

# Explaining the pattern of implementing new financing methods in order to increase the speed and transparency in financial reporting (case study: private banks of the country)

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## Abstract

In the past, most of the financing process was to provide cash resources for the purchase of commercial goods, with the complexity of the business process and the way companies operate, the liquidity needs also changed. As a result, traditional financing methods were no longer able to respond to new needs. The expansion and increasing complexity of financing issues, as well as the introduction of new financing tools at the international level, have caused the financial system to require the introduction of new tools in order to achieve its goals. In this research, we seek to explain the pattern of implementing new methods of financing in order to increase the speed and transparency of financial reporting in private banks of the country. In this research, fuzzy Delphi method has been used to prioritize and present the pattern of financing technologies. The statistical population consists of 25 academic experts in the field of accounting and information technology. The results showed that international money transfer technology, money transfer or remittance technology, payment technology, lending and crowd funding technology, insurtech technology, financial management technology and capital markets technology respectively have the greatest effect on increasing the speed and transparency of financial reporting.

Keywords: financing technology, financial reporting, fintech  
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## 1 Introduction

Today's world is accompanied by many changes that affect people, organizations and societies in different ways. One of the most critical changes is the emergence of new technologies, which often have many potential benefits. However, the development and deployment of these technologies requires more recognition and attention from users [42]. On the other hand, accounting and traditional financial tourism are faced with insufficient analysis and incorrect presentation of information among users. Therefore, governments and users of commercial information need conditions

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to increase the transparency of the financial reporting process, and obtaining new financing technologies is considered vital to increase the transparency of the reporting process [5].

Cassell et al. [7], Lee et al. [31], and Hirst and Hopkins, [28]; They acknowledged that managers use flexibility in choosing their accountants to deliberately influence financial reports and gain personal benefits. Also, Cassel et al. [7], in the study between financial reporting transparency, inventory reserve and deferred tax assets, found that companies make transparent disclosures about their account activities when they decide to reduce their profits. One of the factors that affect transparent reporting is the use of FinTech or new financing technologies that can provide services to both businesses and individuals. The main users of FinTech are small businesses. That is, businesses that are often newly established and must both keep their financial costs low and move quickly, such as small e-commerce stores. But FinTech is also used for end consumers, big businesses and even communication Business to Business (B2B) [35]. FinTech seeks to reshape the existing financial industry by eliminating overhead costs, increasing the quality of financial services, and disintermediating traditional financial companies. The available statistics show that there is a bright prospect waiting for investment in the field of FinTech in the world, which has caused this field to receive special attention in recent years and a great demand for innovative and technological financial services among business and business activists. Work will be formed. Among the investments made, we can mention the formation of accelerator companies to cultivate new ideas in the field of FinTech, the creation of an idea exchange, as well as the creation of venture capital companies and funds. Finally, what is quite evident in this context is that the distance to the flourishing of the real capacity of FinTechs in the economy is very long [14].

## 2 Theoretical and background of research

The financial industry is undoubtedly very important to society and the daily lives of people around the world. Although this sector has undergone major transformations over the centuries due to changes in political and geographic regimes and laws, it is said that a new era for banks has been born [4, 32, 44]. The emergence of fintechs is an unknown phenomenon and is considered an important challenge for financial industry managers [15, 16, 23, 29, 41].

FinTech appears as a "buzzword" or buzzword, especially in the press, as if it is an important phenomenon that should be investigated by professionals related to the financial industry, information technology (IT) and innovation. In the current context, FinTech is a neologism that describes the connection of modern technologies (such as cloud computing, mobile internet) with business activities and financial services (such as loans, payments, transfer of monetary values and various banking operations). The term fintech, formed by merging the words finance and technology, refers to companies that use technology to operate outside of traditional business models for financial services and seek to change the way these services are delivered [21] using Communication, Internet and automatic information processing [2, 9, 22, 45].

According to Christensen's [13] theory of disruptive innovation, FinTechs can be classified into two categories: "sustainable FinTechs", for established financial service providers that use information technology through incremental innovation to protect their market positions; and "disruptive FinTechs" that are new. Companies and startups that challenge established providers by offering new products and services [12, 33, 30] have new business models that promise flexibility, they have more security, efficiency and opportunities than traditional financial services. In a rapidly changing economic environment and in light of costly regulatory requirements, traditional players in banking and financial services are facing a fundamental transformation in digital finance. Therefore, FinTech startups and even large IT companies are entering the financial industry, gaining a foothold and capturing customers traditionally served by established providers [22].

In this context, Eslami Milani and Esmaili [19] have studied the new ways and methods of project financing. The purpose of the research is to investigate new ways and methods of financing projects. The statistical population of the research is Maroon Oil and Gas Company. SPSS software was used for data analysis in the research. The results of the research showed that methods such as loans, lease-to-own, installment sales, technical assistance, participation in capital, profit sharing, industrial contracts and lines of credit, were identified and investigated as new ways and methods of financing projects.

Mehravar et al. [34] investigated the relationship between new financing methods and managers' skills in internal control weaknesses, emphasizing the effectiveness of financial reporting quality. The research is practical in terms of its purpose, and in terms of methodology, it is a causal (post-event) type of research. The statistical population of the research is all the chain stores in the city of Kerman, and using the systematic elimination sampling method, 174 stores were selected as the research sample. The method used to collect information is a library, and multiple regression with a pooled data model is used to test the hypotheses. The results of the research show that there is a

positive and significant relationship between new financing methods and managers' skills in internal control weakness, and the moderating variable has an effect on it and moderates this relationship.

Shafiei Dizaji and Azizzadeh [43] have investigated the relationship between the quality of financial reporting and modern financing methods. The purpose of the research is to investigate the relationship between the quality of financial reporting and modern financing methods in 124 telecommunications companies. Panel data model has been used to test research hypotheses.

Findings: The results showed that there is a positive and significant relationship between the quality of financial reporting and modern financing methods.

Badavar Nahandi et al. [3] investigated the transparency of financial reports through new methods of financing and depriving the interests of minority shareholders, emphasizing the role of financial reporting quality. The statistical population of the research includes the companies admitted to the Tehran Stock Exchange, and among them, 102 companies were selected as a sample during the years 1389 to 1394. To measure the deprivation of the interests of minority shareholders, the sum of the Herfindahl index has been used to measure the quality of financial reporting from the model of Francis et al. To test the hypotheses of the research, the multivariate regression model has been used. The results of the research show that there is a significant and positive relationship between the transparency of financial reports through new financing methods and the deprivation of the interests of minority shareholders. Also, the results show that the quality of financial reporting has a significant and negative effect on the relationship between the transparency of financial reports through new methods of financing and the deprivation of the interests of minority shareholders of companies.

Nagshbandi et al. [38] investigated the relationship between financing methods and the quality of financial reporting. The purpose of the research is to investigate the relationship between financing methods and the quality of financial reporting. In this regard, the information obtained from 55 companies admitted to the Tehran Stock Exchange between 2015 and 2015 was used. Multivariate regression and Eviews, SPSS and Image J software were used to test the research hypotheses. The results of the research show that there is a significant positive relationship between the two criteria of financing methods and the quality of financial reporting.

Heshmati [27] investigated the impact of new methods of financing on the quality of auditing and the quality of financial reporting. The purpose of his research is to investigate the impact of new methods of financing on the quality of auditing and the quality of financial reporting in companies admitted to the Tehran Stock Exchange. To achieve the objectives of the research, 111 companies were selected for a period of ten years from 1385-1394 and the required data were extracted and analyzed from their financial statements and other related reports. The results show that the new methods of financing have a significant effect on the quality of auditing and the quality of financial reporting.

Ahmadi and Moghimi [1] investigated the effect of new financing methods through loans and capital increase financing on the value of companies. The main purpose of the research is to use modern financing methods through capital increase (share interest and cash receivables) and loans (long-term loans and short-term loans) on the real returns of shares of companies listed on the Tehran Stock Exchange. For this purpose, the ratios of short-term debt to total assets, long-term debt to total assets, the percentage of capital increase and the real return of companies for a financial period between 1382 and 1384 have been examined and the statistical sample of this research consists of companies that They have only used capital increase or loans. and to collect information from library methods (books, publications, and professional and specialized articles) and to collect financial information to test hypotheses from the audited financial statements between 1382 and 1384 available in the Rahavared software and appropriate statistical tests including. The comparison test of the mean of two populations (t distribution) and the Pearson and k-s correlation coefficients have been analyzed with the help of SPSS software. In general, the findings of the research show that the companies that have used capital increase do not have a positive effect on the real returns of the companies' shares, but the companies that have used loans have a positive effect on the real returns of the companies' shares.

Mostafa Pour [36] has reviewed the new financing methods and tools with an emphasis on the debt market. The purpose of his research is to look at new financing methods and tools with an emphasis on the debt market. This research is descriptive and has collected the works of researchers in this field. The software used in the research is Delphi software. The results of the research indicate that modern financing methods and tools with an emphasis on the debt market include household financing through the bank, financing of companies from internal and external sources, government financing from public revenues, oil resources, Commitment resources and non-continuous resources.

Zakernia et al. [46] investigated the prioritization of factors affecting the choice of modern financing methods in Iran using the TOPSIS method in a fuzzy environment based on verbal variables. This research is of applied type and prioritized the factors using fuzzy TOPSIS method. The results show that the factors affecting the selection of new

financing methods are divided into three general categories. These factors include: factors related to the financing source, the financed company, and macro political and economic factors. After that, for each of these general factors, a series of minor factors have also been stated and based on importance and priority, minor factors have also been prioritized.

Also, in foreign studies, Bratten et al. [6] have investigated the relationship between the quality of financial reporting and new financing methods. The methodology of this research is descriptive-correlation studies. The statistical population of the present study was the National Telecommunications Company of Russia. In order to achieve the goal of the research, two hypotheses were formulated and analyzed using the generalized panel regression method. The findings of this research show the estimation of regression models and show that the quality of financial reporting has a significant relationship with modern financing methods.

Pavlopoulos et al. [39] have investigated the relationship between the new financing strategy and the skills of managers, emphasizing the role of the quality of financial reporting in municipalities in France. The research is practical in terms of its purpose, and from the point of view of correlation methodology, it is causal type (post-event). The statistical population of the research is the municipalities in France, and using the systematic elimination sampling method, 114 stores were investigated. Eviews version 9 software and logistic regression were used to test the research hypotheses. The results of the research show that there is a direct and significant effect between the skills of managers and the new financing strategy. The quality of financial reporting has a significant effect on the relationship between the new financing strategy and the skills of managers.

Dou et al. [17] investigated the relationship between the quality of financial reporting and modern financing methods with regard to the moderating effect of information asymmetry and ownership structure. Therefore, in this research, using the data of 100 member companies of the Hong Kong Stock Exchange, the relationship between the quality of financial reporting and modern financing methods has been investigated with regard to the moderating role of the two variables of information asymmetry and ownership structure. In this research, data and panel models have been used to test the hypotheses. The obtained results show that there is a positive and significant relationship between the quality of financial reporting and modern financing methods of companies listed on the Hong Kong Stock Exchange, and the research results show the significant role of the variable of information asymmetry on the relationship between the quality of financial reporting and new financing methods and the significant role of ownership structure variable on this relationship.

Muda et al. [37] have investigated the impact of new financing methods on future stock returns. The results of the research show that different methods of modern foreign financing have a negative effect on future stock returns. Also, based on the overinvestment hypothesis, the negative relationship between innovative financing transactions and future stock returns is maximized when the proceeds from these methods are invested in operational activities. In addition, due to transaction costs and information asymmetry between the company's management and external investors, the cost of internal financial resources should be lower than the cost of external financial resources. Therefore, it is expected that there is a positive relationship between the ratio of new domestic financing to new foreign financing and future stock returns.

Ham et al. [26] investigated the relationship between innovative financing methods with financial performance and financial reporting quality in Indian banks. In this research, the relationship between new financing methods and financial performance and the quality of financial reporting in Indian banks during 2013-2015 was investigated, and the results of the research showed that there is a positive relationship between new financing methods and financial performance. And there is a significant relationship between new financing methods and the quality of financial reporting and the value of the bank.

Dumitru et al. [18] identified and prioritized new financing methods for small and medium businesses according to the life cycle of the company. The research method should be ranked using the fuzzy AHP method for the four stages of the life cycle. Based on the results obtained, in the birth stage, financing through private sources, in the growth stage through capital, in the maturity stage, private sources and in the decline stage, financing through internal sources is the most important. Also, the research results show the importance of using managed funds, technical and credit assistance from the government, and the use of guarantees from guarantee funds at different stages of the life cycle.

Chen et al. [10] investigated the moderating effect of the company's financial situation on the relationship between new methods of financing and financial reporting in the New York Stock Exchange. To achieve this goal, 65 stock companies have been analyzed in the 11-year period between 2006 and 2014, the number of observations obtained is 715 company-years. The obtained results showed that there is a positive and significant relationship between new methods of financing and financial reporting. Finally, the financial status of the company is an influential factor in

the relationship between new methods of financing and financial reporting.

Gaynor et al. [24] have investigated financial reporting and new financing methods on the economic growth of companies. The research sample includes 100 companies admitted to the China Stock Exchange in the period of 2008-2014. Therefore, the model is evaluated using the panel data approach. The results show that the variables of new financing methods have a significant relationship with the economic growth of companies. Therefore, new methods of financing used by companies have a high impact on their economic growth, and new methods of suitable financing can cause better growth, and new methods of inappropriate financing can cause weak growth of companies. Also, the results show that the effects of financial reporting and new financing methods are different in different industries.

Eduardo et al. (2019) have stated the most important activities of FinTechs as follows:

Table 1:

<b>Fintech activities</b>	<b>Explanation of Fintech</b>
Lending and crowdfunding technology	Credit companies mainly include validation platforms as well as platforms for loan underwriters. They use "machine learning" technologies and algorithms to assess the reliability of borrowers.
Payment technology	Platforms such as Mobile Bank and Internet Bank that allow paying bills and other expenses online.
Financial management technology	There are programs that connect people's checking accounts, categorize their expenses and help them manage their finances.
Money / remittance transfer technology	Companies that transfer money mainly include card-to-card platforms for transferring money between people.
International money transfer technology	This platform allows people to send money abroad at the lowest real cost.
Money technology (cryptocurrencies, etc.)	Platforms that allow buying and selling digital currencies such as Bitcoin.
Wealthtech technology	Payment and collection companies use solutions to facilitate the processing of card-to-card payments. Companies like M-Pesa, ApplePay, Google Wallet or Paytm allow customers to use and enjoy the convenience of payment through their mobile phones or tablets.
Insurtech technology	These platforms make it possible to get quotes, compare and contract insurance online in the most diverse ways
Capital markets technology	Tools for financial institutions, such as banks, hedge funds, mutual funds or other institutional investors, ranging from alternative trading systems to software modeling and financial analysis.

### 3 Research questions

1. How much does crowdfunding and lending technology have an effect on increasing the speed and transparency in financial reporting of private banks?
2. How much does payment technology affect the increase in speed and transparency in financial reporting of private banks?
3. How much does financial management technology affect the increase in speed and transparency in financial reporting of private banks?
4. How much does the money / remittance transfer technology have an effect on increasing the speed and transparency in the financial reporting of private banks?
5. How does international money transfer technology affect the speed and transparency of financial reporting of private banks?
6. How much does money technology (cryptocurrencies, etc.) affect the increase in speed and transparency in financial reporting of private banks?
7. How much effect does Wealthtech technology have on increasing the speed and transparency in financial reporting of private banks?
8. How much effect does Insurtech technology have on increasing the speed and transparency in financial reporting of private banks?
9. How much does capital markets technology have an effect on increasing the speed and transparency in financial reporting of private banks?

### 4 Research methodology

In the present research, first, the fuzzy Delphi method has been used to explain the implementation pattern of new financing methods in order to increase the speed and transparency in financial reporting. Fuzzy Delphi method is derived from traditional Delphi method and fuzzy set theory. The fuzzy nature of this method leads to the consensus and agreement of experts in the form of group decision-making [25].

In fuzzy Delphi studies:

1. First, previous researches are reviewed and models, dimensions and components related to the research subject are collected.
2. Then a questionnaire is prepared using the results of previous researches.
3. In the next step, a panel consisting of managers of private companies is formed and after correspondence with them, questionnaires are distributed and collected.
4. Then the data is extracted through Excel and the Likert scale is converted into fuzzy numbers.
5. After that, the diffusing process takes place.
6. Then, in three stages, the questionnaires are distributed and collected until the acceptable threshold is higher than 0.2 and the agreement coefficient is higher than 75 percent.

The statistical population of the research was 25 university professors who had master’s and doctorate degrees in the fields of accounting, financial management and information technology and had been working in these fields for more than ten years.

The following table describes the distribution and collection of questionnaires:

Table 2: Description of distribution and collection of questionnaires

Round	Questionnaire distribution number	The number of questionnaires received	Received percentage
First	30	25	83.3
Second	25	25	100

In the first round, 30 questionnaires were distributed, and 25 answered them, and in the second round, 25 questionnaires were answered.

After obtaining the results of the fuzzy calculations, a questionnaire was designed based on the obtained variables and completed by the professors of related academic fields using the available sampling method. The results have been analyzed using SmartPLS structural equations.

### 5 Research findings

In addition to using the research literature, the fuzzy Delphi technique has been used to extract indicators and develop a conceptual model through the following steps:

1. Definition of linguistic variables: The research questionnaire was designed with the aim of obtaining the opinions of experts regarding their level of agreement with each of the items, and they expressed their opinion through verbal variables (very high, high, medium, low and very low). Since the different characteristics of people affect their mental interpretations of qualitative variables, the answers are defined in the form of triangular fuzzy numbers.

Table 3: linguistic expressions and fuzzy Delphi numbers

Verbal variables	Triangular fuzzy number	determined fuzzy number
very much	(0.75,1,1)	0.75
Much	(0.5,0.75,1)	0.5625
Medium	(0.25,0.5,0.75)	0.3125
Low	(0,0.25,0.5)	0.625
very little	(0,0,0.25)	0.625

## 2. First stage survey

At this stage, the conceptual model presented along with the description of the components was sent to the members of the expert group, and their level of agreement with each of the components was obtained, and their suggested points and corrections were summarized below.

Table 4: The results of the first survey

No	Components	Degree of agreement				
		very low	low	medium	high	very high
1	Lending and crowdfunding technology	0	2	5	10	8
2	Payment technology	0	0	1	15	9
3	Financial management technology	0	0	4	11	10
4	Money transfer / remittance technology	0	0	1	13	11
5	International money transfer technology	0	0	0	7	18
6	Money technology (cryptocurrencies, etc.)	3	8	14	0	0
7	Wealthtech technology	5	17	3	0	0
8	Insurtech technology	0	0	4	19	2
9	Capital markets technology	0	0	16	9	0

The table below shows the average views of the experts from the first survey:

Table 5: The average opinion of experts from the first survey

Indicators	Triangular fuzzy average			Definite score	Status
1 Lending and crowdfunding technology	0.490	0.740	0.910	0.713	Verify
2 Payment technology	0.580	0.830	0.990	0.800	Verify
3 Financial management technology	0.550	0.790	0.930	0.757	Verify
4 Money transfer / remittance technology	0.600	0.850	0.990	0.813	Verify
5 International money transfer technology	0.680	0.930	1.000	0.870	Verify
6 Money technology (cryptocurrencies, etc.)	0.140	0.360	0.610	0.370	Reject
7 Wealthtech technology	0.030	0.230	0.480	0.247	Reject
8 Insurtech technology	0.480	0.730	0.960	0.723	Verify
9 Capital markets technology	0.340	0.590	0.840	0.590	Verify

In this research, the threshold value of 0.5 is considered, and the results show the approval of 7 components.

As can be seen, international money transfer technology, money transfer technology, and payment technology have the highest level of agreement among experts, and money technology (cryptocurrencies, etc.) and WealthTech technology have the lowest level of agreement and are rejected as a result.

In the second phase survey, the second questionnaire was prepared and sent to the expert group members along with the previous point of view of each person and the extent of their difference with the point of view of other experts. The results of the second phase survey are presented in the following table:

Table 6: The results of the second survey

No	Components	Degree of agreement				
		very low	low	medium	high	very high
1	Lending and crowdfunding technology	0	0	2	13	10
2	Payment technology	0	0	0	16	9
3	Financial management technology	0	0	10	18	2
4	Money transfer / remittance technology	0	0	0	15	10
5	International money transfer technology	0	0	0	3	22
6	Money technology (cryptocurrencies, etc.)	0	0	2	21	2
7	Wealthtech technology	0	0	18	7	0
8	Insurtech technology	0	0	2	13	10
9	Capital markets technology	0	0	0	16	9

Table 7: The average opinion of experts from the second survey

Indicators	Triangular fuzzy average	Definite score	Status
1 Lending and crowdfunding technology	0.580 0.830 0.980	0.797	Verify
2 Payment technology	0.590 0.840 1.000	0.810	Verify
3 Financial management technology	0.410 0.650 0.870	0.643	Verify
4 Money transfer / remittance technology	0.600 0.850 1.000	0.817	Verify
5 International money transfer technology	0.720 0.970 1.000	0.897	Verify
6 Money technology (cryptocurrencies, etc.)	0.500 0.750 0.980	0.743	Verify
7 Wealthtech technology	0.390 0.640 0.820	0.617	Verify
8 Insurtech technology	0.580 0.830 0.980	0.797	Verify
9 Capital markets technology	0.590 0.840 1.000	0.810	Verify

According to Cheng Lin’s formula, the amount of disagreement between experts in the first and second stages is as described in the following table:

Table 8:

Indicators	first stage	second stage	The difference between the first and second stage
5 International money transfer technology	0.870	0.897	0.02
4 Money transfer / remittance technology	0.813	0.817	0.004
2 Payment technology	0.800	0.810	0.01
1 Lending and crowdfunding technology	0.713	0.797	0.08
6 Insurtech technology	0.723	0.743	0.02
3 Financial management technology	0.757	0.643	0.11
7 Capital markets technology	0.590	0.617	0.02

Since the agreement was reached on all indicators and the amount of disagreement among the experts in the second and third stages was less than the threshold, so the questionnaire was stopped in the second stage.

Therefore, the research model is designed as follows:

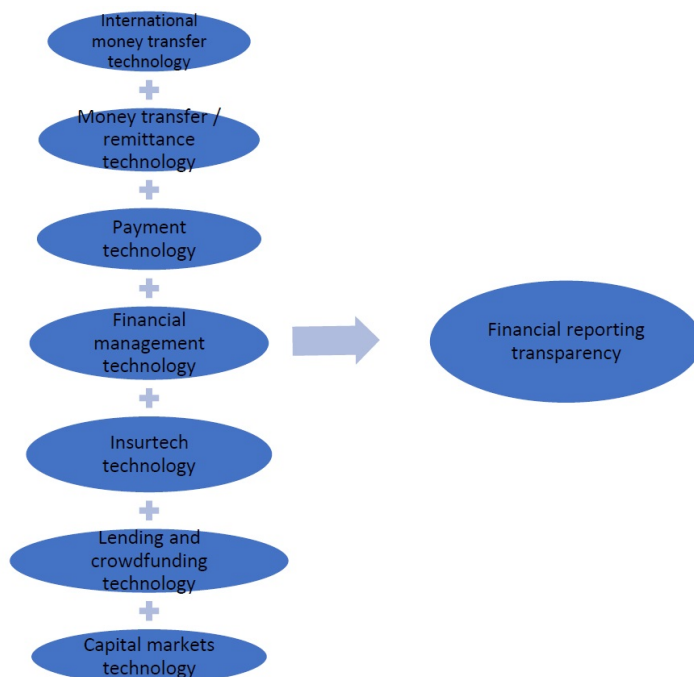


Figure 1: Research model



In this section, after carrying out the Delphi steps and confirming the research components by the elites and using the fuzzy ANP method, the confirmed variables were made into question items and 95 university professors in the field of economics were asked that each of these variables How much they affect financial transparency. In the table below, the descriptive statistics of the respondents are mentioned, and then the analytical and inferential statistics obtained from this questionnaire are detailed using structural equations and SmartPLS software.

Table 9: Descriptive statistics of questionnaire respondents

		Frequency	Percentage
Gender	Female	23	24.2
	Man	72	75.8
Age	30 to 40 years	17	17.8
	41 to 50 years	42	44.2
	51 to 60 years	25	26.4
	Above 60 years	11	11.6
Education	M.A.	3	3.1
	Ph.D. student	41	43.1
	Ph.D.	51	53.8

Quantitative data analysis: As mentioned, to test the research hypotheses, we used the structural equation model with partial least squares approach and using SmartPLS software. As can be seen in Figure 2, the significance coefficients (T-value) for all hypotheses are higher than 2.56, which indicates the confirmation of these hypotheses with a confidence level of 99%.

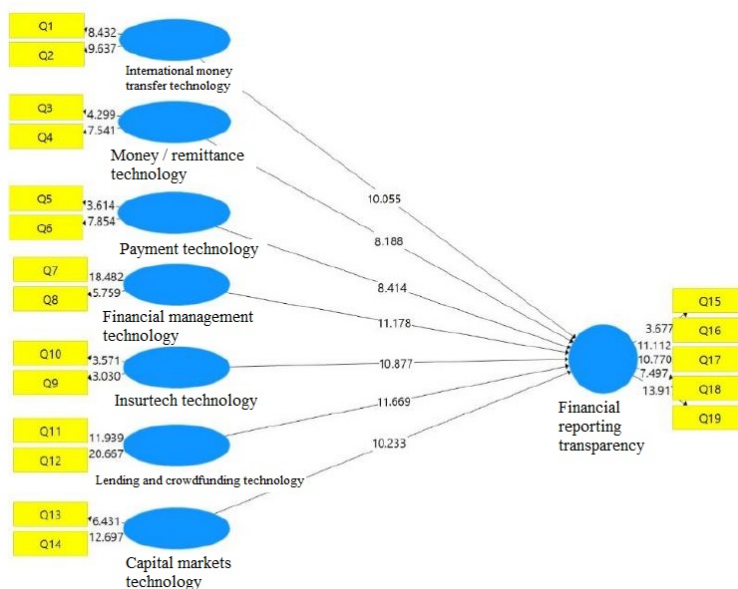


Figure 2: Structural equation model in the case of significant coefficients (t-value)

Figure 3 shows the direction between the variables, the coefficients of the path ( $\beta$ ), which expresses the intensity of the effect in the relationships. The arrows attached to the rectangles are the shared values of the indexes of each structure. The numbers in the circles are the RSquares value of endogenous (dependent) structures.

Before examining the assumptions and coefficients among them, the appropriateness of the model should be confirmed in the three parts of the measurement model, the Satari model, and the overall model, so that the results obtained from it can be trusted, and in fact, the reliability and validity of the model should be proven. For this purpose, Cronbach's alpha, composite reliability and convergent validity indicators have been used in the measurement model section.

The results regarding the variables measured in the questionnaire are as follows:

After confirming the appropriateness of the measurement model, we must point out the reliability of the structural model, which uses the  $R^2$  index for this purpose. This index is the average RSquares value of endogenous (dependent)

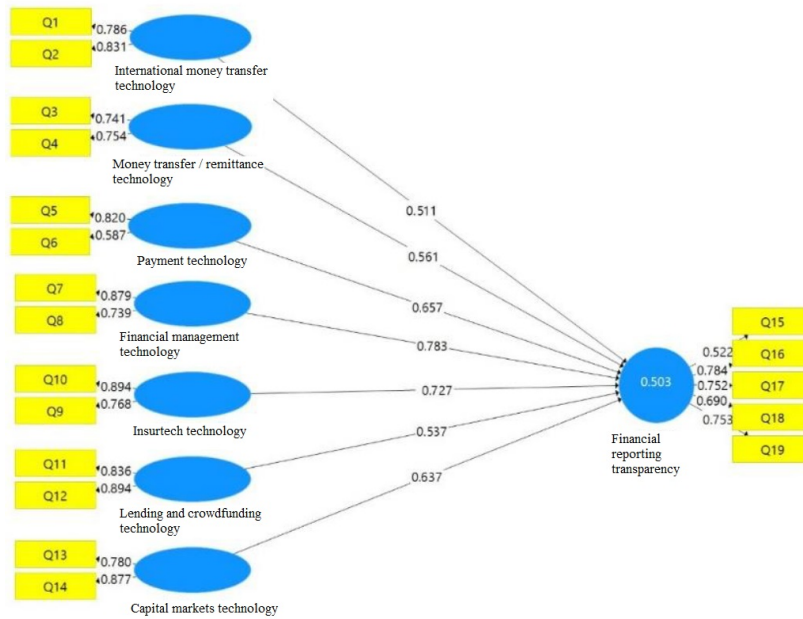


Figure 3: Model of structural equations in the case of standard coefficients

Table 10: validity and reliability of the measurement model

Variables	Cronbach's alpha < 0.7	Composite reliability < 0.6	Convergent validity < 0.5
Payment technology	0.788	0.792	0.882
Financial management technology	0.792	0.718	0.841
Money transfer / remittance technology	0.815	0.795	0.659
International money transfer technology	0.855	0.851	0.714
Insurtech technology	0.849	0.756	0.833
Lending and crowdfunding technology	0.893	0.831	0.827
Capital markets technology	0.901	0.873	0.767
Financial reporting transparency	0.815	0.769	0.795

structures of the model. Here, a value equal to 0.503 has been calculated, which is more than 0.19 (according to Chin [11]), so the fit of the structural model is confirmed.

Finally, the general fit of the model is mentioned, which is used in models based on partial least squares of the GOF (Goodness Of Fit) index. This index also works like the fit indices of the Lisrel model and is between zero and one, and a value greater than 0.36 indicates a good fit. The formula of this index is (Formula (5.1)- general fit of the model in PLS):

$$GOF = \sqrt{\text{average}(\text{Comunalitie}) * R^2} = \sqrt{0.789 * 0.503} = 0.629 \tag{5.1}$$

In the above formula, Comunalitie is the sign of the average communal values of the structures. Common values related to each index are obtained through the average values of the second order of the relationship between that index and the related structure, which are the factor loadings. Considering that the calculated GOF (Goodness Of Fit) value is greater than 0.36, it can be said that the overall fit of the model is strongly confirmed.

### 5.1 The effect of FinTechs on the transparency of financial reporting

As seen in figure 2 and 3 and table 11, the hypothesis of the impact of payment technology on the transparency of financial reporting is confirmed with the path coefficient (0.511) at the 99% confidence level ( $t$ -value = 2.58 < 10.055). Also, the effect of financial management on the transparency of financial reporting is confirmed with the path coefficient (0.561) at the 99% confidence level ( $t$ -value = 2.58 < 8.188). The impact of money transfer/remittance technology on the transparency of financial reporting is confirmed by the path coefficient (0.657) at the 99% confidence level ( $t$ -value = 2.58 < 8.414). The impact of international money transfer technology on financial reporting transparency is confirmed by the path coefficient (0.783) at the 99% confidence level ( $t$ -value = 2.58 < 11.178). The effect of

Table 11: path coefficients of hypotheses

interface variables	Path coefficient	T-value significance
Payment technology $\Rightarrow$ financial reporting transparency	0.511	10.055
Financial management technology $\Rightarrow$ financial reporting transparency	0.561	8.188
Money transfer / remittance technology $\Rightarrow$ transparency of financial reporting	0.657	8.414
International money transfer technology $\Rightarrow$ financial reporting transparency	0.783	11.178
Insurtech technology $\Rightarrow$ transparency of financial reporting	0.727	10.877
Lending and crowdfunding technology $\Rightarrow$ financial reporting transparency	0.537	11.669
Capital markets technology $\Rightarrow$ financial reporting transparency	0.637	10.233

InsurTech technology on the transparency of financial reporting is confirmed by the path coefficient (0.727) at the 99% confidence level ( $t$ -value = 2.58 < 10.877). The impact of crowdfunding and lending technology on financial reporting transparency is confirmed by the path coefficient (0.537) at the 99% confidence level ( $t$ -value = 2.58 < 11.669). The impact of capital markets technology on the transparency of financial reporting is confirmed by the path coefficient (0.637) at the 99% confidence level ( $t$ -value = 2.58 < 10.233).

## 6 Conclusion and discussion

In examining the topic of fintech, a significant increase in the number of publications in recent years, especially since 2016, is observed, which indicates the emerging interest of academic studies in this topic. Financing technologies make financial reporting of companies faster and more transparent. Considering that FinTech is redefining financial services in the new century, all new processes, products and business models in the financial services sector fall under fintech. Since the speed of doing things in today's digital age is recognized as a basic need, FinTech provided integration between accounting software and bank payment systems. What FinTech has provided for its users in this regard is the possibility of recording data related to bank transactions in the accounting software automatically without the need for an accountant to record it. On the other hand, the payment of many activities recorded in the software is done automatically without the need to go to the bank in person and due to this integration between the accounting software and the bank, all these activities lead to more transparency in the financial reporting function.

Financial reports provide financial information that is used by users in the process of making important decisions in an organization. Financial reports are historical and comprehensive so that they can be used as a basis for determining policy direction in an organization. Therefore, financial reports will be very effective and targeted if they have high quality and transparency.

The results of the present study are in line with the research of Chairina and Wehartaty [8]. He showed that information technology systems in accounting have a positive and significant effect on the quality of financial reporting. The use of accounting information system is very useful in realizing and providing useful information as a basis for decision making by interested parties and providing the goal of financial reporting.

Also, the research of Fazny and Setiyawati [20] states that the implementation of corporate governance principles, namely transparency, affects the quality of financial reports. Implementation of transparency improves the quality of financial reports and thus increases public trust. Redjo [40] states in his research that financial reports are a form of the need for transparency that information technologies such as FinTechs can affect.

One of the achievements of technology is the importance of finding data and information. In any business, financial data is the most important part of data, and FinTech has made it easier to collect this data and by providing accurate and timely financial information, it has ensured the quality of decisions made based on financial data. Because if technology had not been introduced in accounting, collecting and integrating the necessary data to make a decision on a particular case would have taken a lot of time, which in addition to imposing a high cost on the company, might also have expired.

In general, just as technology in other fields has led to the specialization of work and improvement of speed and quality, FinTech has also led to increasing the accuracy and speed of financial and accounting affairs and the specialization of the accounting profession. In fact, the important effect of FinTech is to increase the value of data and financial reports and clarify its role in the success of businesses.

Based on the results of the research and discussion, it can be concluded that new methods of financing or FinTechs have a significant effect on the transparency and speed of financial reporting. Based on the results obtained, it is suggested that financial organizations such as banks evaluate and improve the use of advanced technology for the use of accounting information systems that are currently being implemented regularly. Financial reports should be

transparent and easily accessible not only for interested parties but also for those involved in the implementation of company operations to improve the quality of information and company performance.

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