

Risk Management Compliance of Financial Technology Firms Operating in Jordan

Anas Ahmad Bani Atta¹, Maha Shehdeh², Mohammad D. Othman¹, Ahmad Bani Ahmad¹,
Montaser Hamdan³, Basel J. A. Ali⁴

¹Financial and Accounting Sciences Department, Faculty of Business, Middle East University, Jordan

²Finance and Banking Sciences Department, Applied Sciences Privat University, Amman, Jordan

³Department of Accounting, Quds open university, Palestinian

⁴College of Economics and Management (CoEM), Al Qasimia University, Sharjah, United Arab Emirates

Abaniattah@meu.edu.jo (Corresponding author), ma_shehadeh@asu.edu.jo, mdothman@meu.edu.jo, Ahmad@meu.edu.jo, monhamdan@qou.edu, bali@alqasimia.ac.ae

Abstract. The expansion of the financial technology (FinTech) sector on a global scale necessitates the prioritization of risk management compliance by FinTech organizations. This prioritization is crucial in order to safeguard the stability, security, and integrity of their operational processes. The objective of this study is to examine the existing risk management strategies and compliance frameworks utilized by FinTech companies in Jordan. The investigation will concentrate on crucial domains including cybersecurity, data privacy, regulatory adherence, and operational risks. This study investigates the risk management compliance of fintech firms operating in Jordan. In order to obtain comprehensive insights, researchers employ a combination of quantitative and qualitative research approaches. The collection of primary data is accomplished by conducting organized surveys with representatives from FinTech firms, industry experts, and regulatory bodies. Secondary data is acquired through the utilization of pertinent publications, studies, and regulatory documents. The research findings presented in this study make a valuable contribution to the current knowledge base on compliance with risk management practices in the FinTech industry, particularly in the context of Jordan. The research findings will provide valuable insights for FinTech companies in Jordan to identify areas for improvement in their risk management systems and devise ways to boost compliance.

Keywords: fintech, risk management, firm, Jordan

1. Introduction

The financial technology (FinTech) industry has rapidly transformed the financial landscape globally, offering innovative solutions that enhance convenience, accessibility, and efficiency in financial services. Jordan, like many other countries, has embraced this FinTech revolution, witnessing a surge in the number of FinTech firms operating within its borders. However, this rapid expansion brings with it a host of risks and challenges that necessitate a robust risk management compliance framework.

The modern financial ecosystem is marked by a complex interplay of technology, data, and financial services, making it imperative for FinTech firms in Jordan to adhere to rigorous risk management and compliance practices. In this introduction, we will explore the dynamic landscape of FinTech in Jordan and the critical importance of risk management compliance for these firms.

Over the past decade, Jordan has seen a burgeoning FinTech sector, characterized by startups and established companies offering a wide array of financial services, including mobile payments, peer-to-peer lending, blockchain-based solutions, and digital banking. This emergence has been driven by factors such as increasing smartphone penetration, a tech-savvy population, and a supportive regulatory environment.

The risk management compliance obligations of fintech firms are determined by their particular operations, geographic locations, and regulatory frameworks (Al-Gasaymeh, et al. 2023; Al Tarawneh, et al. 2023). In order to maintain compliance with regional legislations, it is crucial for fintech firms to remain informed about pertinent rules and actively seek legal and regulatory counsel (Hezabr et al. 2023; Shehadeh et al. 2023b).

Ensuring compliance with risk management is an essential necessity for financial technology (fintech) firms. In general, regulatory measures are imposed on these organizations to safeguard consumer funds, minimize the occurrence of fraudulent activities and money laundering, and uphold the stability of the financial system (Miskam, et al. 2019; Shehadeh et al. 2023a). The significance of incorporating risk management techniques holds great importance within the current global corporate landscape (Ali, et al. 2023; Oudat and Ali, 2021; Saleh et al., 2023). In the current corporate environment, it is crucial to implement efficient risk management strategies (Alrabei, et al., 2022; Hasan, et al. 2021).

Fintech firms face a range of risks due to their dynamic corporate structure and complex nature. Insufficient management of these risks could lead to the transformation of fintech revenues into non-performing assets. Hence, it is crucial for the fintech sector to proficiently recognize, handle, and forecast potential risks and their associated consequences. Risks may occur at any time, but to address and solve every risk is very expensive, both in time and resources. So risk management is a continuous process. When managing risks, regulators, managers and analysts need to have identify, analyse, distinguish, and communicate skills (Van Der Voort, De Bruijne, & Steenhuisen, 2019). Therefore, identifying different types of risks could help managers to analyse, monitor, manage and reduce risks. Many risks exist in bank operations. Credit risk, market risk, liquidity and capital risk and operational risk are four of the main concerns for managers. Thus, in order to evaluate bank performance through risk management, the basic idea is to analyse risk variables from published or internal reports. For people outside of banks, the annual reports, government datasets and newspapers are direct ways to find risk variables.

The field of FinTech is closely linked to financial innovation as it enables the advancement of new products, services, procedures, and businesses (Urumsah, et al. 2022; Utami, et al. 2021). According to Baur and Dimpfl (2021), the aforementioned statement utilizes information technology (IT) to present innovative concepts and reshape our understanding of currency and financial institutions. Since the year 2000, there has been an increased emphasis on achieving financial inclusion, which has consequently led to heightened regulatory scrutiny on financial institutions in order to ensure compliance with anti-money laundering and anti-terrorism funding legislation (Gaviyau, and Sibindi,

2023). Insufficient financial regulation, particularly concerning anti-money laundering and counter-terrorist financing policies, has the potential to impede financial integration (Barefoot, 2020; Huong et al. 2021).

Based on the findings of Saleh et al. (2023), it has been observed that financial institutions in Jordan are discontinuing their affiliations with money transfer organizations, correspondent banks, and other entities. This decision is primarily attributed to the absence of unambiguous and consistent guidelines from regulatory bodies concerning the effective handling of anti-money laundering and countering the financing of terrorism risks. The execution of countermeasures, as indicated by Ali et al. (2023), leads to an increase in risk within the global financial industry. The reason for this is that individuals with a high-risk profile are often driven to seek financial services from smaller institutions that may lack the necessary resources to adequately handle Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) measures or operate inside the formal banking sector.

According to a study conducted by Al-Amarneh et al. (2023), the integration of fintech solutions has led to the improvement of risk management strategies that are in accordance with regulatory frameworks. According to Bani Atta et al. (2023) as well as Moturi and Ogoti (2020), the lack of crucial IT risk management elements among unlicensed mobile money lenders in Kenya underscores the necessity for strong and secure financial systems. It is crucial for fintech firms to employ robust frameworks for risk assessment and management in order to proficiently recognize, examine, and alleviate dangers. The necessity of implementing risk assessments, risk controls, and risk exposure monitoring and reporting has been recognized.

1.1. Fintech: Scope and Performance in Jordan

In the country of Jordan, the fintech industry is seeing tremendous growth, with a notable increase in the number of fintech companies. Many financial technology (fintech) organizations offer their clients access to digital payment solutions, such as the online payment tool known as Efwaterkom. Efwaterkom has expanded its range of financial services offerings, so affording clients a wider array of possibilities to avail themselves of these services. Additionally, fintech companies offer innovative services that enhance clients' experiences, so making them more engaging. Hence, the banking business is significantly influenced by financial technology. Failure to adapt to this emerging trend by banks may result in their lagging behind and failing to align with global development patterns, so significantly impacting the bank's long-term growth and progress. Banks can gain a significant competitive edge by engaging in collaborations with fintech firms, as this allows them to effectively use novel technology advancements. Consequently, such partnerships enable banks to enhance service quality, minimize expenses, and augment productivity (Alsmadi et al. 2022; Almahadian et al 2023).

According to Atichasari, et al. (2023) financial technology encompasses technologically enabled business models, applications, processes, and products within the financial services sector, as defined by the Financial Services Board (FSB). According to Bani Atta et al. (2023), the aforementioned project can be characterized as an initiative within the financial industry that leverages technology to transform operational responsibilities, business methodologies, and the range of products available. According to Ha (2023), the field of fintech has significant scale, complexity, and variety due to its inherent ambiguity. Certain professionals in the field of financial technology prioritize the pursuit of innovative solutions, whereas others direct their attention towards exploring untapped markets and developing novel products. Certain individuals prioritize adherence to regulations and legal frameworks, whilst others place emphasis on technological advancements and electronic devices.

Financial technology (FinTech) businesses exhibit a distinct cultural milieu in comparison to traditional financial institutions. According to Sakirovic, (2023), FinTech companies are primarily propelled by individuals with a banking background who were displaced from their positions during the financial crisis and subsequently endeavored to apply their financial expertise within the financial sector. The proliferation of smartphones and the widespread availability of internet connectivity have

led to a growing re Fintech Regulatory Policies in Jordan.

According to research by USAID (2017), mobile money services were in compliance with the mobile payments' circular issued by the Central Bank of Jordan in 2010, prior to 2013. Nevertheless, it was determined to be insufficient in addressing the various issues and opportunities inside the business. The implementation of licensing and distribution methods in 2010 had a restrictive impact on the private sector, hindering the establishment of viable services and restricting the growth of the formal banking industry. The introduction of the legislative framework for mobile money in 2013 led to the establishment of a payment systems plan that covered the period from 2013 to 2016, and was subsequently revised in 2017. The scholarly articles pertaining to the regulation of distributed file systems (DFS) in the Central Business District of a jurisdiction include: The regulatory framework governing mobile money in Jordan was established by the 2013 Jordanian Mobile Payment Services Instructions (MPSI). The Mobile Payment Service Operational Framework offers a detailed delineation of the procedures, constraints, and operational terrain pertaining to mobile financial services. The Maya Declaration of 2016 holds considerable importance and merits scholarly consideration. The Maya Declaration consisted of a comprehensive set of nine commitments related to the promotion of financial inclusion. The DFS consumer protection objective was implemented in April 2017. The regulations concerning the safeguarding of financial customers and the management of complaints. The individual in question is Jordan. In July 2017, Mobile Payment integrated mobile money functionality into its platform. As per the report by USAID (2017), many entities including banks, mobile network operators, wallet issuers, and consortiums has the ability to acquire PSP licenses, commonly referred to as Mahfazti licenses. The adaptability inherent in MFS business models facilitates the opportunity for experimentation, which in turn has the potential to yield significant advancements. Fintech payment service providers (PSPs) may have challenges in effectively implementing mobile money services due to potential limitations in resources and market reach. To facilitate the provision of mobile money services, mobile carriers are obligated to establish subsidiary entities with a minimum paid-up capital amounting to JD 1.5 million, which is equivalent to USD 2.1 million.liance on technology among consumers, prompting them to increasingly seek out faster and more convenient online services, both within their local communities and beyond international borders. According to Coetzee, (2018), a study conducted in 2015 revealed that a significant majority of millennials in the United States, namely 75%, exhibited a preference for non-bank financial services such as those offered by Google and Amazon, as opposed to traditional banking services. According to Buchak, et al. (2018), in the year 2015, shadow banks accounted for 75% of the United States market. Additionally, the authors note that FinTech lenders, specifically those engaged in online mortgage issuance, had significant growth during this period. According to recent studies (Alawadhi, et al. 2022; Foud et al. 2023, 2022; Hassan et al. 2022; Al-Araj et al. 2023), the integration of machine learning and artificial intelligence (AI) has resulted in the automation of many jobs within the FinTech industry. This automation has subsequently led to reduced costs for FinTech companies.

Financial technology (FinTech) enterprises such as NerdWallet in the United States and BankBazaar.com are poised to bring about a transformative impact on the realm of financial services, encompassing payment systems, brokerage services, and insurance provisions. These companies have introduced innovative platforms that facilitate effortless account opening procedures for customers, while also enabling seamless provider transitions through a single click (Johnson et al. 2023). The authors Sajid et al. 2023 gather proposals from many banks and insurers and remunerate them for the provision of these services.

According to a survey conducted by USAID LENS in November 2018, it was found that a significant proportion of micro-businesses in Jordan, specifically 72%, do not have access to banking services. Thirteen percent of individuals employ in-branch services, while eight percent make use of automated teller machines (ATMs). Additionally, four percent utilize mobile banking services, and one percent rely on credit or debit cards for their financial transactions. Micro enterprises exhibited little

utilization of digital financial services, with Aya Pay accounting for a mere 2%, Dinarak at 6%, eFAWATEER.com at 7%, Mahfazti at 4%, and Zain Cash at 6%. The utilization of various financial services such as bill payment, balance checking, transfer sending/receiving, and pre-payment for airtime/subscriptions is seen. The majority of micro-businesses exhibited a preference for cash transactions. According to the survey results, 36% of micro-businesses expressed their intention to employ DFS, while 44% said that they would not. Additionally, 20% of respondents reported being uncertain or unaware of their stance on the matter. According to the survey results, a significant proportion of participants, specifically 36%, identified trust and account lessness as the primary concerns.

1.2. Risk Issues Associated with Jordanian Fintech Firms

The clarity of taxation rules concerning payment service providers has been identified as a significant issue (Alshirah, et al. 2022; Thuneibat, et al. 2022). In the country of Jordan, financial service enterprises are subjected to an income tax rate of 35%, whereas fintech firms that engage in comparable activities are taxed at a significantly lower rate of 5%. Fintech companies might potentially qualify for sales tax exemptions, mirroring the treatment afforded to traditional financial institutions. This clarification has the ability to influence the pricing of services. In order to effectively execute a brief-term market expansion strategy, it is important to establish a thorough tax structure. The transaction restrictions pertaining to mobile wallets in this specific market exhibit relatively lower levels when compared to those reported in other markets within the European Union. Several microfinance institutions have documented that client who own loans over the prescribed cash-out thresholds of mobile wallets encounter inconvenience as they are compelled to conduct several cash-out transactions, hence imposing financial strain.

Considering the early development phase of the mobile wallet industry, it is crucial to address these constraints in order to promote a more comprehensive shift towards digital financial services and reduce dependence on conventional approaches. Payment service providers (PSPs) commonly participate in direct transactions with billers or intermediaries across diverse markets. Nevertheless, eFAWATEER.com distinguishes itself as the exclusive aggregator for bill payments, providing a commission structure that allows payment service providers (PSPs) to provide a certain margin to cover costs associated with cash-in and operating endeavors. The Jordanian industrial sector is currently grappling with a notable issue pertaining to the distribution of commission shares among eFAWATEER.com, payment service providers (PSPs), and the Central Bank of Jordan (CBJ). This problem arises due to the pivotal role that bill payment plays in boosting digital financial services (DFS) activities. The present configuration exhibits a greater degree of leniency towards Payment Service Providers (PSPs). There is a potential for the agent network of the Kingdom to be insufficiently developed, as the payment service providers (PSPs) participating in bill payment transactions do not produce substantial revenue.

1.3. Risk Management Compliance in Jordan

Until 2017, Jordan lacked statutory provisions aimed at protecting financial customers, except for the 2012 Instructions on Dealing with Customers. The extent of transparency was constrained to the divulgence of information concerning the financial accounts of individuals. In the year 2017, the Central Bank of Jordan (CBJ) enacted new laws by introducing the "Instructions on the Protection of Personal Data of the Clients of Payment Services and Electronic Transfer of Funds" specifically targeting non-banking organizations. The main purpose of this legislation was to ensure the protection of customers' finances, provide principles for consumer protection, establish a framework for handling customer complaints, ensure the security and governance of systems, and improve data collecting, analysis, and visualization. Like its counterparts in the financial industry, fintech companies in Jordan must comply with regulations to maintain financial stability.

1.4. Licensing and Registration

It is absolutely necessary to have appropriate licensing, registration, and risk management systems in place in order to run a financially successful financial technology (fintech) company. Fintech companies are able to give their consumers access to the most cutting-edge financial goods and services because they utilize cutting-edge technology and data analytics. Companies that deal in financial technology are subject to a wide variety of duties imposed by various regulatory bodies. These restrictions are meant to safeguard customers, preserve the integrity of the market, and cut down on potential dangers.

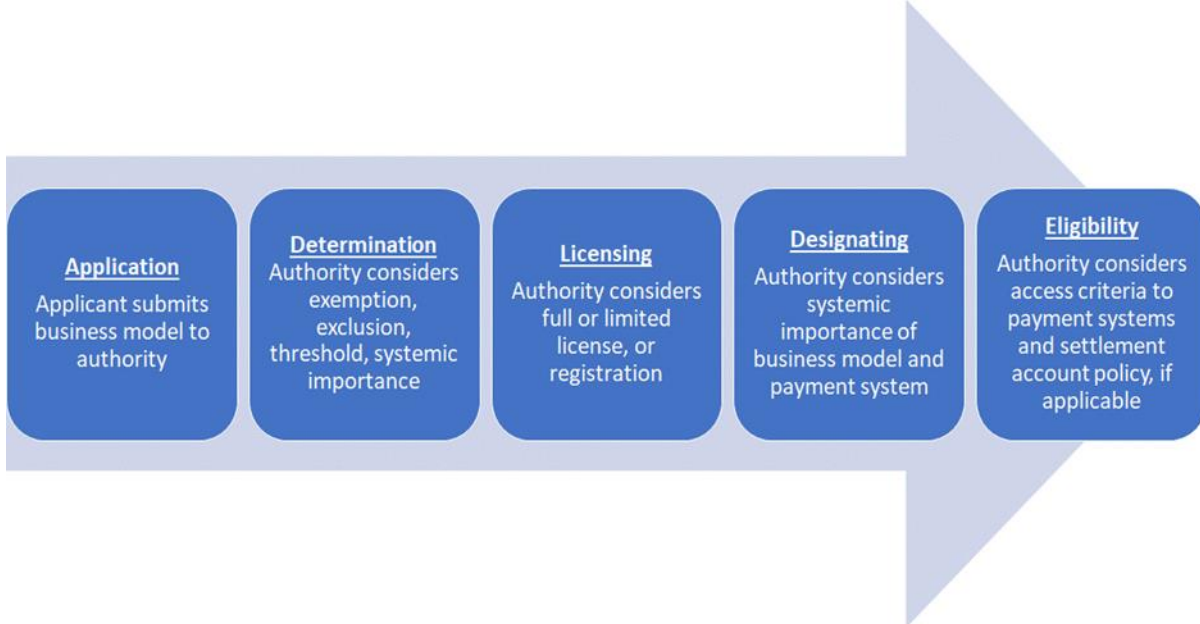


Fig. 1: Licensing and Designation of Nonbank Payment Service Providers.

The regulatory requirements pertaining to activities related to payments are extensive and are divided into two distinct roles: prudential monitoring and oversight. The establishment of powers for supervision and monitoring is frequently observed in legislative frameworks concerning central banks and regulatory measures relevant to payment services. Prudential oversight is applied to PSPs. The key areas of oversight encompass payment systems, significant service providers, payment instruments, and payment schemes. These strategies exhibit a mutually reinforcing relationship. The primary objective of prudential supervision is to guarantee the safety, stability, and security of financial institutions that offer payment services to users. On the other hand, oversight primarily concentrates on ensuring the sound and secure operation of payment systems, payment instruments, payment schemes, or any other payment infrastructures. In a study conducted by Khiaonarong and Goh (2020), The initiation of licensing proceedings frequently occurs during the application process for a license. The emergence of novel business models may give rise to inquiries. Certain companies may be exempted from the license requirement under the legislation pertaining to payment services. The Public Service Act incorporates supplementary threshold values that contribute to the assessment of risk profiles and subsequently influence the regulatory burden. Criteria for admission to regulated payment systems or payment schemes could potentially provide support in achieving the objectives of competition, innovation, and financial stability. The issuance of licenses may be subject to several conditions, such as minimum investment criteria, assessments of suitability and integrity, and consideration of current financial situations.

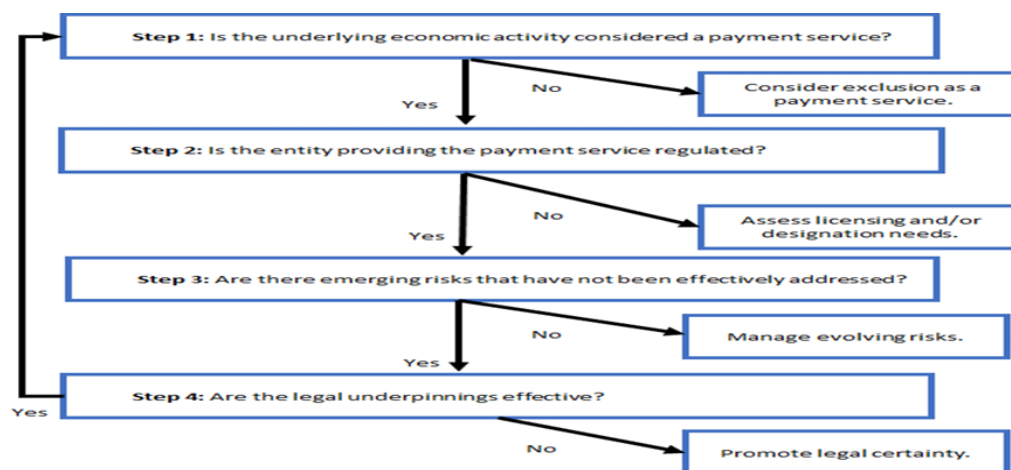


Fig. 2: Analytical Framework for Payments Regulation

The analysis process can be divided into four main stages, as depicted in Figure 2. Despite being presented in a sequential manner, it is plausible that many phases of the framework may need to occur concurrently. To clarify, the process of achieving legal precision may have broad applicability, but the task of identifying and rectifying regulatory deficiencies may require a more sequential approach. The following sections of this article will comprehensively examine each stage. In the subsequent section, an examination will be conducted on the various activities encompassed under the realm of payment services. Section III of the document delves into the topics of licensing and designation. In the fourth section, an examination is conducted on the most notable hazards and their corresponding management strategies. The subject matter pertaining to legal certainty is examined in Section V. The policy concerns pertaining to central banks are deliberated about in Section VI. Section VII concludes.

Fintech companies operating in Jordan are obligated to obtain the necessary licenses and registrations from the pertinent regulatory authorities in accordance with the nature of the financial services they offer. It is crucial to ascertain the pertinent regulatory authority for one's specific fintech undertaking, given the comprehensive oversight responsibilities of the CBJ and the JSC in the realm of financial services.

1.5. Consumer Protection

To safeguard the welfare of their clientele, fintech enterprises must ensure their adherence to consumer protection regulations. This includes the transparent and truthful disclosure of contractual terms and circumstances, the equitable treatment of consumers, and the effective handling of customer complaints and disputes (Rath and Gandhi, 2023). Consumer protection is a significant factor that is highly regarded during the process of price determination. It is based on the annual value of gross transfers made to consumers. The aforementioned index serves as a means to depict the discrepancy between the financial contribution of consumers towards the government's fiscal budget and the price transfers that transpire during the transactional exchange between customers and the domestic producers and importers of the nation (Rana et al. 2023). In some global regions, the responsibility for safeguarding the well-being of consumers is entrusted to entities such as associations and labor unions. A consumer union or association is an entity that advocates for the safety and efficacy of products and services through the utilization of research and the protection of consumer interests (Sugiarto and Disemadi, 2020). The measurement of consumer union or association is based on various dimensions of consumer protection against price volatility. These dimensions include the provision of a sufficient supply of goods to regulate prices, the determination and notification of realistic prices for goods and services, the implementation of punitive laws to address market price adjustments, and the reduction and adjustment of prices through market competition.

2. Theoretical Framework

2.1. Diffusion of Innovation Theory

The theory of Diffusion of Innovation, originally formulated by Everett Rogers, elucidates the process through which novel ideas, goods, and technology disseminate and are embraced by individuals and collectives within a given societal context. This theory exhibits diverse applicability across multiple disciplines. The aforementioned idea is commonly employed in order to comprehend and forecast the uptake of novel technology. This aids technology developers and innovators in discerning potential obstacles and catalysts for adoption. Organizations can enhance the likelihood of successful technology adoption by tailoring their marketing activities based on a comprehensive understanding of the traits exhibited by innovators, early adopters, early majority, late majority, and laggards.

3. Research Methodology

3.1. Research Population and Sampling

The population of this study consisted of all the staff of Frata App, Tamweel Trading Company, Tanda Smart, DareebaTech, and QWQ. The cohort for this study comprised of managerial workers who were employed in different departments from the selected fintech firms. Purposive and convenience sampling, a non-probability sampling approach, was employed in selecting 300 respondents for the study. The response rate was 96.33%, resulting in the retrieval of 289 completed surveys. Among the entire sample of 289 questionnaires, a total of 11 were identified as incomplete and hence omitted from the analysis. A statistical analysis was conducted on a total of 278 questionnaires that were considered valid by the researchers involved in the research conducted in Jordan.

3.2. Research Instruments

The research instrument used for the study was questionnaire. The instrument elicited information on the dependent and independent variables using modified Likert scale of (1932). The research instrument was made up of two sections; A and B. Section A, focused on the personal data of the respondents e.g. age, gender, years of professional experience, job position, and educational background while section B measured the constructs of risk management variables using five items each making up 10 items. Each variable was measured with a 4 points level of internal scale of measurement -Strongly Agreed (SA) (4points), Agreed- (A) (3 points), Disagree-(D) (2 points); Strongly Disagreed (SD)- 1 point if the item was positively worded.

3.3. Measurement of Study Variables

The present study encompassed a range of variables that necessitated precise measurement in order to assess the hypotheses and achieve statistically meaningful findings. The primary objective of the study was to investigate the independent variable of financial technology (FinTech), which was assessed by analyzing two specific variables: governance and policy, data collection, and client protection and obstacles.

4. Data Analyses

4.1. Answering of Research Questions

Research Question One: What is the effect of risk management compliance of fintech firms on licensing and registration?

Table 1: Percentage Analysis of Effect of Risk Management Compliance of Fintech Firms on Licensing and Registration

ITEMS	\bar{X}	SD	Decision
Making sure your firm is properly licensed protects you, your staff, and your customers.	3.02	1.34	Agree
Compliance with licenses and registrations ensures the safety of staff and consumers.	2.96	1.30	Agree
Personal information is kept confidential thanks to registration and licensing compliance.	3.45	1.47	Agree
Customers are more likely to trust a licensed firm.	2.88	1.53	Agree
Registration compliance paves the door for future market investments.	3.33	1.41	Agree
THE OVERALL INDEX	3.13	1.41	Agree

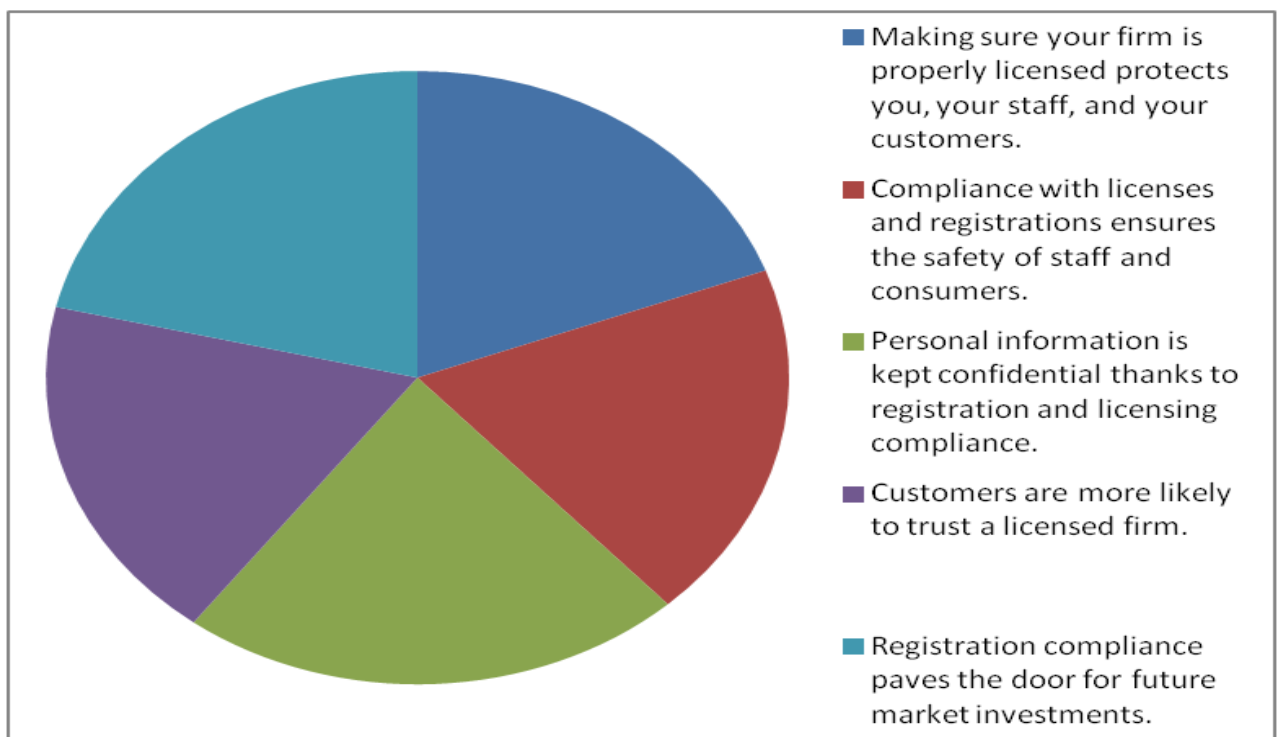


Fig. 3: stylized Analysis of Risk Management Compliance of Fintech Firms on Licensing and Registration

Table 1 and the above displays the research study's findings about the compliance of fintech companies in risk management, specifically in relation to licensing and registration. These findings are based on the perceptions of the study participants. The collective index had a mean value of 3.13 and a standard deviation of 1.41. According to the findings of Item 1, it can be observed that the statement "The assurance of maintaining compliance with registration and licensing prerequisites ensures the preservation of personal data confidentiality" has obtained the highest mean score of 3.33. In contrast, the assertion that "Customers are more inclined to place trust in a company that holds a license" exhibits the lowest mean score of 1.47 and a standard deviation of 1.30. Fintech companies operating in Jordan demonstrate compliance with license and registration obligations in order to proficiently mitigate the potential risks and uncertainties.

Research Question Two: What is the of risk management compliance of fintech firms on consumer protection.

Table 2: Percentage Analysis of Risk Management Compliance of Fintech Firms on Consumer Protection

ITEMS	\bar{X}	SD	Decision
Compliance with consumer protection laws ensures markets operate for both firms and consumers.	3.69	1.38	Agree
Fintech customers need access to reliable, impartial information about the goods and services they buy.	3.08	1.56	Agree
Compliance allows customers to make decisions based on their interests while also protecting them from being abused or misled by fintech operators.	3.23	1.58	Agree
Consumer policy compliance educated consumers about the quality, quantity, potency, purity, standard, and pricing of products and services.	3.13	1.50	Agree
Consumer protection compliance ensured access to a wide range of products and services at reasonable rates.	2.64	1.54	Agree
THE OVERALL INDEX	3.16	1.51	Agree

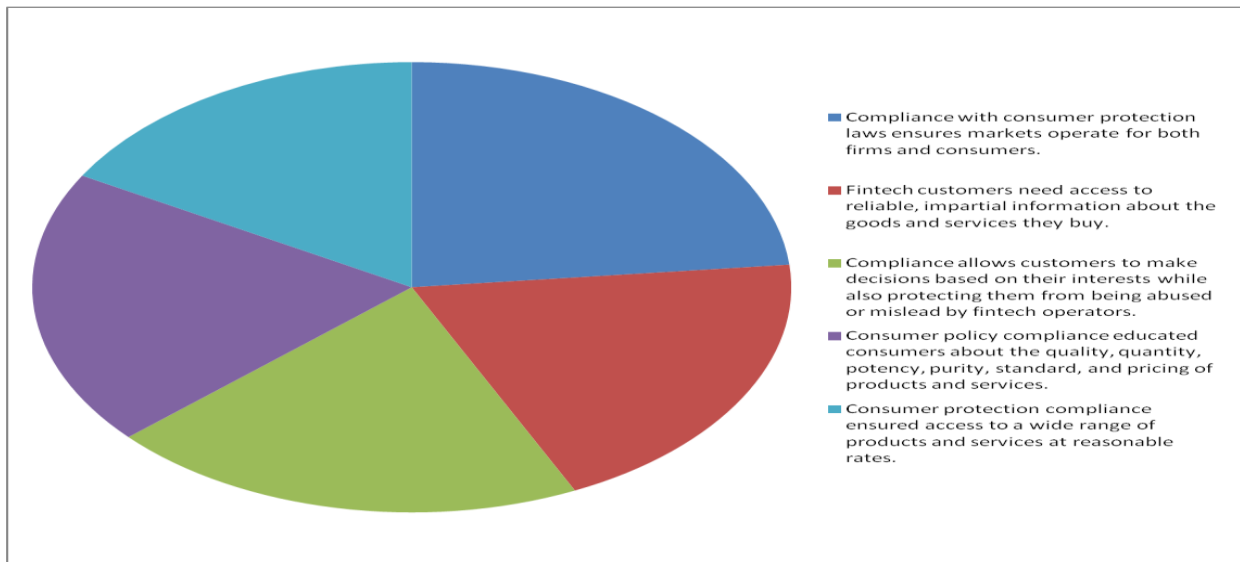


Fig. 4: stylised fact of risk Management Compliance of Fintech Firms on Licensing and Registration

The statistical examination provided in Table 2 and figure above reveals that the average score of the total index is 3.16, with a standard deviation of 1.56. These findings suggest a favorable association between the compliance of fintech companies in Jordan with risk management practices and the protection of consumers. Question item (1) yielded the highest average score of 3.69, suggesting that participants expressed agreement with the assertion that adherence to consumer protection regulations contributes to the efficient operation of markets, benefiting both enterprises and consumers. In contrast, it is noteworthy that question item (5) yielded a comparatively lower average score. This finding implies that respondents exhibited a reduced inclination to concur with the proposition that adherence to consumer protection regulations ensures the availability of a wide array of products or services at competitive costs. Fintech companies operating within the jurisdiction of Jordan demonstrate compliance with risk management measures in order to ensure consumer safety.

4.2. Hypotheses Testing

Hypothesis One: There is no significant effect of risk management compliance of fintech firms on Licensing and Registration.

Table 3: Pearson Product Moment Correlation Analysis of Risk Management Compliance of Fintech Firms on Licensing and Registration

Variable	$\sum x$	$\sum x^2$	$\sum xy$	r
Risk management compliance (x)	9011	270655		

Licensing and registration (y)	9113	58989	134663	0.94*
Consumer protection (y)	9113	58989	140162	0.83*

*Significant at 0.025 level; df =276; N =278; critical r-value = 0.086

The r-value obtained is presented in Table 3 and was found to be 0.94 and 0.83 respectively. The statistical significance of this value was assessed by comparing it to the critical r-value (0.086) at a significance level of 0.025 with 276 degrees of freedom. The correlation coefficient of 0.94 was found to exceed the critical value of 0.086. Therefore, the outcome was statistically significant. Consequently, the outcome indicates a noteworthy correlation between the adherence of fintech companies to risk management regulations and their licensing and registration status as well as consumer protection in Jordan.

5. Discussion of Finding

Result of analysis shows that there is a high positive correlation between risk management compliance of financial technology firms operating in Jordan. The corresponding hypotheses test also validates the result that there is a significant correlation between risk management compliance of financial technology firms operating in Jordan. This finding is in line with Iman (2020) who claim that fintech is a multifaceted and diversified phenomenon that can develop in multiple manifestations. There is a divergence among scholars regarding their emphasis on the innovative aspects of financial technology, with some placing greater importance on the advent of new markets and commodities. There are those that exhibit concerns over compliance with regulations and legislation, while others place greater emphasis on subtleties and technological aspects. The statistical significance of the acquired result was used as the reason for rejecting the null hypothesis and accepting the alternative hypothesis.

6. Conclusion

The study on risk management compliance of financial technology (FinTech) firms operating in Jordan underscores the critical importance of sound risk management practices and adherence to regulatory frameworks in this burgeoning sector. The FinTech industry in Jordan has witnessed remarkable growth, driven by a tech-savvy population, supportive government policies, and a dynamic startup ecosystem. Conclusively, the FinTech industry in Jordan holds tremendous potential for innovation and financial inclusion. However, this potential can only be realized by effectively managing risks and complying with regulatory frameworks. Jordan's FinTech firms can thrive in this dynamic sector by embracing cybersecurity, maintaining strict compliance, safeguarding customer trust, and balancing innovation with risk management. As FinTech continues to shape the financial landscape of Jordan, these firms are poised to play a pivotal role in the country's financial future, and their commitment to risk management compliance will be instrumental in their long-term success and the growth of the sector.

6.1. Recommendations

Based on the findings and data analysis of the study, the following recommendations were made: Finect firms should collaborate with cybersecurity experts to identify and mitigate vulnerabilities by prioritizing cybersecurity measures, including encryption, intrusion detection systems, and regular security audits.

Employ legal experts with knowledge of Jordan's regulatory landscape to ensure ongoing compliance. This should involve establishing dedicated compliance teams or outsourcing regulatory compliance functions.

Implement robust data protection and privacy measures, complying with international best practices such as GDPR, to maintain customer trust and adhere to legal requirements.

6.2. Implication of Findings

The implications of findings on risk management compliance of financial technology (FinTech) firms operating in Jordan are far-reaching and hold significance for various stakeholders, including regulatory bodies, FinTech firms themselves, consumers, and the broader financial services industry. These implications shed light on the challenges, opportunities, and the way forward for the sector. Here are some key implications based on the findings:

Findings may highlight the need for regulatory bodies in Jordan to continuously evolve and adapt their frameworks to keep pace with the rapidly changing FinTech landscape. This may involve crafting more detailed guidelines, refining existing regulations, or introducing new rules to address emerging risks.

The findings can underscore the importance of proactive risk management practices for FinTech firms. This includes investing in robust cybersecurity measures, operational resilience, and risk assessment strategies to mitigate threats and vulnerabilities effectively in the future.

The results also encourage FinTech companies to collaborate with traditional financial institutions to leverage their experience and resources. This could result in the development of stronger compliance programs and risk management strategies.

Implications of the study also revolve around strengthening consumer trust and protection. FinTech firms may need to focus on transparent and ethical business practices, ensuring that customer data is handled securely, and that consumers are well-informed about the risks and benefits of digital financial services.

The implications of findings on risk management compliance of FinTech firms in Jordan are essential for shaping the future of the industry. They can guide regulatory reforms, inform the strategies of FinTech firms, and ultimately contribute to the sector's growth, sustainability, and the protection of consumer interests.

6.3. Suggestions for Further Studies

The study made possible research directions related to risk management in Jordan's financial technology sector:

Study examining regulatory framework efficiency of Jordan's current regulation for financial technology (fintech) and note any gaps or places where it could be strengthened.

Analyze how fintech risk management techniques are impacted by regulations and recommendations from regulators and consider the unique problems that regulators in Jordan may face.

Further study should analyze the fintech industry's current risk assessment models and tools, and suggest improvements or market-specific methods for measuring risk.

Lastly, look into new dangers in Jordan's fintech sector, such as those posed by the introduction of innovative technology (such AI and blockchain) and financial services by analyzing how these risks

might affect fintech businesses and suggest preventative risk management measures.

References

- Al Tarawneh, E., Alqaraleh, M. H., Ali, B., & Bani Atta, A. (2023). The Impact of the Efficiency and Effectiveness of Electronic Accounting Information Systems on the Quality of Accounting Information. *Information Sciences Letters*, 12(3), 1685-1692. doi: <http://dx.doi.org/10.18576/isl/120352>.
- Al Asma'a Al-Amarneh, H. Y., Atta, A. B., & Khalaf, L. (2023). Nexus Between Information Technology Investment and Bank Performance: The Case of Jordan. *Bank and Bank System*, 18(1), 68-76.
- Al-Araj, R. E. E. M., Haddad, H. O. S. S. A. M., Shehadeh, M. A. H. A., Hasan, E., & Nawaiseh, M. Y. (2022). The effect of artificial intelligence on service quality and customer satisfaction in Jordanian banking sector. *WSEAS Transactions on Business and Economics*, 19(12), 1929-1947.
- Alawadhi, S. A., Zowayed, A., Abdulla, H., Khder, M. A., & Ali, B. J. (2022). Impact of Artificial Intelligence on Information Security in Business. Paper presented at the 2022 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETISIS).
- Al-Gasaymeh, A. S., Almahadin, H. A., Shehadeh, M., Migdady, H., & Atta, A. A. B. (2023). Investigating the Role of Artificial Intelligence in Embedded Finance on Improving a Nonfinancial Customer Experience. Paper presented at the 2023 International Conference on Business Analytics for Technology and Security (ICBATS).
- Ali, A., Ali, B. J., & Fatima, N. (2023). Pre and Post-COVID-19 Financial Performance of Oil and Gas Companies: An Absolute and Relational Study of Financial Variables. *International Journal of Sustainable Development and Planning*, 18(1), 69-77. doi: doi.org/10.18280/ijstdp.180107.
- Almahadian, E. Alhwamdeh, L., Al_hazimeh, A., & Al-Gasawneh, J. (2023) Jordan, H. Y., Atta, A. B., & Khalaf, L. (2023). Nexus Between Information Technology Investment and Bank Performance: The Case of Jordan. *Banks and Bank Systems*, 8(1), 68-76.
- Alrabei, A. M., Al-Othman, L. N., Al-Dalabih, F., Taber, T. A., & Ali, B. (2022). The Impact of Mobile Payment on the Financial Inclusion Rates. *Information Sciences Letters*, 11(4), 1033-1044. doi:10.18576/isl/110404
- Alshirah, M., Al-Dalabih, F., Alshira'h, A., Alsqour, M., & Ali, B. (2022). The Relationship Between Tax Knowledge and Compliance: An Empirical Study. *Information Sciences Letters*, 11(5), 393-1401. doi:10.18576/isl/110508
- Atichasari, A. S., Kristanti, N. H., & Wulandari, S. S. (2023). Analysis of Quality and Implementation of Sharia Financial Services Based on Financial Technology in Indonesia.
- Bani Atta, A., Ali Mustafa, J., Al-Qudah, S., Massad, E., & Ahmad, A. (2023). The effect of macroprudential regulation on banks' profitability during financial crises [Specialissue]. *Corporate Governance and Organizational Behavior Review*, 7(2), 245-258.
- Barefoot, J. A. (2020). Digitizing Finance: FinTech as A solution for consumer financial health and inclusion. M-RCBG Associate Working Paper Series (149).
- Baur, D. G., & Dimpfl, T. (2021). The volatility of Bitcoin and its role as a medium of exchange and a store of value. *Empirical Economics*, 61(5), 2663-2683.
- Buchak, G., Matvos, G., Piskorski, T., & Seru, A. (2018). Fintech, regulatory arbitrage, and the rise of shadow banks. *Journal of financial economics*, 130(3), 453-483.

Coetzee, J. (2018). Strategic implications of Fintech on South African retail banks. *South African Journal of Economic and Management Sciences*, 21(1), 1-11.

Foud Ali, A., Zowayed, S. I., Showaiter, D. A., Khder, M. A., & Ali, B. J. (2022). Artificial intelligence's potential on Bahrain's labour market. Paper presented at the 2022 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETSI).

Gaviyau, W.; Sibindi, A.B. (2023) Global Anti-Money Laundering and Combating Terrorism Financing Regulatory Framework: A Critique. *J. Risk Financial Manag.* 2023, 16, 313. <https://doi.org/10.3390/jrfm16070313>

Ha, L. T. (2023). Dynamic connectedness between FinTech innovation and energy volatility during the war in time of pandemic. *Environmental Science and Pollution Research*, 1-15.

Hasan, H., Oudat, M. S., Alsmadi, A. A., Nurfahasdi, M., & Ali, B. (2021). Investigating the causal relationship between financial development and carbon emission in the emerging country. *Journal of Governance and Regulation*/Volume, 10(2), 55-62. doi: <https://doi.org/10.22495/jgrv10i2art5>.

Hassan, W. M., Aldoseri, D. T., Saeed, M. M., Khder, M. A., & Ali, B. J. (2022). Utilization of Artificial Intelligence and Robotics Technology in Business. Paper presented at the 2022 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETSI).

Hezabr, A. A., Qeshta, M. H., Al-Msni, F. M., Jawabreh, O., & Ali, B. J. (2023). Audit committee characteristics and firm performance: Evidence from the insurance sector in Oman.

Huong, A., Puah, C.-H., & Chong, M.-T. (2021). Embrace Fintech in ASEAN: A Perception through Fintech Adoption Index. *Research in World Economy*, 12(1), 1.

Johnson, M. J., Ben-David, I., Lee, J., & Yao, V. (2023). FinTech Lending with LowTech Pricing (No. w31154). National Bureau of Economic Research.

Khiaonrong, T & Terry, G, (2020). "Fintech and Payments Regulation: Analytical Framework," IMF Working Papers 2020/075, International Monetary Fund.

Miskam, S., Yaacob, A. M., & Rosman, R. (2019). Fintech and its impact on Islamic fund management in Malaysia: a legal viewpoint *Emerging Issues in Islamic Finance Law and Practice in Malaysia* (pp. 223-246): Emerald Publishing Limited.

Rana, A. A., Zulfiqar, F., & Masuad, S. (2023). The Legal and Regulatory Framework for Cryptocurrency and Fintech in Pakistan: Challenges and Policy Recommendations. Available at SSRN 4426294.

Sajid, R., Ayub, H., Malik, B. F., & Ellahi, A. (2023). The Role of Fintech on Bank Risk-Taking: Mediating Role of Bank's Operating Efficiency. *Human Behavior and Emerging Technologies*, 2023.

Sakirovic, B. A. (2023). Adapting to Fintech Disruption: Comparative Case Study of Banking Strategies from Developed and Emerging Countries.

Saleh, M., Jawabreh, O., Jaber, J., Garaibeh, A., Ali, B., & Ali, A. (2023). The Impact of Financial Determinants on Bank Deposits Using ARDL Model. *Journal of Statistics Applications & Probability*, 12(2), 441-452. doi: <http://dx.doi.org/10.18576/jsap/120210>.

Shehadeh, M., Almohtaseb, A., Aldehayyat, J., & Abu-AlSondos, I. A. (2023a). Digital Transformation and Competitive Advantage in the Service Sector: A Moderated-Mediation Model. *Sustainability*, 15(3), 2077.

Shehadeh, M., Almajali, D., Abu-AlSondos, I. A., Alkhwaldi, A. F., & Al-Gasaymeh, A. S. (2023, b). Digital Transformation and its Impact on Operational Efficiency and Competitive Advantage in Islamic

Banks. In 2023 International Conference on Business Analytics for Technology and Security (ICBATS) (pp. 1-6). IEEE.

Sugiarto, I., & Disemadi, H. S. (2020). Consumers Spiritual Rights in Indonesia: A Legal Study of Sharia Fintech Implementation in The Consumers Protection Perspective. *Journal IUS Kajian Hukum dan Keadilan*, 8(3), 437-452.

Thuneibat, N. S. M., Ali, B., Alqaraleh, M. H., & Thneibat, H. (2022). The Mediating Role of Innovation on the Relationship Between Information Technologies and Reducing Tax Evasion. *Information Sciences Letters*, 11(2), 13-23. doi:10.18576/isl/110505.

Urumsah, D., Ispridevi, R. F., Nurherwening, A., & Hardinto, W. (2022). Fintech adoption: Its determinants and organizational benefits in Indonesia. *Jurnal Akuntansi dan Auditing Indonesia*, 88-101.

USAID (2017) digital finance. <https://2017-2020.usaid.gov/sites/default/files/documents/15396/Digital%20Finance%20Two%20Pager-7-16-14.pdf>

Utami, A. F., Ekaputra, I. A., & Japutra, A. (2021). Adoption of FinTech products: a systematic literature review. *Journal of Creative Communications*, 16(3), 233-248.

Van Der Voort, De Bruijne, & Steenhuisen, (2019) Roles of Risk Managers: Understanding How Risk Managers Engage in Regulation. *European Journal of Risk Regulation*, 10(2), 376-392. doi:10.1017/err.2019.24