shows that TAM variables significantly have an impact on consumers Intention in adopting Fintech Services from Millennials and Gen Z point of view, (Millennials **R^2= 0.589**; Gen Z **R^2= 0.762**) which means the independents variables could explain **58.9%, 76.2%** from the variation in the dependent variable "Intention" respectively.

The researcher econometric model equation shows the following:

Intention (Millennials) = 0.206 PU + 0.102 GS + 0.554 ATT

Intention (Gen Z) = 0.213 PU - 0.234 PEU + 0.239 BI + 0.693ATT

There is a direct impact between Millennials **Intention** in Fintech services adoption **(INT)** and (PU, GS & ATT), an increase in the following predictors' coefficients values (PU, GS & ATT) by (**2.06, 1.02, 5.54)** units respectively it might increase **Intention** by 10 units, while there is a direct impact between Gen Z **Intention** in Fintech services adoption **(INT)** and (PU, PEU, BI & ATT), an increase/decrease in the following predictors' coefficients values (PU, PEU, BI & ATT) by (**2.13, -2.34, 2.39, 6.93)** units respectively it would increase **Intention** by 10 units. The researcher found that (Perceived Usefulness and Attitude) are the common variables among both generations that have the highest prediction impact on consumers intention toward Fintech adoption these results matched and aligned with these researchers results (LIFEN ZHAO et al. 2010, SHAIKH & KARJALUOTO 2015, p.129, ABOELMAGED & GEBBA 2013) which stressed that Attitude is highly associated and predict consumers intention toward Fintech adoption, moreover, consumers

Perceived Usefulness is also highly associated with consumers Intention toward Fintech adoption (CHANG et al. 2016, CARLIN et al. 2017).

4.6.3. Novel Results

The researcher contributed and added new scientific results for the Fintech context in both the local (the Palestinian context) and the global context, these results revealed though exploring the main measures that affect the Fintech adoption by the banking industry. Moreover, exploring the market attractiveness for Fintech services especially through studying the two specific segments groups which are Millennials and Gen Z, the following results show the researcher's contribution in each specific context.

a) Global Fintech Context Contribution

This study explored and measured the Fintech ecosystem in the banking context among the two main Fintech adopters which are Millennials and Gen Z, it combines for the first time in a study a comparison between these two generations in the Palestinian context and how it is different than the global context.

b) Banks Readiness Model for Fintech Adoption

This study has measured for the first time the banks' readiness to Fintech core technologies as the main threshold for Fintech adoption services (in the Palestinian Context). This Readiness Model is a unique indicator and a tool for the banks to measure and analyze their compliance with the Fintech core technologies in the world. The study measured the Palestinian Banks' readiness which is around 35% to the Fintech core technologies. This tool could be adopted in the global context.

c) Market Attractiveness of Fintech

The researcher revealed an indicator about the market attractiveness for Fintech services; the explored drivers that are linked with higher market attractiveness are the percentage of the unbanked segments in the country (higher unbanked ratio leads to higher Fintech adoption intention), and the penetration of the digital gadgets especially the smartphone ownership in the country, these two drivers are the main triggers that will give a clear indicator for any market attractiveness for Fintech adoption. The researcher concluded that lower financial inclusion leads

to higher Fintech adoption especially in these two segments (Millennials and Gen Z); these segments are the highest among other segments in the market for Fintech adoption.

d) Fintech Ecosystem

Through the conceptual model the researcher aimed to explore the role of the Palestinian Government in Fintech Adoption from the Millennials and Gen Z point of view, both of them show that the Government has no significant impact to support Fintech infrastructure, this finding reflects a new imperial result that will be added to Fintech context. Millennials and Gen Z trust in Government plays an important role in Fintech adoption, the government has a technological responsibility to provide a solid base for Banks and Fintech companies to promote and invent new Fintech services in the market such as blockchain structure that facilitates a huge sector of Banks financial services such as money transfer and digital identity.

The study manifests that the Fintech adoption intention among these generations is extremely affected by their Attitude, which shows a significant scientific contribution that attitude is the main indicator that reflects the generations adoption intention of Fintech. The second issue proves that Millennials and Gen Z attitudes toward Fintech adoption highly associated with Perceived Usefulness; these novel results linked for the first time a real comparison between these generations and disclose that the two generations have the same interest in this regard.

The researcher contributed to finding the most significant elements that affect Millennials and Gen Z attitude based on the E-TAM model; Millennials attitude highly predicted by Perceived Usefulness, User Innovativeness, and their Intention. While for Gen Z; Perceived Usefulness, Perceived Ease of Use, User Innovativeness, and Intention. The researcher found that both generations in Palestine have three common dimensions that affect their attitude toward Fintech adoption, whereas Gen Z required the ease of use to highly adopt Fintech services. Furthermore, the User Innovativeness dimension has been highlighted as a common indicator and driver which is directly associated with Attitude.

The researcher used a detailed approach which shows a novel investigation method that reveals the interrelated and inner connections among the E-TAM model for the first time in a study that combines the most Fintech adopters' segments in the society. Millennials perceived usefulness

highly associated with Perceived Ease of Use, Trust, Government Support, Attitude, and Intention. While for Gen Z; Perceived Ease of Use, Brand Image, Attitude, and Intention.

These results are clarified the main difference between Millennials and Gen Z perceived usefulness; Millennials affected by the Government Support intervention while Gen Z affected by the Band Image; this point shows why Gen Z is the highest Fintech adopters in the International context. These results are highly contributing and adding new novel results associated with the E-TAM model.

The researcher was able to provide a clear strategy for Fintech adoption especially for the main segments in this context which are Millennials and Gen Z; clear indicators and drivers have been connected and associated in the Fintech context to reveal the roadmap for the Fintech adoption requirements either through the generations adoption intention and the technological requirements in the market that are required to digitize the financial services to meet the customers' needs and expectations that are aligned with the global Fintech context.

e) The Highest adopting segments

The results show for the first time in a study that Millennials are the highest adopters for Fintech services than Gen Z (in the Palestinian context), the researcher studied both generations Financial behavior and Fintech perception; both of generations have a low awareness level of Fintech; these findings revealed the deficiency from the banks level to move toward the digital transformation infrastructure in their financial services. This fact is one of the significant indicators that will cause both generations to quit the traditional financial services into new digital and real-time financial services.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

In conclusion, the researcher will present the study main findings as conclusion. These results considered the key inputs for the financial industry, especially the banking and Fintech companies. The results reflect their readiness and awareness of Fintech Millennials and Gen Z in Palestine intention to adopt the Fintech services. The results also compare the situations and the adoption intentions among these generations. Finally, it measures the Palestinian banks' readiness to engage in financial digital transformation.

The aim of this thesis has been to look for new exploratory contributions that may clarify the true role of Millennials and Gen Z in driving the Fintech transformation in Palestine. Their intention to adopt Fintech services is an indicator for banks and Fintech companies to develop and enhance the financial services in the market. The thesis also studies the banks' readiness for this financial transformation by incorporating Fintech requirements. Furthermore, this section will explain the strategic plans for the financial institutions in Palestine; plans about the Fintech ecosystem that can help them to drive this transformation. It will be formulated in a way that lead these institutions to identify conceptions and practices needed to establish the required strategies and work plans; and how to promote the Fintech services that meet the consumers' needs and expectations.

In this section the researcher measured the Palestinian banks readiness for Fintech requirements. The pioneer banks scored 35% of their readiness for the international requirements to Fintech transformation and adoption. This result indicates a low level of readiness according to the measurement tool adopted in this study. Noteworthy is that banks scored their best performance in the Payment and Remittances category, which is considered the dominating category for Fintech worldwide functions. The majority of Fintech companies are focused on payment and remittances solutions for consumers. Hence, banks in Palestine had near a 60% readiness score in this domain. The researcher found that the Palestinian market is considered an attractive market for Fintech services industry. If they can attract financial institutions to invest in this domain, it will yield profitable results, based on the feasibility studies for earnings.

The study reveals that government support has no significant impact on Millennials and Gen Z intentions to adopt Fintech within Palestine. This is a critical finding since it is aligned with the questions and hypotheses in this study. Once the government's support is high, banks and other Fintech companies will have a safe and well-equipped infrastructure; a major requirement to move toward digitization in financial services. Then promotion of these services to the targeted group in the market, Millennials and Gen Z, moreover, it is aligned with lower Fintech usage.

The researcher has clarified the correlation between the study variables used in E-TAM model; the results show that there is a positive correlation between all variables except between perceived risk & government support. Millennials intention toward Fintech adoption is highly correlated with their attitude. Millennials & Gen Z attitudes are highly correlated with the perceived usefulness of Fintech services.

Perceived Usefulness, User Innovativeness & Attitude are the most highly correlated variables for Millennials & Gen Z inclinations to adopt. It means that these three variables highly predict the Fintech Adoption Intention, while Perceived Risk and Government Support have no role related to Millennials and Gen Z intentions to adopt Fintech. Perceived Usefulness is highly correlated with all study variables except for Perceived Risk. The study explains that there is a significant impact of E-TAM variables on both Millennials and Gen Z Attitude toward Fintech Adoption. These Gen Z predictors are highly predictive of that generations attitude, and more so than Millennials. In additions it shows a direct correlation between Millennials Attitude (ATT) and (PU, UI & INT). There is also a direct relationship between Gen Z Attitude (ATT) and (PU, PEU, UI & INT). Moreover, all mentioned variables (between brackets) are strong predictors for the Millennials and Gen Z attitude toward Fintech adoption.

E-TAM variables significantly have an impact on Government Support role in Fintech Adoption from the Millennials and Gen Z perspective. The results indicate a positive and strong linear relationship between Government Support and the predictors for Millennials; while for Gen Z it shows positive but a moderately linear trend. Also, there is a direct impact between Government Support Role (GS) and (PU, TRU, PR & INT)- Millennials view.

For Gen Z there is a direct impact between Government Support Role (GS) and (PEU, TRU, BI PR & UI). These results explain the significant differences between the two generations- the Millennial result indicate Perceived Usefulness, Trust, Perceived Risk and Intention as the best

predictors of Government support. In contrast, Gen Z results indicate Perceived Ease of Use, Trust, Brand Image, Perceived Risk, and User Innovativeness as strong predictors.

E-TAM variables have a significant influence on Perceived Risk for Fintech Adoption. This result also indicates differences between the two generations response to Perceived Risk for Fintech Adoption, with Gen Z having the highest perception.

The study explains that E-TAM variables have a significant impact on Perceived Usefulness of Fintech Adoption, according to both Millennials and Gen Z. In addition, Millennials see that these variables PEU, TRU, GS, ATT & INT predict Perceived Usefulness (PU), while for Gen Z PEU, TRU, GS, ATT & INT are the best predictors. Hence, PEU is generally a key pillar in consumers Fintech adoption.

It was clarified also that E-TAM variables have a significant impact on consumer intentions when adopting Fintech Services. Millennials believe also that these variables (PU, GS & ATT) highly predict positive intention in Fintech services adoption, while for Gen Z, these variables (PU, PEU, BI & ATT) have the highest impact. Also, this research work found that Perceived Usefulness and Attitude have the highest prediction impact on consumers intention toward Fintech adoption.

5.2. Recommendations

This is the first study in Palestine which investigates the Fintech ecosystem in the financial industry involving banks and Fintech companies. The research findings include indicators and valuable recommendations for the financial institutions in Palestine. These recommendations allow business owners in this domain to design their strategies and plans to meet the market trends, for both a local and international context. The researcher provides banks with the most cutting-edge readiness criteria required for banks to adopt Fintech transformations for delivery of their financial services. Moreover, it provides a threshold structure to compare themselves to this structure, and hence the ability to measure their readiness for this evolution.

Given the high unbanked ratio in Palestine; the researcher recommends banks in the first order to exploit this massive segment by attracting the unbanked segment to open virtual accounts. This approach is viable since the majority have smartphones. This tool is the key driver for banks to offer the Fintech services to potential consumers. The Fintech strategy is based on two pillars. The

first is the unbanked people and the smartphone penetration ratio. Since the ratios are high, the Fintech adoption intention will be high among this segment. Hence it is recommended that banks promote the e-wallet concept to Millennials and Gen Z; especially since these generations are the early adopters for Fintech services worldwide. The study shows that Millennials have the highest intention to adopt Fintech services; and their use of Fintech services is higher than Gen Z.

The researcher also recommends banks and Fintech companies use e-wallet to facilitate the financial services for both generations. For example, Millennials indicate highly a preference for using e-wallet for payroll functions, along with payments transactions. They prefer the ease of 24-hour availability and access to real-time services. Moreover, the researcher recommends that banks should enhance their real-time systems to meet the consumers' needs. He found that this critical function, adopted by banks, can to meet the threshold requirements for real-time Fintech services.

It is recommended that banks spread the awareness to both their consumers and prospective customers about e-banking services. According to the study results, the e-services awareness (Fintech services) scored a low level of awareness. Therefore, it is the banks' best interest to design special awareness strategies and programs that target current consumers. Strategies that encourage them to use these services through a variety of channels. Branches should take the initiatives to train customers to use e-services. By expressing the high benefits mobile Fintech services that they will gain through their usage, awareness campaign; banks employees will target customers at their work places to explain the new e-services at their smartphones. On the other side banks recommended to dedicate awareness campaigns in universities, schools, higher education institutes, and colleges as it is the main target strategies to attract Gen Z, as the majority don't have bank account, e-wallet concept will be pushed on spot to show them the ease of use for this kind of services, and huge benefits that they will gain during the usage of e-wallet and how it facilitates their financial transactions; this segment is the most valuable segment as Gen Z became the highest Fintech adopters segment worldwide, they will attract their friends and families to use these services; they are the free marketing tool for the banks.

Banks highly recommended to use Fintech services and to digitize their services to be aligned with the international financial trends; it considered as a main reason to reduce their costs, the same to Fintech new companies in Palestine, they are highly advised to establish their businesses through targeting Millennials and Gen Z; as they are motivating and having the intention to use Fintech

services; so Fintech companies have a significant potential opportunity to exploit the unbanked Millennials and Gen Z, and on the other hand they have another prospective segment which are the underbanked consumers, they can attract them to the most developed Fintech services that shortening their orders requests in their financial services.

Banks and Fintech companies must be alerted to these requirements based on Millennials and Gen Z positive feedback on Fintech adoption; the majority of Millennials and Gen Z. They desire financial services must be characterized by time saving and available 24 hour. These requirements are the key issues in the financial industry and must be taken into consideration when developing, or updating their services.

Banks have a great opportunity rather than Fintech companies as it considered a real threat for Fintech companies. Millennials and Gen Z have a credible view of banks. They indicate an 86% trust in level for banks, their systems, and applications; so, banks have strength to gain more trust from their consumers by attracting them to new beneficial services. This trend can help reduce the bank's costs and gain more profits in an indirect way. This argument is supported by the data: Millennials and Gen Z both believed that the Perceived Ease of Use and the Perceived Risk are most important variables for trust among financial institutions. With banks already reducing the perceived risk from the consumers' side, they can now concentrate on humanizing their financial services and enhance their usage perception.

Banks need to be aware of Millennials and Gen Z's current perceptions about the role (s) Fintech plays in the market. Around 20% of Millennials find that Fintech are the main competitors for banks, while 32% of Gen Z see them as competitors. This finding highlights a critical issue: Gen Z is the main segment intending to adopt Fintech services. While banks take advantage of this intention, Fintech should simultaneously act on this good opportunity to target them.

Banks and Fintech companies must realize that the physical presence of banks in the education institute have the greatest impact on attracting students to obtain an account. Around 43% of students have an account in the bank located in their education institute. This indicator is a pure opportunity to offer their Fintech services to these students. It also shows an opportunity for Fintech companies to establish cooperative services with banks by providing solutions to enhance e-services.

Fintech has another strong option; it can open new virtual accounts for the students to facilitate all their financial transactions. It can provide students with payment solutions, and money top up services that sends students an instant remittance. This helps him/ her to manage financial issues in either the education institute or in the market. This method is one of the country strategies to solve the liquidity issue in the market, according to many pioneer countries' practices in Sweden, for instance. Fintech companies could also provide point of sales and other shop markets with QR systems to facilitate the concept of using e-wallet in the market.

Another key indicator for Fintech adoption among Millennials and Gen Z is their support for Better Service, Ease of Use, and Speed of Service. Meeting these needs that can motivate them to quit accounts with their current banks and join a Fintech provider. It is a threat for banks and an opportunity for Fintech companies. Both parties could make a better service to obtain this segment based on their expressed needs and expectations. Banks and Fintech companies recommended to concentrate their attention toward Millennials and Gen Z preferred financial services available to their mobiles. For instance, around 60% want payment services, 25% want wealth management solutions, and 14% of Gen Z want robot advisor services. These results are the key drivers for banks and Fintech companies to tailor their e-banking and Fintech services when aligned with these categories; A surprising and noteworthy result is that wealth management has a great impact among these generations.

Financial institutions can pay less attention to perceived risk associated with Millennials and Gen Z Fintech adoption intention. Perceived risk has no impact or influence. It is aligned with other research results indicating perceived risk has no influence on intentions to adopt. Hence, these financial institutions have the opportunity to overcome this obstacle in adopting new technologies in the financial industry.

Finally, it is strongly recommended that banks and Fintech companies have a strategic view when studying and analyzing consumers and customers' Fintech adoption intentions. They have to stress concentration and focus on these categories' Perceived Usefulness and Attitude. They are highly associated with consumers/customers adoption intention. Moreover, they have to be aware enough to fully investigate the characteristics that affect and have an impact on their perceived usefulness and attitude toward Fintech services. Banks need to apply Artificial Intelligence (AI) solutions and systems to predict the consumers' characteristics. The researcher recommends that banks create

AI based decisions as a winning approach to utilize the Fintech industry. They can tailor their plans and strategies on perceived usefulness and attitude, because the results indicate these characteristics have the highest influence and impact on consumers/customers likelihood of Fintech adoption.

5.3. Research Limitations and Future Research Directions

The researchers aim in this study is to reveal the readiness of banks for Fintech adoption. The researcher was obliged to focus the study on banks sole based in Palestine. This choice is made because other banks operating in Palestine have a centralized management based outside the Palestinian Territories. For these banks, it was not possible to access the key managers for approval to interview the targeted people and departments. Furthermore, the local Fintech infrastructure is still in its first stage in Palestine. Hence, there is significant potential to enhance the banks capabilities and competences to take advantage of the Fintech digital transformation.

The researcher is looking to apply and measure the readiness model by other researchers in this context to reveal and discover the efficiency of this model on this particular context of the banks. Moreover, future research work is proposed; ideally with a thorough comparison between these two banks segments. A comprehensive view of local and international banks, operating in the same country, can reveal how these bank segments may successfully adopt, implement, and utilize Fintech services. Furthermore, the researcher was limited to include one country for this study which is Palestine; the sample size was exclusive for the Palestinian respondents.

6. THESIS SUMMARY

The objective of this thesis is to explore the Palestinian banks readiness to adopt Fintech. The thesis measures extensively the Fintech ecosystem in Palestine. These measures identify the adoption potentials by the main Fintech adopter groups- Millennials and Gen Z in Palestine. The researcher used the extended Technology Acceptance Model (E-TAM) to explore the Fintech Adoption Intention among both Millennials and Gen Z in Palestine. The researcher created a benchmark criterion to measure the Palestinian banks technological readiness for Fintech requirements. The main study instruments were utilized: an exploratory questionnaire and structured base interviews. Two distinct questionnaires were implemented, one for Millennials and the other for Gen Z. The researcher utilized the technical interview as part of the structured interviews of the interviewees.

This thesis indicates novelty evidences. The results indicate that Palestinian bank readiness is at a 35% level for Fintech requirements. Also, banks score close to 60% within the compliance to payment, the most important Fintech category, globally. The data indicates banks have a high awareness level to Fintech (80-90%).

These results demonstrate that the Palestinian market can be considered very attractive for Fintech services. Millennials and Gen Z have a lower awareness level of Fintech, compared with the global awareness level for these two generations outside of Palestine. Hence, they are a high potential market within Palestine, with Millennials being more receptive to Fintech adoption than Gen Z. However, both groups have high adoption intention. Banks e-services considered not attractive to users compared with traditional services.

Results indicate that Government support and Perceived risk have no role on Fintech adoption intention for these generations. Perceived Usefulness and Attitude have the highest prediction impact on these consumer's intention to utilize Fintech services.

The researcher recommends banks and Fintech companies target unbanked people in Palestine, about 70% of all adults, by offering virtual accounts via e-wallet services. Banks definitely need to provide real-time services, along with 24-hour service availability. Promotion considered a key pillar in adopting e-banking services. It is further recommended that banks and Fintech companies customize their services to meet Millennials and Gen Z needs. AI systems can be implemented

within banks and Fintech systems to highly predict the consumers behavior, along with using AI for other data driven management decisions.

APPENDICES

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Appendix 1: Descriptive & Statistical Analysis- Millennials and Gen Z

Question 4: Intention Level

Group	Dimension	N	Minimum	Maximum	Mean	Std. Deviation
Millennials	GS	550	1.00	5.00	4.0732	0.5596
Gen Z	GS	560	1.00	5.00	4.1297	0.8252

Question 5: Government Support Level

Group	Dimension	N	Minimum	Maximum	Mean	Std. Deviation
Millennials	GS	550	1.00	5.00	3.2163	0.8678
Gen Z	GS	560	1.00	5.00	3.1651	0.9797

Palestine Population

Category	Population/ Million	Details		
All	5.1			
Male	2.59			
Female	2.51			
West Bank	3.05			
West Bank Male	1.55			
West Bank Female	1.5			
Gaza	2.05			
Gaza Male	1.04			
Gaza Female	1.01			
1/3 of Population <15 Years	1.938	38% of Population	36% West Bank	41% Gaza
15-24	0.969	19% of Population		
41-64	0.918	18% of Population		
25-40	1.1217	22% of Population		
>=65	0.1533	3% of Population	4% West Bank 3% Gaza	

Source: http://pcbs.gov.ps/

Validity Analysis (Millennials)

Items	λ
PU1	.832
PU2	.707
PU3	.734
PU4	.757
PEU1	.792
PEU2	.711
PEU3	.769
TRU1	.818
TRU2	.737
BI1	.708
BI2	.877
BI3	.740
PR1	.779
PR2	.797
PR3	.791
GS1	.805
GS2	.742
GS3	.789
UI1	.803
UI2	.755
ATT1	.829
ATT2	.705
ATT3	.734
INT1	.840
INT2	.790

SPSS Calculation based on Principal Component Analysis (Component Matrix)

Validity Analysis (Gen Z)

Items	λ
PU1	.764
PU2	.718
PU3	.759
PU4	.727
PEU1	.776
PEU2	.735
PEU3	.759
TRU1	.727
TRU2	.708
BI1	.737
BI2	.743
BI3	.864
PR1	.862
PR2	.884
PR3	.869
GS1	.908
GS2	.908
GS3	.899
UI1	.833
UI2	.756
ATT1	.792
ATT2	.848
ATT3	.806
INT1	.875
INT2	.859

SPSS Calculation based on Principal Component Analysis (Component Matrix)

Appendix 2: Participants' Financial Behavior & Fintech

Financial Behavior & Fintech Perception		Millennials		Gen Z	
Items	**Dimensions**	**Frequencies**	**%**	**Frequencies**	**%**
Most important to you about a Financial Service	Reliability/trust	247	44.9%	198	35.4%
	Ease of use	217	39.5%	257	45.8%
	Service	64	11.6%	82	14.6%
	Financial incentive	11	2.0%	18	3.3%
	Other	11	2.0%	5	0.9%
How you primarily access your Financial Services	Online	116	21%	114	20.3%
	Mobile	158	29%	95	17.0%
	Branch Visit for a Bank	276	50%	346	61.8%
	Telephone	0	0%	5	0.9%
I prefer using Bank Services rather than Fintech Services	Strongly Disagree	6	1.0%	21	3.7%
	Disagree	86	15.6%	74	13.2%
	Neutral	102	18.5%	135	24.1%
	Agree	294	53.7%	256	45.8%
	Strongly Agree	62	11.2%	74	13.2%
Which payment method do you use Frequently	Cash	319	58.0%	446	79.7%
	Debit/Credit Card	164	29.8%	104	18.5%
	Contactless Debit/Credit Card (PayWave)	8	1.4%	0	0.0%
	Mobile/Wearable Technology	11	2.0%	5	0.9%
	Cheques	48	8.8%	5	0.9%
Are you aware of the term 'Fintech'	Yes	263	47.8%	211	37.7%
	No	287	52.2%	349	62.3%
Do you know that e-Wallet is a mobile-based Application	Yes	370	67.3%	267	47.6%
	No	180	32.7%	293	52.4%
Have you used Fintech Services	The only method I used for online payment	48	8.8%	32	5.7%
	Frequently	56	10.2%	32	5.7%
	Occasionally	196	35.6%	108	19.3%
	Once	11	2.0%	53	9.4%
	Rarely	116	21.0%	85	15.1%
	Never	123	22.4%	200	35.8%
	I don't know about it	0	0.0%	50	9.0%
	Strongly Disagree	6	1.0%	NA	

Happy to use e-Wallet to access and manage your salary Payroll	Disagree	6	1.0%		
	Neutral	56	10.2%		
	Agree	353	64.4%		
	Strongly Agree	129	23.4%		
Prefer Realtime Financial Services	Strongly Disagree	0	0.0%	0	0.0%
	Disagree	0	0.0%	34	6.1%
	Neutral	73	13.2%	135	24.1%
	Agree	292	53.1%	240	42.9%
	Strongly Agree	185	33.7%	151	26.9%
Have you been in a Hard Situation to Receive Instant Money Transfer?	Strongly Disagree	32	5.9%	16	2.8%
	Disagree	102	18.5%	135	24.1%
	Neutral	140	25.4%	146	26.0%
	Agree	214	39.0%	173	31.1%
	Strongly Agree	62	11.2%	90	16.0%
Do you prefer using your e-Wallet to pay your tuition fees?	Strongly Disagree	1	0.2%	11	1.9%
	Disagree	21	3.9%	16	2.9%
	Neutral	66	12.0%	63	11.3%
	Agree	325	59.0%	288	51.4%
	Strongly Agree	137	24.9%	182	32.5%
The role of Fintech companies in the Banking Industry	Competitors	102	18.5%	177	31.6%
	Complementary	268	48.8%	253	45.3%
	Accelerators	70	12.7%	66	11.8%
	Partners	78	14.1%	48	8.5%
	Other	32	5.9%	16	2.8%
What persuade you quit the current bank to join a digital financial service?	Financial incentive	46	8.3%	77	13.7%
	Better services	158	28.8%	153	27.4%
	Ease of Use	134	24.4%	122	21.7%
	Cheaper	35	6.3%	63	11.3%
	Speed of services	113	20.5%	135	24.1%
	Ease of process	64	11.7%	10	1.8%
Daily Mobile Apps Usage	90-100%	54	9.8%	122	21.7%
	80-89%	122	22.0%	145	25.9%
	70-79%	118	21.5%	132	23.6%
	60-69%	48	8.8%	42	7.5%
	50-59%	62	11.2%	74	13.2%
	40-49%	67	12.2%	11	1.9%
	20-39%	15	2.8%	21	3.8%
	1-19%	64	11.7%	13	2.4%
Financial services provided through	Strongly Disagree	6	1.0%	0	0.0%
	Disagree	62	11.2%	100	17.9%

Mobile Apps secured as web services	Neutral	137	24.9%	148	26.4%
	Agree	243	44.4%	172	30.7%
	Strongly Agree	102	18.5%	140	25.0%
I Trust my Bank	Strongly Disagree	17	3.0%	6	1.0%
	Disagree	22	4.0%	11	2.0%
	Neutral	39	7.0%	84	15.0%
	Agree	291	53.0%	313	56.0%
	Strongly Agree	181	33.0%	146	26.0%
The most Useful Benefit of Mobile Banking Services	Cost saving (Lower rates, transaction fees)	62	11.2%	140	25.0%
	Time saving (no need to go to bank or ATM)	332	60.5%	227	40.6%
	24 h Access (can make transaction any time)	137	24.9%	164	29.2%
	Physical security (no need to go out with cash)	19	3.4%	29	5.2%
Fintech Services Cheaper than Banks Services?	Strongly Disagree	6	1.0%	5	0.9%
	Disagree	32	5.9%	26	4.7%
	Neutral	171	31.1%	162	28.9%
	Agree	268	48.8%	248	44.3%
	Strongly Agree	73	13.2%	119	21.2%
Promotion is important to increase your interest in e-banking	Strongly Disagree	6	1.0%	0	0.0%
	Disagree	11	2.0%	11	1.9%
	Neutral	37	6.8%	45	8.1%
	Agree	365	66.3%	322	57.5%
	Strongly Agree	131	23.9%	182	32.5%
Financial Services want to use at Mobile	Robot advisor	32	5.9%	77	13.7%
	Payments Services	349	63.4%	322	57.5%
	Wealth management app	145	26.3%	132	23.6%
	Virtual Currency Platforms	13	2.4%	13	2.4%
	Venture/ P2P lending	11	2.0%	16	2.8%
e-Wallet services you're interested to use	Deposit and Withdraw from and into the e-Wallet.	88	16.0%	95	17.0%
	Money Transfer	83	15.0%	67	12.0%
	Issuing the International Internet Shopping Card	44	8.0%	50	9.0%
	Internet and Mobile Top-up	66	12.0%	78	14.0%

	Purchasing and Payment through QR (for Merchants)	44	8.0%	50	9.0%
	E-Bills Payment	98	18.0%	90	16.0%
	Purchasing e-Cards such as Google and Apple cards	33	6.0%	28	5.0%
	Purchasing through e-commerce sites and applications	94	17.0%	102	18.0%
What type of bills would you pay on your mobile phone	Mobile phone bill	138	25.0%	162	29.0%
	Utility (electricity, water)	66	12.0%	28	5.0%
	School/University fees	44	8.0%	101	18.0%
	Mobile Charge (top-up)	104	19.0%	118	21.0%
	Goods for work	77	14.0%	45	8.0%
	Other	121	22.0%	106	19.0%

Appendix 3: AMOS Calculations (Millennials & Gen Z)

Millennials Covariances

Path Coefficients			Estimate	S.E.	C.R.	P	Label
PEU	<-->	PU	.147	.020	7.164	***	par_1
PU	<-->	TRU	.211	.030	7.066	***	par_2
PU	<-->	BI	.102	.019	5.439	***	par_3
PU	<-->	PR	.025	.027	.953	.341	par_4
PU	<-->	GS	.092	.029	3.143	.002	par_5
PU	<-->	UI	.133	.022	6.037	***	par_6
PU	<-->	ATT	.148	.020	7.529	***	par_7
PU	<-->	INT	.155	.021	7.239	***	par_8
PEU	<-->	TRU	.247	.034	7.202	***	par_9
PEU	<-->	BI	.130	.022	5.964	***	par_10
PEU	<-->	PR	.019	.030	.625	.532	par_11
PEU	<-->	GS	.150	.034	4.396	***	par_12
PEU	<-->	UI	.120	.024	4.948	***	par_13
PEU	<-->	ATT	.136	.021	6.397	***	par_14
PEU	<-->	INT	.136	.023	5.909	***	par_15
TRU	<-->	BI	.173	.031	5.518	***	par_16
TRU	<-->	PR	.058	.044	1.310	.190	par_17
TRU	<-->	GS	.294	.052	5.657	***	par_18
TRU	<-->	UI	.195	.036	5.427	***	par_19
TRU	<-->	ATT	.188	.031	6.108	***	par_20
TRU	<-->	INT	.210	.034	6.156	***	par_21

BI	<-->	PR	-.057	.030	-1.901	.057	par_22
BI	<-->	GS	.128	.033	3.876	***	par_23
BI	<-->	UI	.080	.023	3.490	***	par_24
BI	<-->	ATT	.096	.020	4.840	***	par_25
BI	<-->	INT	.109	.022	4.976	***	par_26
PR	<-->	GS	-.236	.051	-4.580	***	par_27
GS	<-->	UI	.170	.038	4.412	***	par_28
PR	<-->	ATT	.044	.029	1.521	.128	par_29
PR	<-->	INT	.024	.031	.760	.447	par_30
GS	<-->	ATT	.105	.032	3.330	***	par_31
GS	<-->	INT	.168	.036	4.687	***	par_32
UI	<-->	ATT	.174	.025	7.070	***	par_33
UI	<-->	INT	.175	.027	6.583	***	par_34
ATT	<-->	INT	.204	.024	8.362	***	par_35
PR	<-->	UI	-.006	.034	-.179	.858	par_36

Gen Z Covariances

Path Coefficients			**Estimate**	**S.E.**	**C.R.**	**P**	**Label**
PEU	<-->	PU	.300	.036	8.401	***	par_1
PU	<-->	TRU	.319	.043	7.473	***	par_2
PU	<-->	BI	.266	.035	7.644	***	par_3
PU	<-->	PR	.147	.047	3.149	.002	par_4
PU	<-->	GS	.038	.043	.891	.373	par_5
PU	<-->	UI	.354	.044	8.114	***	par_6
PU	<-->	ATT	.380	.043	8.855	***	par_7
PU	<-->	INT	.380	.044	8.552	***	par_8
PEU	<-->	TRU	.365	.046	7.930	***	par_9
PEU	<-->	BI	.264	.036	7.303	***	par_10
PEU	<-->	PR	.107	.049	2.211	.027	par_11
PEU	<-->	GS	.030	.045	.663	.507	par_12
PEU	<-->	UI	.356	.045	7.841	***	par_13
PEU	<-->	ATT	.348	.043	8.060	***	par_14
PEU	<-->	INT	.305	.043	7.047	***	par_15
TRU	<-->	BI	.245	.043	5.730	***	par_16
TRU	<-->	PR	.359	.065	5.497	***	par_17
TRU	<-->	GS	.127	.057	2.225	.026	par_18
TRU	<-->	UI	.404	.055	7.287	***	par_19
TRU	<-->	ATT	.391	.053	7.447	***	par_20
TRU	<-->	INT	.382	.054	7.022	***	par_21
BI	<-->	PR	-.081	.049	-1.657	.098	par_22
BI	<-->	GS	.193	.048	4.060	***	par_23
BI	<-->	UI	.310	.044	6.995	***	par_24
BI	<-->	ATT	.323	.043	7.568	***	par_25
BI	<-->	INT	.347	.045	7.656	***	par_26

PR	<-->	GS	-.295	.073	-4.030	***	par_27
PR	<-->	UI	.137	.060	2.256	.024	par_28
PR	<-->	ATT	.165	.057	2.881	.004	par_29
PR	<-->	INT	.168	.060	2.780	.005	par_30
GS	<-->	UI	.174	.057	3.046	.002	par_31
GS	<-->	ATT	.062	.053	1.177	.239	par_32
GS	<-->	INT	.044	.055	.790	.429	par_33
UI	<-->	ATT	.492	.056	8.778	***	par_34
UI	<-->	INT	.453	.056	8.024	***	par_35
ATT	<-->	INT	.546	.058	9.402	***	par_36

Millennials Attitude (Standardized Regression Weights)

Path Direction			Estimate
ATT	<---	PU	.220
ATT	<---	PEU	.127
ATT	<---	TRU	.010
ATT	<---	BI	.040
ATT	<---	PR	.063
ATT	<---	UI	.264
ATT	<---	INT	.553
ATT	<---	GS	-.072

Millennials Perceived Usefulness (Standardized Regression Weights)

Path Direction			Estimate
PU	<---	PEU	.274
PU	<---	TRU	.290
PU	<---	BI	.086
PU	<---	PR	-.037
PU	<---	GS	-.153
PU	<---	UI	.106
PU	<---	ATT	.266
PU	<---	INT	.233

Millennials Intention (Standardized Regression Weights)

Path Direction			Estimate
INT	<---	PU	.203
INT	<---	PEU	-.027
INT	<---	TRU	.025
INT	<---	BI	.072
INT	<---	PR	.058
INT	<---	GS	.184

INT	<---	UI	.101
INT	<---	ATT	.586

Gen Z Attitude (Standardized Regression Weights)

Path Direction			Estimate
ATT	<---	PU	.187
ATT	<---	PEU	.163
ATT	<---	TRU	.012
ATT	<---	BI	.007
ATT	<---	PR	.011
ATT	<---	GS	-.018
ATT	<---	UI	.330
ATT	<---	INT	.697

Gen Z Perceived Usefulness (Standardized Regression Weights)

Path Direction			Estimate
PU	<---	PEU	.379
PU	<---	TRU	.050
PU	<---	BI	.218
PU	<---	PR	.110
PU	<---	GS	-.037
PU	<---	UI	.119
PU	<---	ATT	.313
PU	<---	INT	.290

Gen Z Intention (Standardized Regression Weights)

Path Direction			Estimate
INT	<---	PU	.185
INT	<---	PEU	-.214
INT	<---	TRU	.100
INT	<---	BI	.222
INT	<---	PR	.017
INT	<---	GS	-.083
INT	<---	UI	.033
INT	<---	ATT	.741

Appendix 4: Millennials & Gen Z Questionnaire

Millennials & Gen Z Questionnaire Part 1-2

(Social Profile, Financial Behavior & Fintech Perception)

Social Profile	
Items	**Dimensions**
Sex	Male
	Female
Monthly Income	500-1599 NIS
	1600-2599
	2600-5000
	>5000
Own Bank Account	Yes
	No
E-banking Usage	I don't have Bank Account
	I don't Use it
	Once a Month
	Twice a Month
	3+ Times a Month
Own Smartphone	Yes
	No
Tuition Fees Payment Method	NA
	Cash
	Money Transfer
	Cheque

Financial Behavior & Fintech Perception

Items	Dimensions
Most important to you about a Financial Service	Reliability/trust
	Ease of use
	Service
	Financial incentive
	Other
How you primarily access your Financial Services	Online
	Mobile
	Branch Visit for a Bank
I prefer using Bank Services rather than Fintech Services	Strongly Disagree
	Disagree
	Neutral

	Agree
	Strongly Agree
Which payment method do you use Frequently	Cash
	Debit/Credit Card
	Contactless Debit/Credit Card (PayWave)
	Mobile/Wearable Technology
	Cheques
Are you aware of the term 'Fintech'	Yes
	No
Do you know that e-Wallet is a mobile-based Application	Yes
	No
Have you used Fintech Services	The only method I used for online payment
	Frequently
	Occasionally
	Once
	Rarely
	Never
Happy to use e-Wallet to access and manage your salary Payroll	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree
Prefer Realtime Financial Services	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree
Have you been in a Hard Situation to Receive Instant Money Transfer?	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree
Do you prefer using your e-Wallet to pay your tuition fees?	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree
The role of Fintech companies in the Banking Industry	Competitors
	Complementary
	Accelerators

	Partners
	Other
What persuade you quit the current bank to join a digital financial service?	Financial incentive
	Better services
	Ease of Use
	Cheaper
	Speed of services
	Ease of process
Daily Mobile Apps Usage	90-100%
	80-89%
	70-79%
	60-69%
	50-59%
	40-49%
	20-39%
	1-19%
Financial services provided through Mobile Apps secured as web services	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree
I Trust my Bank	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree
The most Useful Benefit of Mobile Banking Services	Cost saving (Lower rates, transaction fees)
	Time saving (no need to go to bank or ATM)
	24 h Access (can make transaction any time)
	Physical security (no need to go out with cash)
Fintech Services Cheaper than Banks Services?	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree
Promotion is important to increase your interest in e-banking	Strongly Disagree
	Disagree
	Neutral
	Agree
	Strongly Agree

Financial Services want to use at Mobile	Robot advisor
	Payments Services
	Wealth management app
	Virtual Currency Platforms
	Venture/ P2P lending
e-Wallet services you're interested to use	Deposit and Withdraw from and into the e-Wallet.
	Money Transfer
	Issuing the International Internet Shopping Card
	Internet and Mobile Top-up
	Purchasing and Payment through QR (for Merchants)
	E-Bills Payment
	Purchasing e-Cards such as Google and Apple cards
	Purchasing through e-commerce sites and applications
What type of bills would you pay on your mobile phone	Mobile phone bill
	Utility (electricity, water)
	School/University fees
	Mobile Charge (top-up)
	Goods for work
	Other

Millennials & Gen Z Questionnaire Part 2-2

(Extended Technology Acceptance Model- ETAM)

E-TAM Questionnaire

E-TAM		**5 Likert Scale Scales**				
Variables	**Items**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
Perceived Usefulness	Fintech could meet my financial services needs					
	"Fintech services could save my time"					
	"Fintech services could improve services efficiency"					
	On General, Fintech services are suitable to me					
	Fintech services are easy to use					

Perceived Ease of Use	"I think the operation interface of Fintech services interface is user friendly and easy to understand"					
	Fintech services equipment's are easy to obtain (mobiles, APPs, Internet Connection)					
Trust	"Fintech services keep my personal information safe"					
	"Fintech services are trustable"					
Brand Image	"The bank could provide good services and products"					
	I prefer services provided by familiar brands					
	The bank has a good reputation					
Perceived Risk	Money could be stolen when using Fintech Services					
	"I think that my personal privacy will be under threat to be disclosed"					
	On general, Fintech services are risky					
Government Support	In my opinion the government encourage and supports the usage of Fintech services					
	I think the government provided the solid base from regulations and legislation to facilitate the work of Fintech services					
	I believe that government provided the required infrastructure that push the Fintech services in the market					
User Innovativeness	When there is a new product, I am among the early birds who would like to try and use it					
	"In my opinion using Fintech services is a very good idea"					
Attitude	It is a pleasant experience when using Fintech services					
	"I am interested in using Fintech services"					
	"If I used Fintech services before I will continue using it"					
Intention	I am looking for using fintech services very soon					
	"I am willing to recommend Fintech services to friends"					

Appendix 5: Banks Interviews Questions

Banks Readiness Measure to Fintech-B

	Fintech Core Technology Categories					
Fintech Technology Sub-Categories	1. **Remittances & Payment**	**2. Big Data & Artificial Intelligence**	**3. Digital Banking**	**4. Lending & Alternative Financing**	**5. Security & Risk Management**	**6. Blockchain Services**
	1.1 Omnichannel payment	2.1 Automated support	3.1 Personal Financial Management	4.1 Lending Marketplaces	5.1 PCI & DSS	6.1 Process Automation
	1.2 Money Transfer	2.2 Predictive Analytics	3.2 Onboarding New Customers	4.2 Loan Comparison Solutions	5.2 GDPR	6.2 P2P transactions
	1.3 API Development	2.3 Financial Data Management	3.3 Digitalization of Banking	4.3 Supply Chain Financing	5.3 Security Testing	6.3 Supply Chain Management
	1.4 Third-party integration	2.4 Data-driven management decision	3.4 Fraud and Security	4.4 Invoice-based Financing	5.4 Fraud Detection	6.4 Asset Tokenization
	1.5. Mobile Payments	2.5 Fraud Detection	3.5 Banking Data Aggregation APIs	4.5 Fund Management	5.5 Advanced Risk System	6.5 Data Access Decentralization
	1.6 Online payment	2.6 AI for Back Office	3.6 Anti-money Laundering			6.6 Digital Identity

Banks Readiness Measure 1 (Remittances & Payment)

Service Type	Do you Know About it (Yes, No)	Is It Available (Yes, No)	Could it be Implemented (Yes, No)
Omnichannel payment			
Money Transfer			
API Development			
Third-party integration			
Mobile Payments			
Online payment			

Banks Readiness Measure 2 (Big Data & Artificial Intelligence AI)

Service Type	Do you Know About it (Yes, No)	Is It Available (Yes, No)	Could it be Implemented (Yes, No)
Automated support			
Predictive Analytics			
Financial Data Management			
Data-driven management decision			

Fraud Detection			
AI for Back Office			

Banks Readiness Measure 3 (Digital Banking)

Service Type	**Do you Know About it (Yes, No)**	**Is It Available (Yes, No)**	**Could it be Implemented (Yes, No)**
Personal Financial Management			
Onboarding New Customers			
Digitalization of Banking			
Fraud and Security			
Banking Data Aggregation APIs			
Anti-money Laundering			

Banks Readiness Measure 4 (Lending & Alternative Financing)

Service Type	**Do you Know About it (Yes, No)**	**Is It Available (Yes, No)**	**Could it be Implemented (Yes, No)**
Lending Marketplaces			

Loan Comparison Solutions			
Supply Chain Financing			
Invoice-based Financing			
Fund Management			

Banks Readiness Measure 5 (Security & Risk Management)

Service Type	**Do you Know About it (Yes, No)**	**Is It Available (Yes, No)**	**Could it be Implemented (Yes, No)**
PCI (Payment Card Industry) DSS (Data Security Standard) Compliance			
GDPR (General Data Protection Regulation) Compliance			
Security Testing			
Fraud Detection			
Advanced Risk System			

Banks Readiness Measure 6 (Blockchain Services)

Service Type	Do you Know About it (Yes, No)	Is It Available (Yes, No)	Could it be Implemented (Yes, No)
Process Automation			
P2P transactions			
Supply Chain Management			
Asset Tokenization			
Data Access Decentralization			
Digital Identity			

Question 1: "What is the readiness level of the Palestinian Banks for the Fintech requirements in the financial digital transformation?"

Question 2: What is the Attractiveness level of the Palestinian Market for Fintech Services?

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God's is my inspire who leads me to pursue this unique experience to obtain a Ph.D. degree in Management and Business Administration, God's say in his Holey Book (Al-Quran)

And say, "Do [as you will], for Allah will see your deeds, and [so, will] His Messenger and the believers. And you will be returned to the Knower of the unseen and the witnessed, and He will inform you of what you used to do."

I learned from this verse that the human has to seek and work hard to achieve his dreams, a dream without a plan will not be recognized by the human himself and by others, God will lead the right and kind people to help you and let you fulfill and achieve your dream.

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