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Fintech in Bangladesh: Ecosystem, Opportunities and Challenges

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ABSTRACT

The modern economy has a lot of new wheels which turn the fortune of the contemporary era. Financial technology is no doubt one of those. The new cashless economy is based on these digital financial services. This study resembles the overall ecosystem, challenges, and prospects of fintech in Bangladesh. Recently financial institutions, especially banks, have become more dependent on these hi-tech services. For the study, the data has been collected by questionnaire survey using ranked method of analysis using SPSS, in which IT-related people has been surveyed. The study reveals that these technologies will be helpful not only for the users but also for the business growth and diversification of services. The prospects are enormous as due to globalization, international transactions have increased, and people are moving towards virtual transactions. The study outlines the features of fintech that is prevalent in Bangladesh and describes the barriers that creates obstacles towards the growth of the financial technological industry.

Keywords: Bangladesh, e-currency, financial service, Fintech.

1. INTRODUCTION

For the last decade, the emergence of Fintech technology has disrupted the traditional financial sector either because of consumer trends shifting to more non-traditional financial service providers or because financial institutions partnering with Fintech startups have gained competitive edge over those that have not (PwC, 2017). This has led to an increase in investment in Fintech technology by investors or financial institutions partnering up with Fintech startups. The areas that have seen most focus are the payment, banking, insurance and asset and wealth management sectors in the areas of ease of use, faster service, superior customer service and 24/7 accessibility (PwC, 2017). The financial sector currently is seeing significant trend in investment in Fintech technologies. This has become noticeable arguably since 2010 due to two key reasons. Firstly, due to the financial crisis of 2008 that affected the whole world and secondly the ease and convenience that the newer technologies are providing over traditional banking systems (Saksonova & Kuzmina-Merlino, 2017).

Therefore, it is crucial to establish the meaning of Fintech and terms associated with this. Fintech can be described as financial technologies and financial innovation focus of small companies to large corporations and financial institutions. The main focus is to develop technologies that can transform the financial landscape through simplifying typical financial applications. Therefore, it can be said fintech is an umbrella term to describe financial services and business models that are enabled through innovative technologies (Mention, 2019). Lacasse et al. has described Fintech as a financial ecosystem that is supported through digital platforms and artificial

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intelligence technologies providing financial services that are usually contrasting to general traditional banking (Lacasse et al., 2016).

According to KPMG, 2019 saw global Fintech investment grew to 37.9 billion dollars across 962 deals. However, the investment in Asia Pacific was significantly lower compared to other continents with only 3.6 billion dollars across 102 deals ("The Pulse of Fintech H1 2019", 2020). However, according to Accenture, there has been a big jump in investment in Fintech in Europe. In Asia Pacific, Singapore and Australia accounted for majority of the investment with 453 million dollar and 401 million dollars respectively. Moreover, the report also stated that since the exponential growth in Fintech investment, it is now becoming more steady showing most of the startups are now entering the maturing phase of their business model ("Global Fintech Fundraising Fell in First Half of 2019, with Decline in China Offsetting Gains in the US and Europe, Accenture Analysis Finds", 2020).

Patrik Schueffel (2016) has found peer-to-peer lending, Robo-Advisory, online identification, internet banking, mobile payments and crowdfunding to be few of the most invested Fintech technologies in the financial sector. This has been through startup firms, incumbent companies, government level or super organizations. What is daunting about Fintech technology is the scope and magnitude of its effect on the financial sector and financial services documented by several reports of leading financial institutions. (Schueffel, 2016)

Bangladesh, as a country, has emerged as a key contender for investment recently due to its booming economic potential and GDP growth rate. Bangladesh has close to 58 million people in the 15-35year demography, reflecting the enormous possibility for technology-oriented businesses. Despite hosting almost 2.2% of the world's population, Bangladesh ranks only 77th on the availability and 86th on the affordability of financial services. Therefore, compared to the population, there is very low banking penetration with over 70% of the population having no bank account. In contrast to low banking penetration, smart phone adoption has seen a rapid explosion with over 117 million people with mobile subscriptions. This has led to creation of policies by the government for Mobile Financial Services (MFS) in 2011 which resulted in Bangladesh now accounting for more than 8% of total mobile money accounts worldwide. However, most of the transactions are still centered around basic transactions. Therefore, the Fintech ecosystem of Bangladesh is still mostly constituted by MFS activities. Other services in the ecosystem such as IT platform, solution providers and financial service providers still use MFS in collaboration with other organizations instead of fully utilizing the full potential of Fintech technology (Pathak, Saini & Sahoo, 2018).

Therefore, our study will follow the hypothesis that Bangladesh being behind new trends due to being a developing country still has significant scope for investment in Fintech to act as disrupter in the financial sector. The study will identify a list of Fintech services and survey corporate offices to find out which services are currently being used in the corporate organization and which services are being neglected and will try to determine a rationale behind them.

2. LITERATURE REVIEW

Fintech originated from the contraction for Financial Technology, which was first introduced in 2006 and since then has massed popularity quickly. It can be summarized as technologies that targets individual business units of banks and aims to separate the clients from them through creation of services and solution through technology (Omarini, 2018).

One important aspect of fintech to work flawlessly is the creation of platform. Platforms facilitates easy participation between two or more interdependent groups through the arrangement of access to channels, IT based functionality and ability to conduct business processes which increases in value as participation increases and hence data generation increases. Internet is one such platform that has allowed companies such as Facebook, Google, Amazon, LinkedIn, Air B&B and so on to become such dominating powers that it can be hardly overlooked now. Therefore, creation of Fintech platforms over this channel is vital towards its success (Dhar & Stein, 2016). Fintech is seen as a fusion of finance and technology that is changing the role of information technology by converging social computing, internet of things, cloud computing, big data and enabling financial companies to automate their process through these technologies. They are changing the behavior of the consumers by creating a more self-service oriented culture. They are changing the ecosystem of traditional financial sectors through creation of new business models, platforms and channels. All of these are creating a change in regulations for example London, Singapore or Hong Kong uses a Fintech "sandbox" to experiment new services and products (Puschmann, 2017). Fintech can be classified as consisting of the following characteristics (Drummer, Jerenz, Siebelt & Thaten, 2016):

- Using technology and innovation at the highest degree to gain competitive advantage through increasing quality and security of services, increasing automation and providing better quality of service.
- They usually run on agile business model, hence their popularity in startups.
- They usually target non-traditional marketing channel such as the internet and mobile.
- They focus on customer-centric approach through creation of making customer lives easier with financial services by lowering cost and time involvement.

H0: This allows us to establish our first hypothesis: Fintech is not growing in Bangladesh.

Due to the wide area that Fintech covers in its classification of just what is Fintech and what areas it covers; currently other than financial segment it is also categorized under the following innovations of:

- Cloud Technology
- Robotic Process Automation
- Advanced Analytic
- Process and service externalization
- Digital transformation
- Smart Contracts
- Artificial Intelligence
- Block Chain and cryptocurrency
- Internet of things.

Among the Financial Fintech, it can be classified under the following technologies:

- Financing (Crowdfunding, credit and factoring)
- Asset Management (Social Trading, Robo advice, personal finance management, investment and banking)
- Payments (Alternative payment methods, Blockchain and cryptocurrencies)
- Other FinTech (Insurance, Search engines, IT infrastructure)

Fintech is still at infant stage in the financial service sector and even though investment is increasing, it needs further massive investments to compete with other traditional companies with large cash assets and political connectivity, especially in the developing countries (Vijai, 2019). However, there are still massive gaps in Fintech research in some areas where as some areas are more invested in. There is substantial data available for Fintech's contribution to alternative finance, or how it can change the organization structure but there is very little data available for the involvement of artificial intelligence and large-scale data processing in finance sector, new financial regulations concerning Fintech specially concerning identity, security and data privacy. Moreover, most of the researches have no overall agenda and is loosely connected (Kavuri & Milne, 2018).

Fintech has been particularly lucrative for developing countries because of their ability to create financial solutions. Financial solutions are a combination of strategies, products, tools and services that is used to align inflow and outflow of low-income people to create a desired standard of living within the confinement of the limited resources available. However, problem with money management for lower income people is due to the very basic problem of lack of cash inflow, they must spend more time to manage it as each dollar outflow is more significantly valuable to them compared to high income people. Therefore, every dollar has to be used optimally. Low-income group desires financial stability over increasing their cash inflow. Therefore, Fintech can play a vital role in managing the informal money management procedure of the low income group, who are the majority of the population in most developing countries and provide opportunities for improvement (McCaffrey & Schiff, 2017).

H1: This leads to our next hypothesis: Fintech is not disrupting the financial market of Bangladesh.

2.1 Fintech: Global Eco- system

USA is the current market leader in Fintech followed by UK, Canada, India and Germany amongst the global Fintech market of 64 countries (Haddad & Hornuf, 2016). India has adopted exceptionally fast to the changes and is forecasted to reach $ 73 billion at the end of 2020 growing at 22% with companies such as Paytm, Mobikwik, BankBazaar, Policybazaar, Fino PayTech, ItzCash, Capital Float,Mswipe, Ezetap and Citrus Pay dominating the market (Vijai, 2019). However, the tension regulatory tension between China and US have prevented mega deals and have resulted in a slow growth for Asia Pacific in 2019 meaning USA backed by global venture capitalists are still leading, though investments in Asia are slowly catching up with US (Cbinsights, 2020).

The Fintech ecosystem consists of 5 stakeholders; Fintech startups, technology developers, government, financial customers and traditional financial institutions. These stakeholders have to contribute symbiotically to enhance customer satisfaction. The Fintech startups are at the center of the ecosystem that comes up with major innovation in different financials areas and targets niche markets and tries to provide personalized services to the customers. The technology developers provide the Fintech startups with digital platforms and channels to establish their goals. Governments depending on their national economic development plans and policies provides different level of regulations to the Fintech ecosystem. The financial customers are the source of income for the Fintech companies. They typically target individuals and small and medium sized enterprises. Traditional financial institutions, considering the threat Fintech holds over them, have been reevaluating their business models and trying to collaborate with different Fintech startups in order to keep their competitive advantage. (Lee & Shin, 2018).

2.2 Lending business model

Since the financial crisis of 2006, P2P lending has gained momentum in both US and Europe. And P2P platforms has grown rapidly since 2007 in the US, UK and China. It is estimated to grow to $300 billion by 2022. P2P lending platforms that are doing substantially well in US and Europe are LendingClub, Upstart, Funding Circle, Peerform, Minto, Grupeer, Houser, Zopa, Bitbond, Auxmoney, IUVO group, CirclebackLending and Prosper market. However, China leads the P2P platforms with more than 4000 platforms earning $20 billion per year from loans.
Shadow banks such as OnDeck Capital are also using technology to provide loans to small businesses, and has made $2.5 billion in loans in 2018 alone through equity and debt financing.

The emergence of shadow banks using Fintech and dealing with uninsured debt financing also possesses a threat for traditional banks and need for regulatory body (Thakor, 2020). However, the security of such platforms is still questionable. After Hurricane Katrina in 2005, there were more than 2,400 malicious websites that stole millions of donor money and Ezubao, a chineese platform conned over $7.6 billion from 900 investors. Therefore, this is a side of Fintech that needs much more research into proper security management (Lacasse et al., 2016).

2.3 Cryptocurrencies

The biggest disruption Fintech brought in payment services was cryptocurrency. This is a digital currency that works through virtual network and uses data mining techniques and blockchains for ledger keeping to function and the most popular one Bitcoin, which after its launch in 2009 gained the largest market share among other cryptocurrencies such as Ethereum. However, the currency values are highly volatile despite their $417 billion market cap as of February 2018. They can be classified in four types of assets (Kuo Chuen, Guo & Wang, 2017):

- General payment digital money
- Platform tokens
- Corporate coupons
- Digitized securities

2.4 Money Management

Fintech is also affecting the management of money through changing foreign exchange trading by decreasing the need for an intermediator figure. Mobile payment market is expanding and has exceeded $1,000 billion transactions in 2019 with over 1 billion users from only 60 million in 2015. Global non-cash transaction grew from 2016 at 12% rate and is the highest in the last two decades with emerging Asia responsible for 32% of the transaction and emerging markets leading the growth and projected to surpass North America by end of 2020 (Capgemini, 2019). This has also facilitated the creation of mobile wallet technologies which enables users to pay for groceries, Uber without the need of cash or card and only an app in their smart phone is required. This technology has become quite popular in India and there are a number of service providers and large corporations partnering with Fintech startups to provide this service (Mukaria & Mishra, 2019). Robo-advising is growing at a steady rate and research has provided evidence that adopters of robo-advising are receiving potentially better diversification benefits, receiving better returns with lower risks. Robo-advisors are wholly automated platforms that works through the internet to provide the customers with financial advice and designs their portfolio allocation digitally. It automatically screens the investors, implements investment strategies, monitors and evaluates the strategies all on its own. The advantage is that it is available around the clock and can cater to multiple customers without any biasness (Kaya, 2017).

2.5 Insurance services

Insutech is also changing the insurance sector, where companies can use 'big data" to calculate risks more precisely and automobile and health insurance are two significant segments of Insutech and gaining investors from private equity funds and venture capitalists. Its market revenue globally was $532.7 million in 2008 and has since attracted investments from Softbank, Google Ventures, Amazon and Salesforce (Thakor, 2020). Insurance industry has been disrupted by companies such as The Zebra, Censio, Sureify Labs, ladder and CoverFox (Lee & Shin, 2018).

2.6. Crowdfunding

Crowdfunding allows the creation of new product, media, services or ideas through a network of people through the interaction of three parties; the entrepreneur with the funding need, the donors who would like to contribute to the project and the middleman organization who will be regulating the arrangement between the two party. Companies such as Kickstarter, CrowdFunder, Rockethub, GoFundMe, Crowdcube has been increasingly popular and growing in demand and users (Mollick, 2014).

H2: This allows us to establish our second hypothesis: Fintech does not have an increasing number of activities associated with it.

2.7 Fintech: Current scenario in Bangladesh

Bangladesh has one of fastest GDP growth rates in the world that has cemented them as one of the eleven emerging markets. The country is slowly moving towards upper middle-income status, and changing into non-traditional industry from its typical traditional-industrial sector (Ahmed, 2019). However, various sectors of Bangladesh are lacking in technology and one of them is the financial sector. Bangladesh, despite having a huge population, still has a huge lacking in the financial sector. More than 35 million people performs their financial requirements through informal channels and without any bank accounts. Therefore, with the right technology, Fintech can play a crucial role in overcoming this barrier. The primary focus of Fintech is to reduce the cycle time of transactions and bring a reduction in cost of services and improvement in the service quality. Hence, Fintech has the potential to bring financial inclusion and accelerate the financial sector development in emerging countries such as Bangladesh. Fintech enabled payment methods has the ability to reform the system through bringing the informal economy into the formal economy and enhancing transparency and tax collection. Fintech can also lower operating costs for payment banks and mitigate current fraud risk for the central bank. Fintech can also automate the verification process of loan approval method which is still currently lacking significantly in Bangladesh. By reducing the time it takes to complete a loan approval/rejection, it would also improve customer satisfaction and reduce threat of biasness. Fintech can also be used to provide Robo Advisor to all multiple level stakeholders to provide advisory services which could further improve service quality. Customer care can now be replaced with Chatbots to lower operating cost and improve speed of services. Bangladesh still has room in all these areas for the implementation of Fintech. Moreover, the country has an advantage that it has a large base of young population and mobile subscription coverage is extremely high. Combining the two factors, Fintech can bring macroeconomic growth by acting as a catalyst, however proper regulatory body will be crucial for the growth (Chakraborti, 2020).

Rubaiyat has further supported the findings stating the significance of the potential of Fintech in Bangladesh due to the underdeveloped financial structure and the growing smartphone penetration frequency and the startup sector being still at infancy in Bangladesh booms positive for the Fintech development specially with various accelerators, incubators and sponsored events by both the state and private corporations taking place currently. Mobile money service is hence unsurprisingly the leading Fintech with companies such as Bkash, iPay leading the market share followed by similar services from banks such as Rocket, mCash and UCash. However, other than this, other financial services such as account opening, loans and insurance has still not been automated in most of the financial institutions. Therefore, independent companies can potentially bring a disruption in the financial market through the introduction of these new technologies (Rubaiyat, 2020).

However, despite the potential of Fintech to renovate the financial sector, there is a significant need for proper regulation and guideline. Bangladesh is the 9th highest recipient of remittance in the world, however due to policies taken by the government and central bank of Bangladesh, cross-border money transfer is still a cumbersome and lengthy procedure whereas there has been stunning success around the world to make this system quicker through Fintech. Fintech can also be used at the root level to create financial markets for people working in rural areas such as farmers and fisherman as they are unable to get fair prices usually and thus increase their standard of living. Fintech can also significantly improve SMEs across the country by removing the need to be part of a bank to perform financial services. Fintech also allows the opportunity for implementing green strategies. With all these in mind the government of Bangladesh has already set the time period from 2019-2024 to create the first National Financial Inclusion Strategy (NFIS) as part of the government's Vision 2021 (Islam, 2019).
Studies have found, E-commerce business is booming in Bangladesh and one of the main reason for that is fintech and the internet which has made both the possibility to conduct business with out physical presence, receive payment through mobile money transfer and send the product through courier apps who can also be paid through fintech. As a lucrative approach for passive income, more and more entrepreneurs are now adopting to E-commerce business in Bangladesh and fintech can have a significant role in growth of this sector as well (Rahman, Ahmed & Nitu, 2019).

With that in mind, access to information was also created in partnership with UNDP to aid in the digital growth of Bangladesh and financial inclusion through Fintech is also part of their agenda ("a2i", 2020). Currently the Fintech companies which are performing well in Bangladesh are (Scott-Briggs, 2020):

- bKash
- CloudWell
- Rocket
- Nagad
- DBBL
- SureCash
- SmartKompare
- AB bank
- Project.co

Banks have started to adopt to new technologies, and many banks are now hiring younger more technologically savvy employees to make sure they can adopt to the changes or designing training programs to cope with Fintech changes (Ahmed & Rahman, 2020). Moreover, considering the size of the population there is enormous scope for Fintech startups. Specially the rural areas of Bangladesh have dire need for Fintech services as it has been found they do not have the proper knowledge to open bank accounts or there is large disparity of per capita income between rural and urban people to even open bank accounts. The banking infrastructure and services are also inadequate as it is not lucrative for traditional brick and mortar banks to open their branches there. Therefore, to circumvent all these issues, government policies and Fintech awareness can bring financial inclusion to rural areas (Kuddus, Saha & Rahman, 2020).

H3: Our third hypothesis is thus: Bangladesh does not face any challenges towards the growth of fintech.

2.8 Research Model

From the literature review, we can summarize few important trends that have shaped the research model.

1) The Fintech environment is in the growing stage, has passed its infancy and has been attracting investors all over the world. It has already changed the financial landscape in various countries given the chance and scope.
2) Bangladesh has huge potential as a country to reshape its financial sector as the market is still very unsaturated except mobile payment sector unlike developing countries.
3) There are various gaps in research of Fintech; specially in the context of Bangladesh and this research can help to bridge the gap and can benefit the potential investors and/or researches by providing concrete empirical evidence towards which sectors to focus on.

Therefore, our research will aim to identify the current perception of corporate employees towards Fintech and which aspects of the ecosystem are currently relevant for Bangladesh and which aspects are neglected.

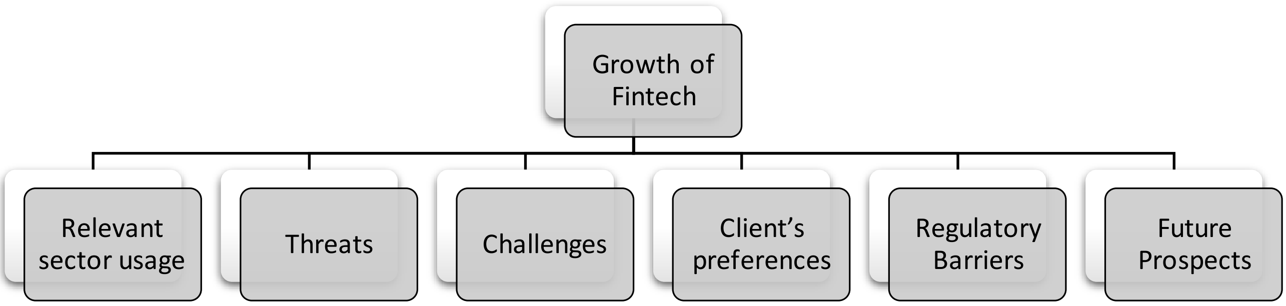
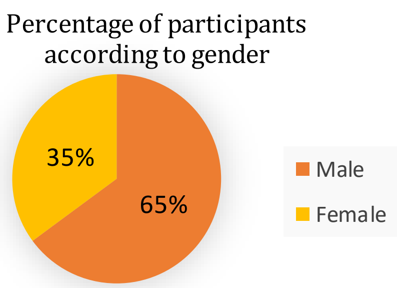
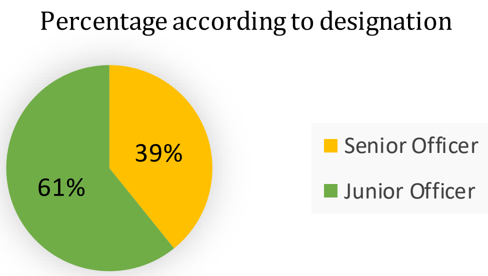


Figure1. The Research Model

3 METHODOLOGY

The research basically deals with the overall prospects and challenges of Fintech in Bangladesh. So, to justify the study, the sampling has been done considering the familiarity with this technology. The demographic background of the respondents is presented in Figure 2:





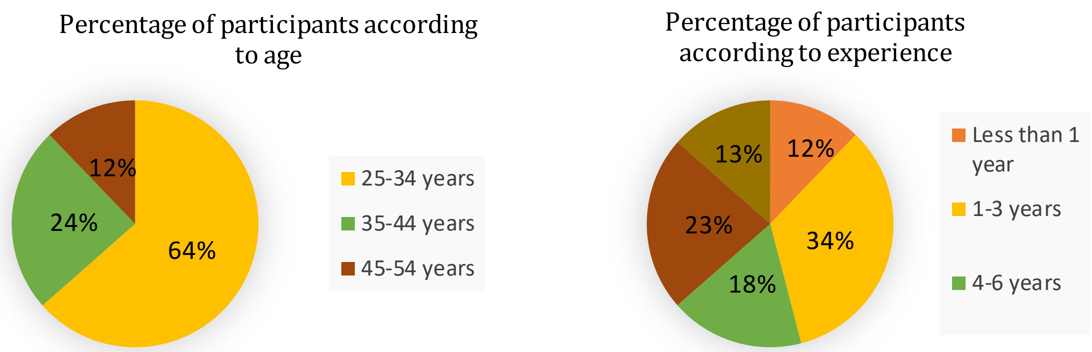


Figure 2. Demographic information of the respondents

Among the 70 respondents, 65% are male and 39% belongs to the senior position in their respected organizations. It can be seen that 64% belongs within the age of 25-34. It is positive to see that 34% of the respondents have 1-3 years of experience in their fields while 49% of the respondents are familiar with Fintech by buying services.

3.1 Sample size and design

120 questionnaires were distributed among the people who are related to Fintech. Among them, 70 people, relating to IT world or related to Fintech have been surveyed fully for the research. The response rate is 58.33% since this industry is in its emerging era so it is difficult to find expert in this field. The sample has been targeted from Dhaka city only.

3.2 Data collection techniques

A structured questionnaire has been set to collect data in which the respondents express their views through likert scale using different labels in different questions.

Not at all relevant	*Not relevant*	*Somewhat relevant*	*Relevant*	*Very relevant*
1	2	3	4	5

The questionnaires of two survey reports of New Zealand and Europe have been followed as a model (pwc.co.nz/fintech2017 and European Fintech survey report of CFA institute (2016)). Ranking methods are also used for some questions in questionnaire to get preference and feedback from the respondents. The questionnaire has been adapted to fit the Bangladesh market with help of the two referred sources mentioned above.

3.3 Data analysis

Different statistical tools are used to analyze the collected data. Friedman test and Kendall's W test has been conducted using SPSS version 26.0 and excel has been used as well for different descriptive analysis.

3.4 Research hypothesis

The following hypothesis has been drawn for the study;
H_0: There is no growth of Fintech in Bangladeshi financial sector.
H1: Fintech is not disrupting financial sectors.

H2: Fintech does not have an increasing number of activities associated with it.
H3: Bangladesh does not face any challenges towards the growth of fintech.

4 ANALYSIS AND FINDINGS

The Friedman test is the significance test for more than two dependent variables, which is also known as the Friedman bi-way variance analysis; it is used to check the null hypothesis. In other words, it is used to test that there is no substantial difference between the size of 'k' dependent samples and the population from which these were drawn.

The Friedman test statistics are distributed approximately as chi-square, with degrees of liberty (k – 1). For more than two dependent samples the Friedman test statistics are given by the formula: $\text{Chi-square}_{\text{Friedman}} = ([12/nk(k + 1)]*[SUM(T_i^2] - 3n(k + 1))$

Kendall's W statistical test is used for the normalization of the Friedman test statstic. Kendall's W is used to assess the trend of agreement among the respondents and test for null hypothesis in Non-Parametric tests. Kendall's coefficient values can range from 0 to 1. The higher the value of Kendall's, the stronger the association Statistics Solutions. (2013).

Table 1 Friedman's test and Kendels W

Description	Kendeall's W	Significance	Chi-Square	N
Q1) Which parts of the financial sector are likely to be the most disrupted by FinTech in future?	.722	.000	160.3	74
Q2) Threats related to the rise of Fintech	.668	.000	197.8	74
Q3) Rank the activities you believe your customers already conduct with FinTech companies	.744	.000	220.1	74
Q4) Rank the challenges of fin-tech as per your opinion	.715	.000	317.3	74
Q5) Rank the technologies in accordance with relevance which is important for financial sector	.680	.000	251.51	74
Q6) Rank the channels according to usage of these to interact the clients	.699	.000	103.5	74
Q7) Rank the regulatory barriers to innovation in FinTech	.755	.000	223.4	74
Q8) Rank the opportunities related to the rise of FinTech within your industry	.830	.000	423.8	74

From the table we get greater than .650 kendeall's W value for all our questions which implies that our respondents significantly strongly or strongly agreed with most of the ratings.

4.1 There is no growth of Fintech in Bangladeshi financial sector.

Kendeall's W had a value of .830 at .000 significant level and 423.8 chi square value where N=74 for the question of ranking opportunities of Fintech in the industry. This implies that the null hypothesis is false and there is in fact significant chances for growth in the Bangladeshi market.

4.2 Fintech is not disrupting financial sectors.

Q1 and Q6 was determined to find how the financial experts rate the disruptions and usage in the financial sector of Fintech. Both Questions had Kendeall's W value of .722 and .699 with .000 level of significance. Thus it means we can ignore the Hypothesis that fintech is not disrupting financial sectors and our raters imply that Fintech does in fact impacts the financial sector.

4.3 Fintech does not have an increasing number of activities associated with it.

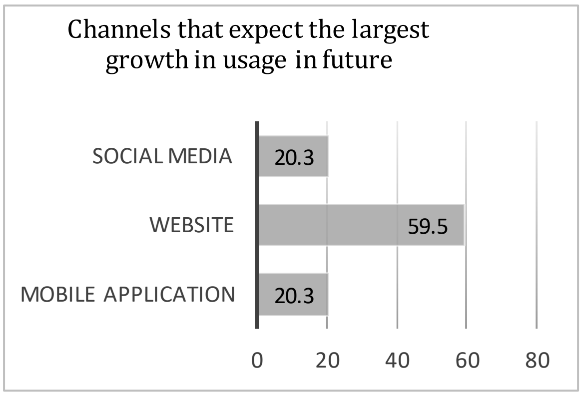
Question 3 and 5 were constructed to test this hypothesis and both had .744 and .680 kendeall's W value associated with them at .000 level of significance. Thus, we can reject the null hypothesis as the raters agree moderately strongly that there are a number of growing activities related to fintech.

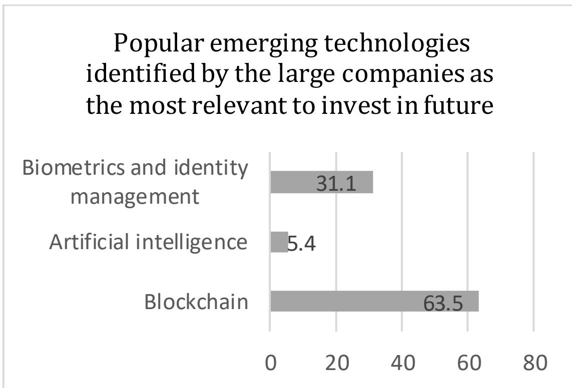
4.4 Bangladesh does not face any challenges towards the growth of fintech.

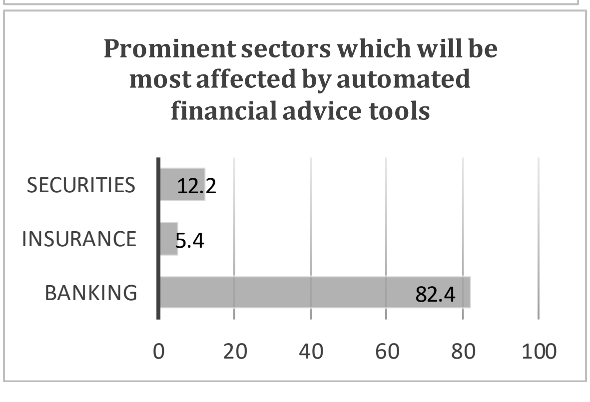
Question 2 and 7 were aimed towards finding whether there are significant challenges or not facing the growth of Fintech In Bangladesh. The questions had keandall's W value of .668 and .775 with .000 level of significance and implying we can reject our hypothesis and our raters does agree moderately strongly that there are barriers towards the growth of Fintech in Bangladesh.

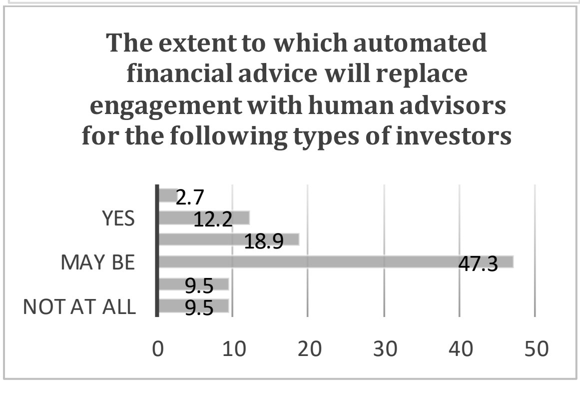
4.5 Descriptive Analysis

In the question where it was asked about Channels that expect the largest growth in usage in future, the outcome proved that websites will be the best source with a percentage of almost 60% while social media and mobile applications took 20% each. This hints that websites should be given higher priority in order to utilise Fintech. Although, according to the survey, growth in websites is the highest, but in terms of usage for interaction with clients, mobile applications are leading with 50.4% while website and social media takes 30.5% and 19.15 respectively. Thus, websites seem to have the highest potential to grow the usage compared to others.









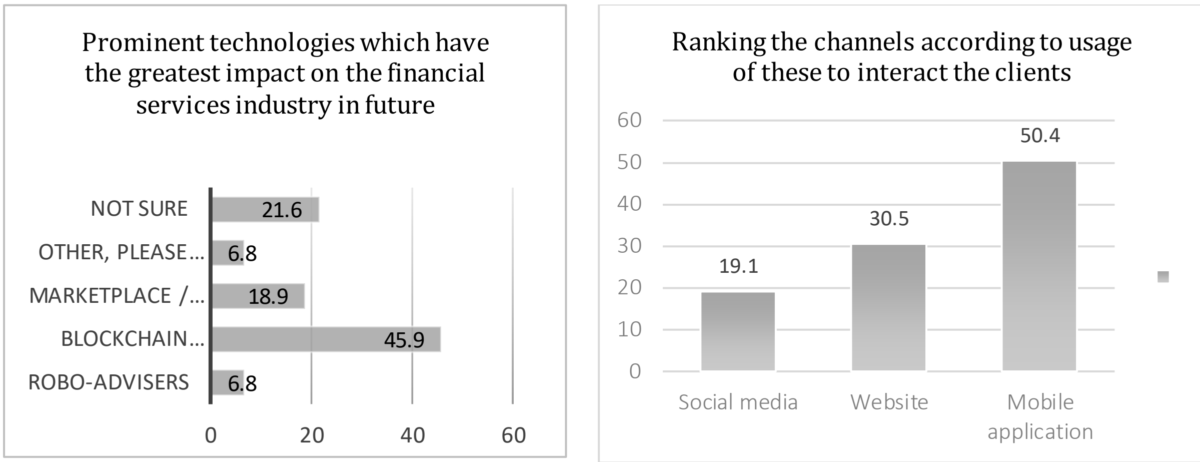


Figure 3. Ranking and other feedback from the respondents

When it was asked about popular emerging technologies where it is the most relevant to invest in the future, the responses of the employees of the large companies supported the concept of Blockchain (63.5%) and Biometrics and identity management (31.1%) and they were not that confident on the artificial intelligence with merely 5.4%. Moreover, when it was asked about prominent technologies which will be having the greatest impact on the future financial services industry, here as well candidates highlighted blockchain technology with almost 46% followed my marketplace/peer to peer lending which was almost half of it with merely 18.9%. Thus, the concept of blockchain must be introduced in the market as it is showing high prospects. Also, compared to securities and insurance, the banking sector will be affected the most (82.4%) by the automated financial advice tools so banks must not delay to introduce Fintech. The officials were, however, quite unsure about the fact when it was asked whether the automated financial advice will replace engagement with human advisors as 18.9% answered maybe while a huge 47.3% said maybe to this.

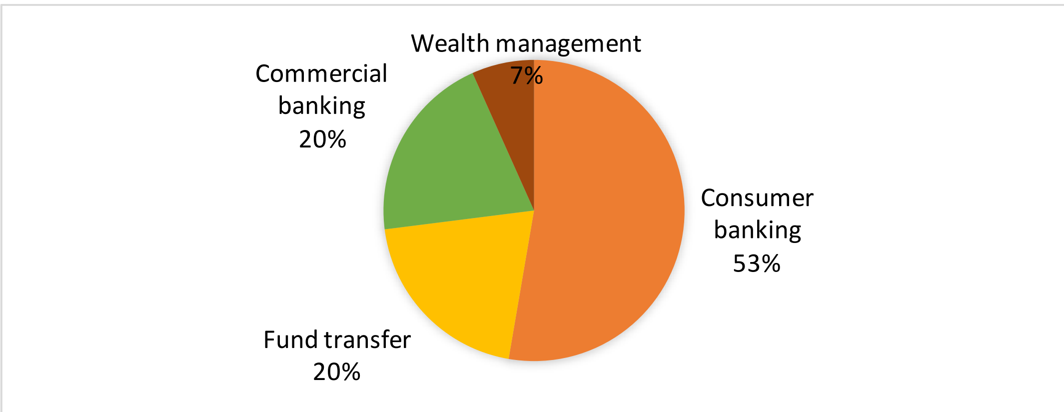


Figure4. Prime areas of the financial sector are likely to be the most disrupted by Fintech in future

According to the outcome of the survey, consumer banking will be hugely disrupted (53%), while fund transfer and commercial banking will be equally disrupted (20% each) and wealth management will be least (7%) disrupted by Fintech.

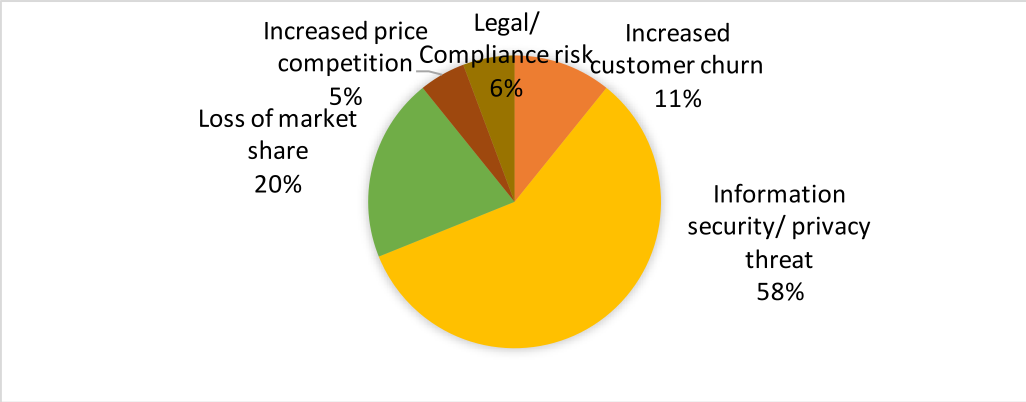


Figure5. Threats related to the rise of Fintech

The biggest threat, according to the response, is the information security and privacy threat which is 58% while loss of market share, increased customer churn, legal/compliance risk and increased price competition are merely 20%, 11%, 6% and 5% respectively.

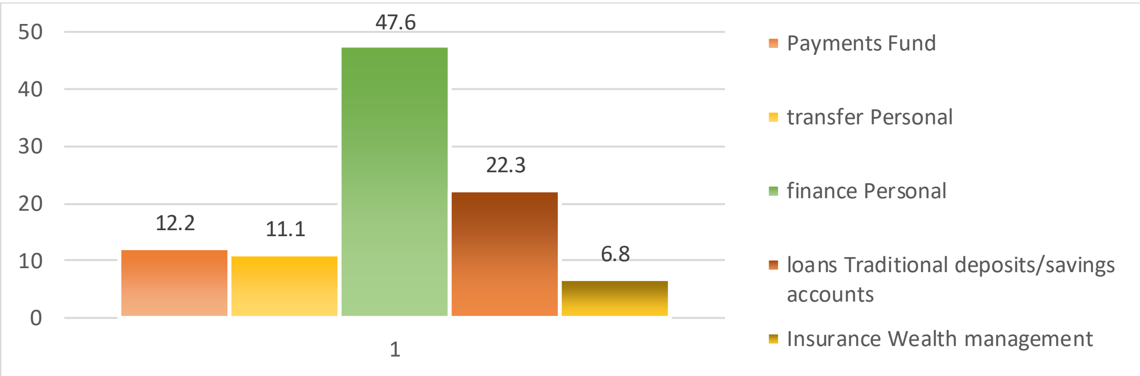


Figure 6. Ranking the activities as per customers already conduct with FinTech companies

As per the survey the Personal financing achieve the highest rank in the opinion of respondents as they believe their customers mostly used fin-tech for personal financing purpose. Insurance wealth management has got the lowest rank as in our country still this sector doesn't develop too much in the context of online issues. They still depend on representatives and face to face marketing or direct marketing.

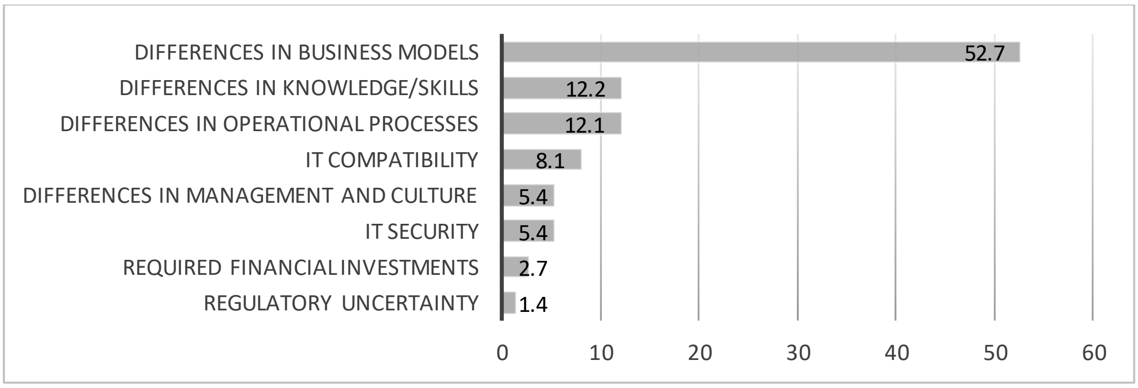


Figure-7. Ranking the challenges of Fintech

The biggest challenge that Fintech is going to face, according to the survey, is differences in business model (52.7%) followed by differences in knowledge/skills and differences in operational processes which pose less than one-quarter of the threat (12.25 and 12.1%) compared to the business model.

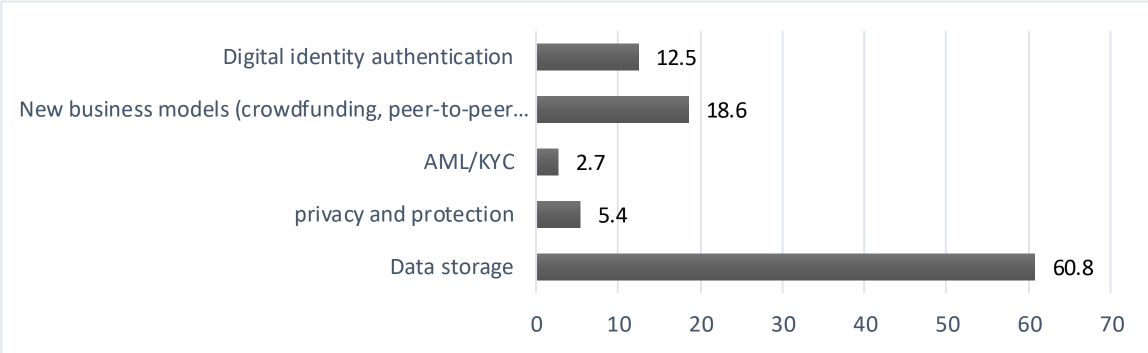


Figure8. Ranking the regulatory barriers to innovation in Fintech

The biggest barrier to Fintech seems to be data storage (60.8%) followed by New business models and digital identity authentication with 18.6% and 12.5% respectively. Privacy protection and AML/KYC do not seem to be much of a barrier at this moment.

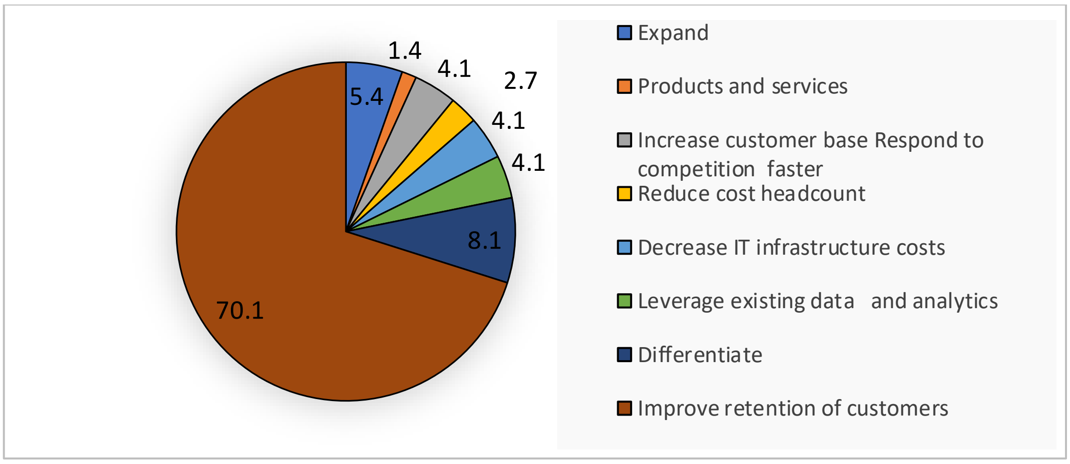
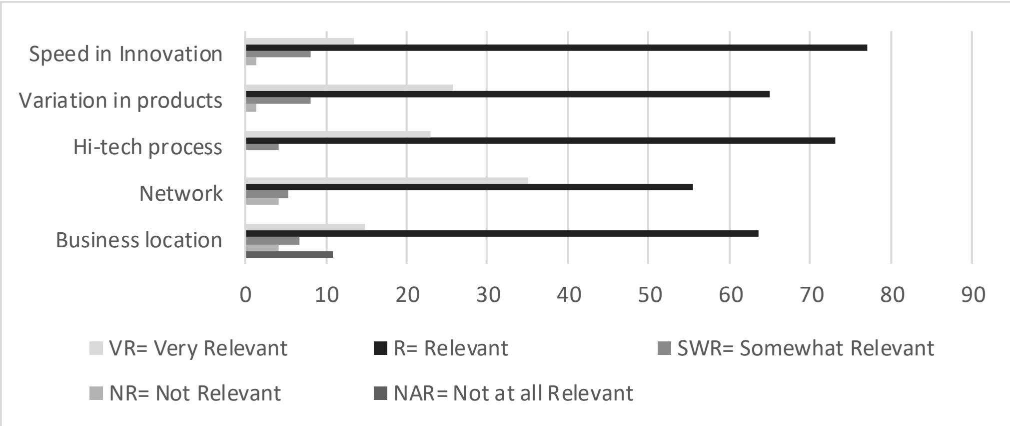
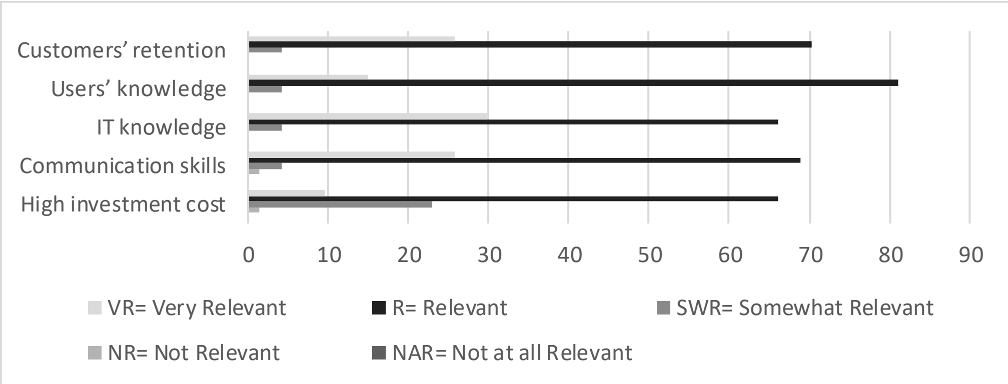


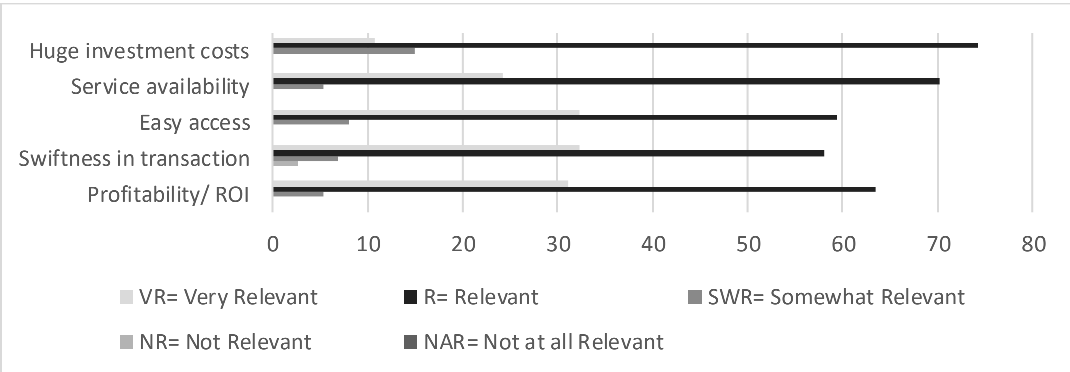
Figure9. Rank the opportunities related to the rise of Fintech within your industry

In terms of ranking based on opportunities related to the rise of Fintech within the respected industries of the respondents, improving the retention of customers gets the highest priority (70.1%) followed by differentiation, expansion and decreasing IT infrastructure cost with 8.1%, 5.4% and 4.1% respectively. So, it clearly depicts that retention of customers should get a vital role in the future planning processes of the companies.

4.6 The findings from the likert survey







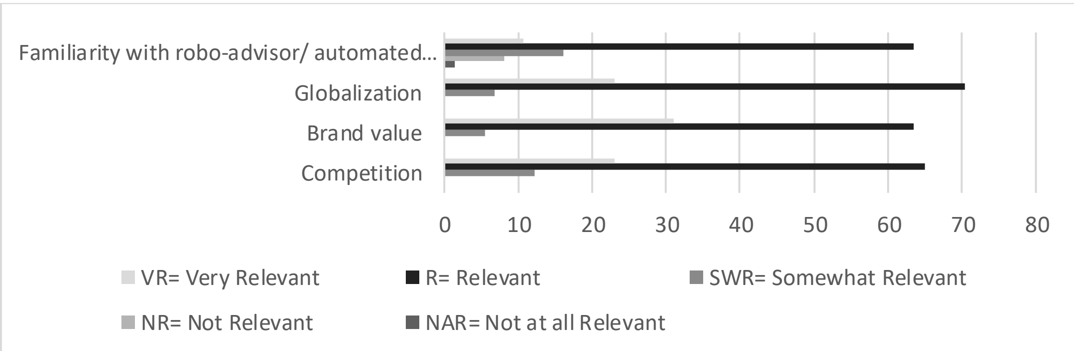


Figure 10. Survey results on the basis of Likert scale

When the respondents were questioned if few factors are relevant, less or not relevant, more than 70% respondents think that factors like globalization, service availability, huge investment cost, users' knowledge, high-tech process, speed in innovation are relevant factors while more than 30% think that brand value, profitability, swiftness in transaction, easy access and network are very relevant. More than 10% think that business location is not relevant at all.

5 Discussion and implication

The research designed to find the growth of Fintech and the importance of technology in the financial sector substantially established through all four hypotheses that there is in fact substantial growth of Fintech in Bangladesh with Block chain technology being the most prominent after Fund Transfer that is disrupting the financial sector. Mobile application has the largest impact now with websites ranked as the next biggest source of growth as a channel for Fintech technologies. However, traditional business models and data storage problems have been ranked as the biggest challenges facing fintech growth and majority of the technology targeted towards customer retention activities.

Among the major finding it can be seen human capital barrier is ranked quite high and it is also supported by a recent on research on intellectual capital in fintech services which also found that surveying 310 surveys that human capital development held the most weight in the development of Fintech in Bangladesh (Ashraf, 2019). A research of this nature has not been done in the context of Bangladesh and this research can bridge a big gap in the development of fintech in the financial sector as it analyzed experts working in the financial sectors to pinpoint the major opportunities and drawbacks.

6 CONCLUSION

In a developing country with a booming economy such as that being experienced by Bangladesh, which is also being governed by a political party which aims to transform the country to 'Digital Bangladesh' (under its Vision 2021 plan), traditional financial sector is bound to witness rapid digitalization.

The research findings delineated the prospects of expansion of Fintech in the country's financial sector, not only in terms of users but also in terms of usages. Integration of Fintech in many financial services is possible and such opportunities are likely to be explored by the country's firms, in fact, these opportunities are already being grabbed as seen by the emergence of Fintech companies. Our findings also bolster this claim: fintech is disrupting the financial sector.

However, changes in the financial sector due to Fintech would not occur overnight or without any obstacle. The current consumer base is habituated to traditional ways and privacy issues are likely to remain a major concern to them until security measures are not communicated to them effectively. Low internet penetration rate as well as banking penetration rate is also a challenge.

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