

The Impact of Fintech Startups on Financial Institutions' Performance and Default Risk

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Abstract: *Introduction: It is highly important to understand the role of financial technology-based startups in the field of financial support. Thus, the study here aimed to investigate the job of fintech solutions or startups in the performance management of financial institutions and the process they use to mitigate risk in financial matters.*

Literature Review: The economic contraction was most likely the cause of the decline in the value of investments. Understanding the importance of operational efficiency, traditional financial institutions have embraced technology advancements to automate repetitive tasks, lower errors, and save costs. As a result, overall performance and cost-effectiveness have increased.

Methodology: The method of data collection that has been selected to investigate the roles that fintech startups play in reducing financial risk is "primary quantitative." As a result, answers to a questionnaire consisting of 13 questions were gathered from 55 people.

Findings and analysis: The statistical analysis revealed that the majority of responses were either in agreement or strongly in agreement. Given that the Pearson Correlation value is greater than 0.8, there is a strong correlation between each variable. Every hypothesis formulated during the initial stage of the study has been approved.

Discussion: Fintech, which is a combination of finance and technology, uses cutting-edge methods and instruments to improve the overall effectiveness and resilience of risk management frameworks. However, fintech startups face a variety of obstacles along the way, but they are also presented with opportunities for innovation and growth on their optimization journey

Conclusion: The adoption of fintech by financial institutions is expected to create a dynamic risk management landscape that can adjust to new opportunities and challenges in the constantly changing financial sector. The primary quantitative method was selected in order to collect the pertinent data for this investigation. Through statistical analysis, the gathering of quantitative data can assist in projecting real-time information.

Keywords: Fintech startups, financial aids, regulation framework, blockchain, international financial development

I. INTRODUCTION

Technological invention has changed the working system in every field and helped each field to grow in a positive and faster way. It can be seen from the explanation of, de Mariz (2020), that the use of technological solutions has helped in increased access to enormous resources, saving time and cost to perform any task. In the process of improving the functional area of financial matters of nations, the fintech startups have provided proper solutions with transparent information to the people (Fabris, 2022). Financial technology, or fintech for short, is the application of technology to innovative financial services and solutions. According to, Kabulova & Stankevičienė, (2020), fintech startups are businesses that use technology to improve and disrupt different parts of the conventional financial sector. These startups frequently concentrate on industries like insurtech, robo-advisors, blockchain, digital payments, and lending.

Figure 1 has highlighted the number of fintech startups across the globe from 2018 to 2023. It can be seen that the United states of America has the highest number of fintech or financial technology startups worldwide as of May 2023, with 11,651 startups in this region (Statista; 2023). Comparatively, there were 5,061 fintech startups in the Asia Pacific

region and 9,681 in the EMEA which is in the Europe, the Middle East, and Africa region (Statista, 2023). When it came to the number of fintech unicorns worldwide in 2023, the United States led the pack with almost five times as many as the United Kingdom, which came in second (Statista, 2023).

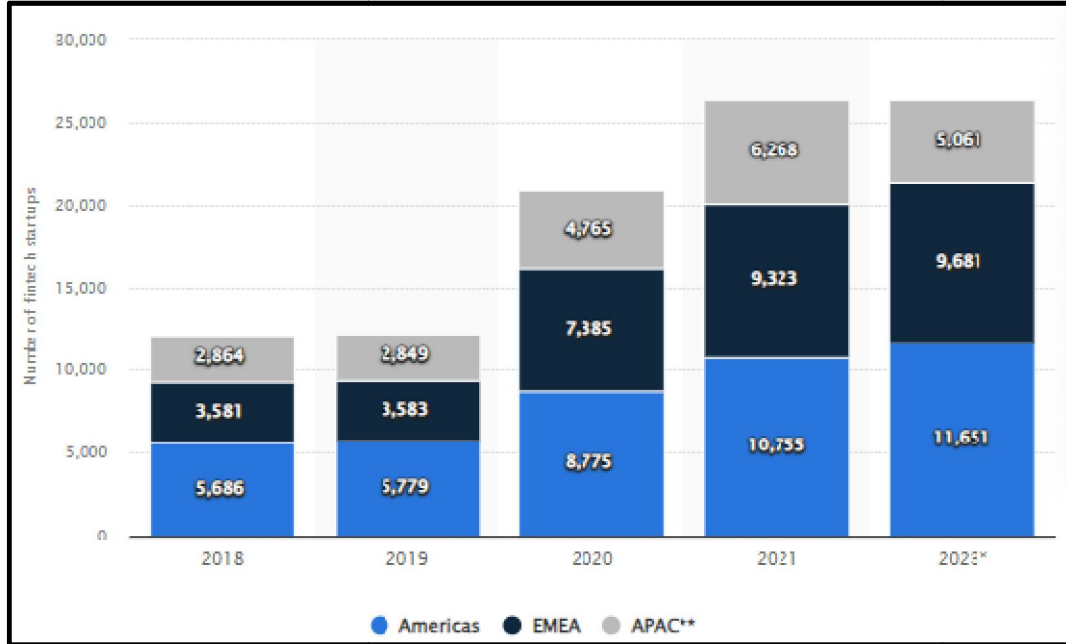


Figure 1: Fintech startups across the globe from 2018 to 2023

(Source: Statista, 2023)

The rapid growth of technology has helped in optimizing business processes which eventually increased the effectiveness of the risk management process. According to, Jarvis & Han (2021) the development of fintech solutions has found a fertile ground for expansion due to the rapid advancement of technology, internet accessibility and cloud computing. The rise of fintech startups has helped people access financial services in an easier, more complex manner with proper maintenance of safety and efficiency of the tools. The changing lifestyle of people has crafted a sense of digitalization in all essential areas. As opined by, Burke (2021), consumers today, especially the younger ones, are used to seamless, digital experiences in every area of their lives, including banking. Fintech companies have benefited from this change in customer behavior by providing cutting-edge, user-focused solutions that meet modern standards.

In comparison to traditional financial institutions, fintech has helped in lowering overhead costs. Fintech startups are able to pass on these savings to customers by streamlining operations and cutting infrastructure costs thanks to their digital-first strategy (Mishchenko et al. 2021). A broad spectrum of customers find fintech solutions appealing due to their cost-effectiveness. It can also be seen that fintech companies are now able to make data-driven decisions thanks to the availability of enormous amounts of data and sophisticated analytics tools (Senyo & Osabutey, 2020). They can then better evaluate risk, provide tailored financial products, and personalize services as a result. A favorable environment for startups has been created by certain regulatory environments that are now more receptive to fintech innovation (Rauniyar et al. 2021).

In order to promote innovation while upholding consumer protection, regulatory sandboxes, offer a regulated setting for testing new goods and services. This has been established in a number of locations across the globe to solve financial crises and increase the efficiency of people.

Aim

It is highly important to understand the role of financial technology-based startups in the field of financial support. Thus, the study here aimed to investigate the job of fintech solutions or startups in the performance management of financial institutions and the process they use to mitigate risk in financial matters.

Objectives

- **RO1:** To identify the impact of fintech solutions on the performance of financial institutions
- **RO2:** To discover the way fintech solution has improved the risk management process in financial matters
- **RO3:** To analyze the challenges that appear during the optimization of fintech startup initiatives
- **RO4:** To address the challenges through proper mitigation strategies in order to increase optimization of fintech solutions

Research Questions

- **RQ1:** What is the impact of fintech solutions on the performance of financial institutions?
- **RQ2:** How have fintech solutions improved the risk management process in financial matters?
- **RQ3:** How do challenges appear during the optimization of fintech startups?
- **RQ4:** What are the ways of addressing the challenges through proper mitigation strategies in order to increase the optimization of fintech solutions?

Hypothesis

Hypothesis development is the process of establishing a relationship between two variables based on fundamental concepts. One dependent variable and a number of independent variables are needed to formulate a hypothesis.

H1: Fintech startup initiatives and financial firms' business growth are strongly correlated.

H2: Tools for technological advancement and reduced risk in financial services are positively correlated.

H3: The proactive linkage can be observed between the financial risk mitigation and rapid growth of digital money transaction

Financial technology or Fintech has been highly impactful for solving financial issues and providing strength to a number of financial institutions. The job of this study is to evaluate the role of financial technology or fintech in increasing the efficiency of financial institutions. The vast discussion of the vital components regarding the topic is able to help fellow researchers or financial workers understand the way fintech needs to be used and managed in businesses. It can be seen that investors looking for high-growth opportunities have shown a great deal of interest in the fintech sector (Beck, 2020). Fintech startups are receiving investments from venture capital firms, private equity firms, and even traditional financial institutions, which supply the funds required for their growth and development. Thus, this study holds a valuable purpose of informing others about the role of fintech and the way it can change financial dealings in businesses.

II. LITERATURE REVIEW

The impact of fintech startups on the performance of financial institutions

In recent years, fintech companies have become more and more prevalent in daily life, with an increasing number of them starting up each year. Fintech startups have the potential to change the working efficiency of the financial industry in an effective way (Pujakusum et al. 2019). The industry has brought in a new wave of innovation that has challenged and enhanced traditional financial institutions. There are a lot of different aspects to this innovation that have an impact on how well these institutions perform (Irawati et al. 2019). The majority of fintech businesses are based in China and the United States, which also housed seven of the top ten largest fintech businesses globally (Statista, 2023). The Irish payment processing platform Stripe was the most valuable fintech unicorn in the world in 2022, despite the dominance of the United States and China.

Figure 2 represents the percentage of T investments of fintech startups in North America and Europe from 2013 to 2022. It was anticipated according to the graph that banks in North America would be able to allocate as much as 40% of their 2020 IT budget to new technology. The rate is in comparison with European banks is nearly 30% (Statista, 2023). Bank spending on the new technology is expected to increase in both North America and Europe in the next years.

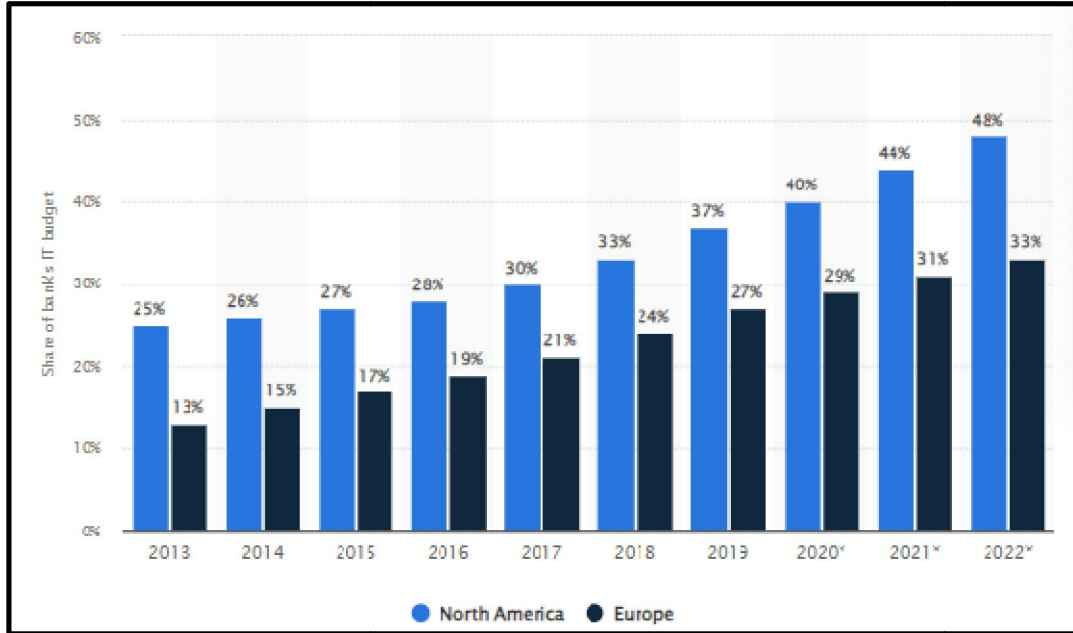


Figure 2: Percentage of banks' IT expenditures on new technologies from 2013–2022 in regions
(Source: Statista, 2023)

The rise of fintech startups has increased the competition level in the financial industry across the globe. According to, Senyo et al. (2020), the provision of fintech startups of responsive and client-focused solutions has forced established financial institutions to reconsider their approaches and improve their service provisions. Financial institutions have innovated in areas like digital banking, payment systems, and lending practices as a result of this competitive environment. The rapid use of technological solutions in financial operations has improved the banking and investment courses overseas such as the use of cryptocurrencies. It can be seen that fintech startups are well known for prioritizing seamless user experiences and customer centricity (Haddad & Hornuf, 2021). Traditional financial institutions have been forced to prioritize customer satisfaction as a result of this shift in focus, which has improved online interfaces, mobile applications, and overall service delivery. The end effect is an improvement in convenience and user experience across the industry.

Role of fintech solution in improving the risk management process in financial matters

Over the past ten years, there has been a significant increase in investment in the fintech sector, with global investment value reaching an all-time high in 2021. However, investment activity significantly decreased in 2022, with people experiencing a particularly significant decline in investment value (Statista, 2023). The economic contraction was most likely the cause of the decline in the value of investments. As per the comment of, Haddad & Hornuf (2023) fintech startups frequently use cutting-edge technologies, like blockchain and artificial intelligence, to simplify workflows and save operating expenses. Understanding the importance of operational efficiency, traditional financial institutions have embraced technology advancements to automate repetitive tasks, lower errors, and save costs. As a result, overall performance and cost-effectiveness have increased.

Through their outreach to marginalized communities, fintech startups have been instrumental in advancing financial inclusion. Here, Fayda et al. (2020), mentioned, that fintech startups have increased access to financial resources with cutting-edge goods and services like peer-to-peer lending and mobile banking. In response, established financial institutions have implemented inclusive strategies to access developing markets and serve a wider range of clientele. Since fintech companies frequently operate in fast-paced environments that may outpace current regulatory frameworks, the rise of fintech has presented regulatory challenges (Izzo, 2020). Financial institutions have had to improve their risk management procedures in order to handle the complexities brought about by new technologies and

adjust to changing regulatory frameworks. Fintech startups and established institutions working together have become a popular tactic to successfully negotiate these regulatory environments.

Fintech solutions process enormous volumes of data in real time by using AI algorithms and sophisticated data analytics. These technologies assist financial institutions in identifying patterns, trends, and possible hazards by evaluating both historical and current data (Sari, 2020). Predictive analytics powered by AI makes risk assessments more precise, enabling organizations to proactively foresee and address possible financial threats. Fintech solutions use advanced machine learning algorithms-based fraud detection tools to find anomalies and unusual patterns in transaction data. These systems have the ability to identify possible fraudulent activity in real-time, stopping illegal transactions and shielding financial institutions and their clients from suffering financial losses.

The decentralized and impenetrable ledger known as blockchain improves the security and openness of financial transactions. Blockchain-based fintech solutions can offer an unchangeable, safe record of financial transactions, lowering the possibility of fraud and maintaining the integrity of the financial system (Fernando & Dharmastuti, 2021). RegTech, a subset of fintech solutions, tackles the difficulties involved in regulatory compliance. Financial institutions can comply with evolving rules and regulations by using these technologies to automate compliance procedures. Fintech solutions lower the possibility of regulatory breaches and the fines that go along with them by automating regulatory reporting, risk assessments, and compliance checks.

Challenges that appear during the optimisation of fintech startups

The fintech industry is surrounded by a complex web of regulatory compliance, which is the first of many challenges. Here, Coryanata et al. (2023), mentioned that fintech companies have to carefully follow a maze of financial rules, data privacy laws, and industry-specific protocols. It takes a lot of resources and a sophisticated grasp of legal nuances to navigate this complex regulatory environment, which frequently creates a significant barrier to entry and growth. According to, Soewarno & Tjahjadi (2020), since money transfers and customer data are inherently sensitive, security concerns are a major concern in the fintech industry. The persistent threat posed by cybersecurity threats calls for significant investments in strong defences.

In order to protect the integrity of their platforms and the confidence of their users, fintech startups need to strengthen their infrastructure against cyberattacks. In this context, Doran et al. (2022), mentioned that gaining and retaining the trust of customers becomes a critical issue. Overcoming ingrained scepticism is necessary to persuade people to embrace new technologies and trust startups with their financial transactions. As opined by, Khatib et al. (2022) since user trust is a key component of success in the financial services industry, it becomes imperative to establish a reputable brand through open communication and keeping your word. Fintech startups continue to have serious concerns about funding access, especially in their early phases of development. Here, Malik et al. (2020), explained fintech operations require strategic financial backing. The reason for such demand is their capital-intensive nature, which includes expenses related to technology, marketing, compliance, and compliance.

In order to maintain continued growth and optimisation, obtaining finance from venture capital, angel investors, or forming strategic alliances becomes essential. Another challenge facing fintech startups is technological integration as they work to integrate with legacy systems and the current financial infrastructure (Budiasni et al. 2023). It is essential to have seamless communication with established organizations, payment networks, and regulatory reporting systems. As commented by, Patrick et al. (2023), resolving compatibility problems guarantees a more seamless adoption process and encourages cooperation with established financial players. One recurring theme is the search for talent, as fintech startups fight for qualified workers in a market full of options. Here, Hermawan et al. (2021) commented that it has never been easy to find experts in fields like software development, cybersecurity, and data science. Maintaining talent is crucial for maintaining operational excellence and innovation.

As fintech startups map out their growth paths, scalability problems are looming. An agile workforce and scalable technology infrastructure are necessary to handle growing user traffic and transaction volumes (Haddad & Hornuf, 2021). Growing while maintaining performance is a delicate task that needs to be planned and carried out with great care. The environment for fintech startups is becoming increasingly competitive due to market saturation (Mishchenko et al. 2021). A distinctive value proposition and ongoing innovation are necessary to stand out in a crowded market. The startup's flexibility, agility, and responsiveness to shifting customer needs will determine its ability to stand out

from the competition and gain market share. As fintech startups struggle with the responsibility of handling sensitive personal and financial information, data privacy concerns add yet another level of complexity (Fernando & Dharmastuti, 2021). Respecting strict data protection laws is essential. Any breaches of data privacy could have serious ramifications, such as harm to one's reputation and legal ramifications.

III. METHODOLOGY

The method of data collection that has been selected to investigate the roles that fintech startups play in reducing financial risk is "primary quantitative." As a result, answers to a questionnaire consisting of 13 questions were gathered from 55 people. The purpose of these questions was to investigate various facets of the subject matter. They comprised three demographic inquiries aimed at understanding the characteristics of the respondents, as well as ten questions specifically connected to the effect of fintech startups on the performance and default risk of financial institutions. The study aimed to obtain a representative sample of 55 people in order to provide valuable perspicuity in the form of worker engagement within the target population. This data-gathering method's quantitative nature makes statistical analysis possible, enabling the identification of patterns, trends, and correlations within the dataset. These conclusions can then be used to guide decisions and carry out plans that increase fintech startups' operational efficiency. Strong data analysis capabilities are provided by SPSS, enabling a thorough examination of the dataset.

It enables effective data import, use, and interpretation for users. It provides various statistical procedures and tools that make it possible to extract useful perspicuity from unprocessed data (Pandey & Pandey, 2021). This skill is necessary for identifying trends, drawing meaningful conclusions from research or business data, and making well-informed decisions. In the field of research, SPSS exists as one of the most useful tools to analyse statistical information. Researchers from a variety of fields use SPSS to analyze data from studies and experiments (Newman & Gough, 2020). The software's extensive statistical features facilitate the analysis of complex relationships within datasets, regression testing, and hypothesis testing. It has been essential in advancing knowledge and fostering the use of evidence in decision-making.

IV. FINDINGS AND ANALYSIS

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	33	60.0	60.0	60.0
	Male	11	20.0	20.0	80.0
	Prefer not to say	11	20.0	20.0	100.0
Total		55	100.0	100.0	

Table 1: Gender

11 men and 33 women make up the total number of participants, according to the pie chart above, which is shown in Table 1. 11 additional respondents out of the total did not want to reveal their gender.

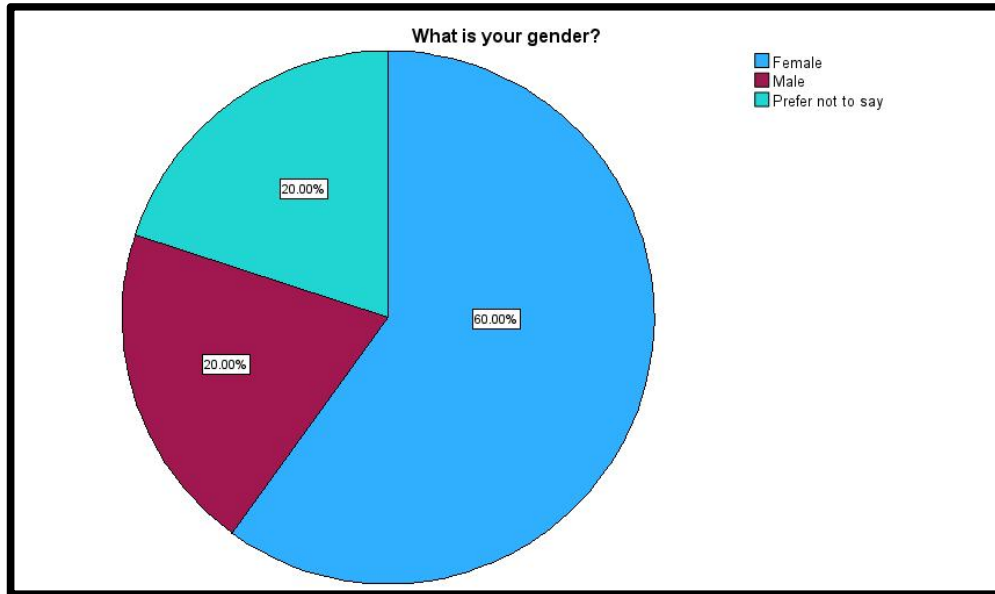


Figure 3: Gender of participants

Out of all the participants, 20% are men and 60% are women, according to the pie chart shown in figure 3. Additionally, 20% of all respondents expressed a desire to remain anonymous regarding their gender.

Age group

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21 to 35 years	21	40.0	40.0	40.0
	36 to 40 years	25	46.0	46.0	46.0
	41 to 55 years	5	12.0	12.0	12.0
	Above 55	4	3.5	3.5	3.5
	Total	55	100.0	100.0	

Table 2: Age of participants

Table 2 shows that 21, 25, 5, and 4 participants fall into the following age groups: between 21 and 35 years old, between 36 and 40 years old, between 41 and 55 years old, and older than 55 years old.

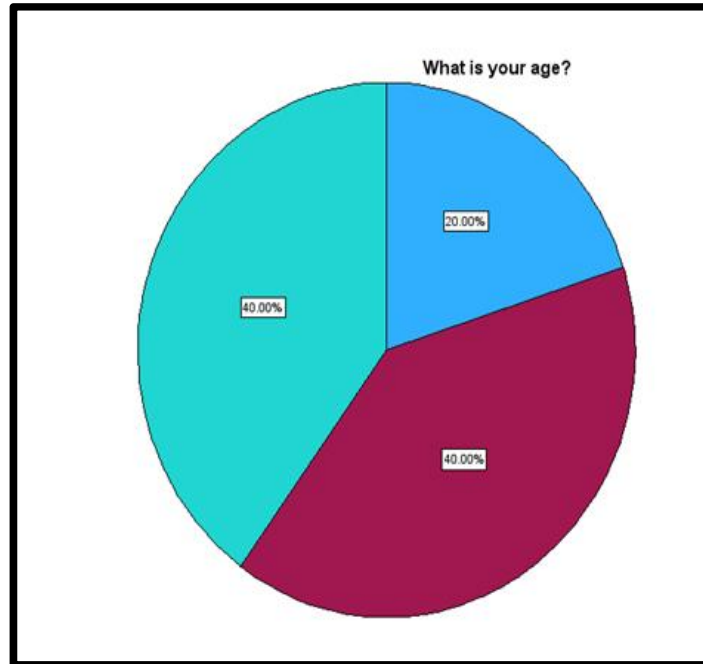


Figure 4: Age of participants

According to graphical representation 4 above, the age groups between 21–30 years old, 31–40 years old, 41–50 years old, and more than 50 years old, respectively, account for 20%, 30%, 25%, and 25% of all participants.

Income range

Income Range					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25000-35000	14	28.1	28.1	28.1
	36000-40000	28	46.0	36.0	36.0
	41000-55000	13	28.0	28.0	28.0
	Above 55000				
	Total	55	100.0	100.0	

Table 3: Income range

Table 4 illustrates that 14, 28 and 13 respondents belong to the income range of the mentioned options.

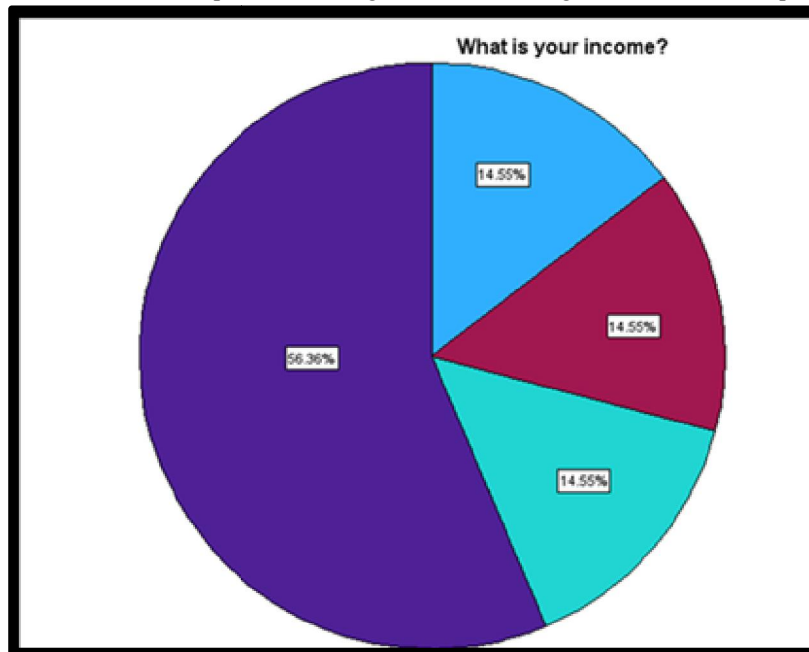


Figure 5: Income Range

14.55% participants belong to the both 25000-30000 and above 550000 income range group. 56.36% belonged to the income range of 36000-40000.

Descriptive Analysis

Descriptive Stat					
	N	Minimum	Maximum	Mean	St
	Statistic	Statistic	Statistic	Statistic	
DV	55	4.00	9.00	7.2000	
IV1	55	3.00	9.00	7.4364	
IV2	55	3	5	4.04	
IV3	55	2	5	4.20	
IV4	55	3	5	4.09	
Valid N (listwise)	55				

Table 4: Descriptive data analysis

In order to produce numerical and statistical concepts and a summary of the collected data, descriptive analysis has been carried out. In this instance, descriptive statistics are displayed along with the mean, median, sum, range, skewness, and kurtosis. The responses are primarily leaning toward the agree and strongly agree options, as indicated by the median range of 1 to 2. The dataset appears to have a long tail on the right side when the skewness values are positive. Conversely, a positive kurtosis value indicates that the dataset has a thick tail.

Hypothesis 1

Model Summary ^a				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.321 ^a	.103	.086	1.26664

a. Predictors: (Constant), IV1
b. Dependent Variable: DV

ANOVA ^a				
Model		Sum of Squares	df	Mean Square
1	Regression	9.768	1	9.768
	Residual	85.032	53	1.604
	Total	94.800	54	

a. Dependent Variable: DV
b. Predictors: (Constant), IV1

Coefficients ^a				
Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	9.484	.941	
	IV1	-.307	.124	-.321

a. Dependent Variable: DV

Table 5: Linear regression analysis

It is evident from the above tabular representation 5 that the values of R, R Square, and Adjusted R Square are, respectively, 0.321, 0.103, and 0.086. Conversely, the R square value, which in this instance is 10.3%, shows how the inclusion of an independent variable affects a reliable variable. Durbin-Watson's value of 1.678 shows a negative autocorrelation between artificial intelligence use and business growth and success. In order to determine whether a result is statistically significant or not, the f-ratio in ANOVA is calculated. Expansion and prosperity of businesses

Hypothesis 2

Model Summary ^a					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Collinearity Statistics
1	.371 ^a	.138	.121	1.24189	

a. Predictors: (Constant), IV 2
b. Dependent Variable: DV

ANOVA ^a				
Model		Sum of Squares	df	Mean Square
1	Regression	13.058	1	13.058
	Residual	81.742	53	1.542
	Total	94.800	54	

a. Dependent Variable: DV
b. Predictors: (Constant), IV 2

Coefficients ^a				
Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	10.065	.999	
	IV 2	-.710	.244	-.371

a. Dependent Variable: DV

Table 6: Linear regression analysis

It is evident from the above tabular representation 5 that the values of R, R Square, and Adjusted R Square are, respectively, 0.371, 0.138, and 0.121. Conversely, the R square value, which in this instance is 13.8%, shows how the inclusion of an independent variable affects a reliable variable. Durbin-Watson's value of 2.597 shows a negative autocorrelation between artificial intelligence use and business growth and success. In order to determine whether a result is statistically significant or not, the f-ratio in ANOVA is calculated. Expansion and prosperity of businesses

Hypothesis 3

Model Summary			
Model	R	R Square	Adjusted R Square
1	.014 ^a	.000	-.019

a. Predictors: (Constant), IV 3
b. Dependent Variable: DV

ANOVA			
Model		Sum of Squares	df
1	Regression	.020	
	Residual	94.780	5
	Total	94.800	5

a. Dependent Variable: DV
b. Predictors: (Constant), IV 3

Coefficients			
Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	7.098	.9
	IV 3	.024	.2

a. Dependent Variable: DV

Table 7: Linear Regression analysis

It is evident from the above tabular representation 5 that the values of R, R Square, and Adjusted R Square are, respectively, 0.014, 0.000, and -0.019. Conversely, the R square value, which in this instance is 0%, shows how the inclusion of an independent variable affects a reliable variable. Durbin-Watson's value of 2.055 shows a negative autocorrelation between artificial intelligence use and business growth and success. In order to determine whether a result is statistically significant or not, the f-ratio in ANOVA is calculated. Expansion and prosperity of businesses

Correlation Test

		Correlati
		DV
DV	Pearson Correlation	1
	Sig. (2-tailed)	
	N	55
IV1	Pearson Correlation	.321 [*]
	Sig. (2-tailed)	.017
	N	55
IV 2	Pearson Correlation	.371 ^{**}
	Sig. (2-tailed)	.005
	N	55
IV 4	Pearson Correlation	.290 [*]
	Sig. (2-tailed)	.032
	N	55
IV 3	Pearson Correlation	.014
	Sig. (2-tailed)	.917
	N	55

Table 8: Test of correlation

The "correlation analysis" of the various variables in the provided dataset is shown in the above table. A "p-value" of 0.000 indicates a strong correlation between the variables examined in this correlation study.

V. DISCUSSION

Fintech solutions play a revolutionary role in enhancing the risk management procedure in financial affairs. Fintech startups are evidently bringing about a paradigm shift in the way financial institutions evaluate, track, and manage risks (Mishchenko et al. 2021). Fintech, which is a combination of finance and technology, uses cutting-edge methods and instruments to improve the overall effectiveness and resilience of risk management frameworks. However, fintech startups face a variety of obstacles along the way, but they are also presented with opportunities for innovation and growth on their optimization journey (Rauniyar, 2021). These startups must skillfully navigate a dynamic interplay of technological, regulatory, and market-driven obstacles in the quickly changing financial technology landscape in order to achieve long-term success. The fields of artificial intelligence or AI and data analytics are important aspects of this shift.

Financial institutions can detect patterns, trends, and possible hazards by using fintech's real-time processing of enormous amounts of data thanks to sophisticated analytics. These solutions enable institutions to anticipate and proactively address risks through AI-driven predictive analytics, thereby promoting a more proactive approach to risk management (de Mariz, 2020). Using the mean values and standard deviations, SPSS software was utilized in this study to analyze the central tendency and response variability. The positive kurtosis suggests a distribution with heavier tails. The high R-square values for hypotheses 1 and 2 indicate that the independent factors under hypothesis have a significant impact on the dependent variable. Hypothesis 3 indicates a moderate relationship.

VI. CONCLUSION

Fintech solutions use cutting-edge technologies, creative methods, and data-driven approaches to redefine risk management in financial matters. These solutions improve fraud detection and automate compliance procedures, among other things, making the financial ecosystem more robust, safe, and effective. The adoption of fintech by financial institutions is expected to create a dynamic risk management landscape that can adjust to new opportunities and challenges in the constantly changing financial sector. The primary quantitative method was selected in order to collect the pertinent data for this investigation. Through statistical analysis, the gathering of quantitative data can assist in projecting real-time information.

REFERENCES

- [1]. Alshemeili, J. M., & Safei, S. A. (2023). The Impact of Innovation Practices on the Performance of Financial Technology Companies: An Empirical Study in UAE. *Quality-Access to Success*, 24(196). <https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=15822559&AN=170384538&h=wt0zYipSIodxLoFL56Xi4aVvokHXsDzReweVU9Pd8jrdHxIidSpiF18UCsnWOjiuyXeGbAIYaAUVqpzp1Ko40A%3D%3D&crl=c>
- [2]. Beck, T. (2020). *Fintech and financial inclusion: Opportunities and pitfalls* (No. 1165). ADBI working paper series. <https://www.econstor.eu/bitstream/10419/238522/1/adbi-wp1165.pdf>
- [3]. Budiasni, N. W. N., Indrayani, K., & Mustafa, Z. (2023). Effect of Financial Technology and Environmental Performance on Financial Performance with Corporate Social Responsibility as Intervening Variables. *International Journal of Economics Development Research (IJEDR)*, 4(2), 723-745. <https://www.yrpiiku.com/journal/index.php/ijedr/article/download/2675/1739>
- [4]. Burke, J. J. (2021). *Financial Services in the Twenty-First Century: The Present System and Future Developments in Fintech and Financial Innovation*. Springer Nature. https://www.researchgate.net/profile/John-Ja-Burke/publication/353018509_The_Financial_System/links/6388737a7d9b40514e043edb/The-Financial-System.pdf
- [5]. Coryanata, I., Ramli, E. H., Puspita, L. M. N., & Halimatusyadiah, H. (2023). Digitalization of Banking and Financial Performance of Banking Companies. *International Journal of Social Service and Research*, 3(2), 366-371. <https://ijssr.ridwaninstitute.co.id/index.php/ijssr/article/download/254/425>
- [6]. de Mariz, F. (2020). Fintech for impact: How can financial innovation advance inclusion?. *De Mariz, Frederic. Fintech for Impact: How Can Financial Innovation Advance Inclusion*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3715785
- [7]. Doran, N. M., Bădîrcea, R. M., & Manta, A. G. (2022). Digitization and financial performance of banking sectors facing COVID-19 challenges in central and Eastern European Countries. *Electronics*, 11(21), 3483. <https://www.mdpi.com/2079-9292/11/21/3483/pdf>
- [8]. Fabris, N. (2022). Impact of COVID-19 pandemic on financial innovation, cashless society, and cyber risk. *Economics-Innovative and Economics Research Journal*, 10(1), 73-86. <https://sciendo.com/pdf/10.2478/eoik-2022-0002>
- [9]. Fayda, S. N. A., Sencan, A., Aksoy, O., & Yazici, S. (2020). A Qualitative Research on Selected Performance Indicators for Investment Decision Process: A Framework for FinTech Startups in Turkey. *Journal of Business Economics and Finance*, 9(1), 28-41. <https://dergipark.org.tr/en/download/article-file/1037778>
- [10]. Fernando, F., & Dharmastuti, C. F. (2021). Fintech: The Impact of Technological Innovation on the Performance of Banking Companies. In *Second Asia Pacific International Conference on Industrial Engineering and Operations Management, Surakarta, Indonesia, September* (pp. 14-16). <http://ieomsociety.org/proceedings/2021indonesia/161.pdf>
- [11]. Haddad, C., & Hornuf, L. (2021). The Impact of Fintech Startups on Financial Institutions' Performance and Default Risk. https://media.suub.uni-bremen.de/bitstream/elib/4758/6/Diginomic_Working_Paper_No.4_2021.pdf

- [12]. Haddad, C., & Hornuf, L. (2023). How do fintech start-ups affect financial institutions' performance and default risk?. *The European Journal of Finance*, 29(15), 1761-1792. <https://www.tandfonline.com/doi/pdf/10.1080/1351847X.2022.2151371>
- [13]. Hermawan, S., Rokhmania, N., Rahayu, R. A., Qonitah, I., & Nugraheni, R. (2021). Financial performance mediates the relationship of intellectual capital to firm value in Indonesian banking companies. *International Journal of Research in Business and Social Science* (2147-4478), 10(6), 181-188. <https://www.ssbfnct.com/ojs/index.php/ijrbs/article/download/1345/1000>
- [14]. Irawati, N., Maksum, A., Sadalia, I., & Muda, I. (2019). Financial performance of Indonesian's banking industry: the role of good corporate governance, capital adequacy ratio, non performing loan and size. *International Journal of Scientific and Technology Research*, 8(4), 22-26. https://www.researchgate.net/profile/Azhar-Maksum/publication/333380217_Financial_performance_of_indonesian's_banking_industry_the_role_of_good_corporate_governance_capital_adequacy_ratio_non_performing_loan_and_size/links/5d12ecc2299bf1547c7f4751/Financial-performance-of-indonesians-banking-industry-the-role-of-good-corporate-governance-capital-adequacy-ratio-non-performing-loan-and-size.pdf
- [15]. Izzo, F. (2020). Intellectual capital and company performance: Evidence from European FinTech companies. *International Business Research*, 13(6), 34-42. <https://iris.unicampania.it/bitstream/11591/427869/1/IBR.pdf>
- [16]. Jarvis, R., & Han, H. (2021). Fintech Innovation: Review and Future Research Directions. *International Journal of Banking, Finance and Insurance Technologies*, 1(1), 79-102. <https://researchlakejournals.com/index.php/IJBFIT/article/download/126/98>
- [17]. Kabulova, J., & Stankevičienė, J. (2020). Valuation of fintech innovation based on patent applications. *Sustainability*, 12(23), 10158. <https://www.mdpi.com/2071-1050/12/23/10158/pdf>
- [18]. Khatib, S. F., Hendrawaty, E., Bazhair, A. H., Rahma, I. A. A., & Al Amosh, H. (2022). Financial inclusion and the performance of banking sector in Palestine. *Economies*, 10(10), 247. <https://www.mdpi.com/2227-7099/10/10/247/pdf>
- [19]. Malik, N., Oktavia, A., Suliswanto, M. S. W., & Anindynta, F. A. (2020). Financial banking performance of ASEAN-5 countries in the digital era. *Jurnal Keuangan Dan Perbankan*, 24(1), 117-130. <https://pdfs.semanticscholar.org/54cd/a32be9864c90e3a0268d2fbadca5ed33fc47.pdf>
- [20]. Mishchenko, S., Naumenkova, S., Mishchenko, V., & Dorofiev, D. (2021). Innovation risk management in financial institutions. *Investment Management and Financial Innovations*, 18(1), 191-203. https://www.businessperspectives.org/images/pdf/applications/publishing/templates/article/assets/14696/IMF_I_2021_01_Mishchenko.pdf
- [21]. Patrick, C. H., Balakulasingam, S., & Patrick, E. L. (2023). Impact of Digital Technologies on Operational Performance of Banking Industry in South Asia. *ACCELERATING SOCIETAL CHANGE THROUGH DIGITAL TRANSFORMATION*, 39. <https://nsbm.ac.lk/icobi/proceedings/icobi2023-proceedings-volume1.pdf#page=66>
- [22]. Pujakusum, D. P. (2019). The Effect of Good Corporate Governance Mechanism On The Financial Performance of Banking Companies Listed In Stock Exchange Indonesia 2012-2016. *Journal of Applied Managerial Accounting*, 3(2), 273-287. <https://jurnal.polibatam.ac.id/index.php/JAMA/article/download/1552/892>
- [23]. Rauniyar, K., Rauniyar, K., & Sah, D. K. (2021). Role of FinTech and innovations for improvising digital financial inclusion. *Int. J. Innov. Sci. Res. Technol*, 6(5), 1419-24. <https://ijisrt.com/assets/upload/files/IJISRT21MAY1089.pdf>
- [24]. Sari, D. N. (2020). The effect of the growth of financial technology companies peer to peer lending on the performance of banking in Indonesia. *Bulletin of Fintech and Digital Economy*, 1(1), 42-60. <https://jurnal.uns.ac.id/bfde/article/viewFile/52114/31965>
- [25]. Senyo, P. K., & Osabutey, E. L. (2020). Unearthing antecedents to financial inclusion through FinTech innovations. *Technovation*, 98, 102155. https://eprints.soton.ac.uk/441492/1/Technovation_Manuscript_R2_2020_Clean.pdf

- [26]. Senyo, P. K., Karanasios, S., Gozman, D., & Baba, M. (2022). FinTech ecosystem practices shaping financial inclusion: the case of mobile money in Ghana. *European Journal of Information Systems*, 31(1), 112-127. <https://www.tandfonline.com/doi/pdf/10.1080/0960085X.2021.1978342>
- [27]. Soewarno, N., & Tjahjadi, B. (2020). Measures that matter: an empirical investigation of intellectual capital and financial performance of banking firms in Indonesia. *Journal of Intellectual Capital*, 21(6), 1085-1106. https://repository.unair.ac.id/106155/1/NoorlailieS_Karil06.3-Measures%20that%20matter.pdf
- [28]. Statista, (2023) Number of fintech startups worldwide from 2018 to 2023, by region Retrieved from: <https://www.statista.com/statistics/893954/number-fintech-startups-by-region/> on 4th December, 2023
- [29]. Statista, (2023) Share of banks' IT spending on new technology in North America and Europe from 2013 to 2022 Retrieved from: <https://www.statista.com/statistics/1112713/bank-technology-spending-investment-north-america-europe/> on 4th December

APPENDICES

Appendix 1

1. Fintech integration has been linked to increases in overall performance and operational efficiency in financial institutions.
2. Increased client engagement and satisfaction at traditional financial institutions is positively correlated with the implementation of fintech technologies.
3. Fintech companies diversify the financial services industry and may lessen reliance on conventional revenue sources.
4. Fintech companies employ advanced analytics and machine learning to improve the accuracy of risk assessment, which may reduce the likelihood of default for financial institutions.
5. Financial institutions and fintech companies working together create synergies that improve the competitiveness of the sector as a whole.
6. Automation in financial operations enabled by fintech is associated with lower manual error rates and better risk management techniques.
7. The advent of fintech disruptors encourages established financial institutions to improve their technological capacities, which in turn promotes innovation within the sector.
8. Through increasing the customer base, fintech solutions contribute to financial inclusion and may reduce default risks.
9. Financial institutions are forced to develop and adapt in response to the competition from fintech companies, which results in more robust risk management frameworks.
10. Fintech firms are driving increased digitization in financial services, which is linked to better real-time monitoring capabilities that help identify and mitigate default risks in a timely manner

Survey

Link:

<https://docs.google.com/forms/d/1HVajP1OdVphFnDW250QjD7jDHNK1PAi1KMwIpQz9YpI/edit#responses>