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Investigating the Effect of FinTech Implementation Components in the Banking Industry of Iran

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ABSTRACT

FinTech is a solution that strengthens financial communication and, when applied, provides new methods for performing smarter, more agile, and broader financial services. The purpose of this study is to investigate and analyze the factors that affect the implementation of FinTech in Iran's banking industry using structural equation modeling. The study aims to provide comprehensive solutions for removing barriers and fostering the development of the Iranian banking industry by fully understanding the current situation. This article follows a descriptive-analytical approach, and data collection was conducted through library studies and questionnaires. The statistical sample consisted of 12,147 personnel working in Iran's banks in 1400. Given the population size, Cochran's method and random sampling were employed to determine the sample size. The collected data were analyzed and classified using a questionnaire, a test of the main hypothesis and sub-hypotheses, and structural equation modeling conducted with smart PLS statistical software. The results obtained confirm the main hypothesis and the sub-hypotheses of the research. The findings indicate that the banking sector requires legalization and harmonization with upstream laws, as well as the development of infrastructure and tools, which are crucial for implementing FinTech strategies in Iran's banking industry. These measures aim to promote transparency, reduce costs, provide high-speed services, and advance toward a smart economy.

1 Introduction

FinTech is an emerging sector in the fourth industrial revolution that has transformed the traditional financial landscape of banks and financial institutions. It encompasses various aspects of the financial system [8]. These companies leverage technology to enhance the efficiency of financial services [22]. In today's business environment, characterized by globalization, increased competition, and rapid advancements in science and technology, particularly in information and communication technology, organizations must adapt to rapid technological changes in order to thrive in an unstable competitive

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market [5] [32]. Technologies such as blockchain, big data, and business intelligence offer valuable features [17]. While FinTech does not aim to dismantle traditional financial structures, many managers of financial intermediaries in the money and capital markets perceive them as competitors and a threat to their survival. Consequently, decision-makers and influential individuals in these markets are often resistant to the expansion of FinTech [2]. In Iran, where the FinTech industry is still in its early stages, regulatory bodies like the central bank have yet to establish precise and codified rules for dealing with financial technologies. This lack of clear regulations presents a significant challenge for companies operating in this field, as they must navigate new obstacles and comply with evolving laws as they undergo growth, promotion, and attract talent, which limits their business potential. Furthermore, the exchange of a large volume of financial information through FinTech software and platforms raises concerns about partial data loss, misuse, or damage, which can lead to the loss of household and enterprise capital resources and expose the economy to operational risks. In a study titled "FinTech and financial stability: Threat or opportunity?", Mohd Daud et al. [29] examined the relationship between FinTech and financial stability in a panel of 63 countries from 2006 to 2017.

The empirical findings indicate that FinTech promotes financial stability through artificial intelligence, cloud technology, and data technology. The results also suggest that the effect of FinTech on financial stability is complemented by bank concentration. In light of these findings, financial institutions should embrace FinTech and take the lead in evolving and creating an enabling FinTech ecosystem [29]. According to a report on "internal business intelligence," 48% of banking employees believe that new technologies like blockchain or distributed ledger technology will have the greatest impact on the banking sector in 2020 and beyond. From 2017 to 2022, the presence of physical branches in banks is expected to decrease by 36% due to the rise of fully-digital banks [1]. In Iran, the sixth development plan prioritizes financing and the development of financial instruments, encouraging financial and banking professionals to support FinTech startups for innovation and service expansion. FinTech is considered one of the most significant innovations in the financial industry, growing rapidly alongside the sharing economy, favorable laws, and information technology. The presence of numerous bank branches demonstrates well-established managerial capabilities, while the continuous processing of millions of transactions around the clock showcases the high technical capacity of Iranian banks [28]. Despite the pivotal role and importance of FinTech, realizing the transition from the traditional regulatory system to the new financial industry requires careful consideration of the impact of each dimension of FinTech implementation.

This transformation necessitates specific measures and policies, the understanding of which relies on comprehending the characteristics, functions, and structure of the financial industry system as an ecosystem. Consequently, given the expansion of banking transactions and business activities, FinTech holds great potential, and it is foreseeable that in the near future, all banking operations for individuals and legal entities will be conducted through software. Leading banks in this domain are poised for significant success in attracting deposits and serving customers.

2 Theoretical Framework and Research Background

FinTech, or financial technology, is an industrial technology in the field of economy and refers to companies that use technology to combine financial services with innovative technologies to be more efficient. Financial technology companies are generally start-ups that seek to position themselves in financial systems, challenge traditional companies, and create innovative business and financial models that

have a significant impact on financial markets and financial institutions [21]. Yang et al., 2022 in a study entitled Do fintech applications to promote regional innovation efficiency? Empirical evidence from China studies the impact of fintech on innovation efficiency and the spatial spillover effects of fintech by using regional-level data on China. The results suggest that fintech promotes overall innovation efficiency and launching efficiency but less affects R&D efficiency. Fintech also exhibits adverse spatial spillover effects on the surrounding regions in the launching stage. We further studied the effects of the breadth and depth of fintech on innovation and the impacts on different types of patents. The results show a heterogeneous impact of fintech, which generates regional development policy implications in the digital era. [23]

Allen et al., [16] in a study entitled FinTech, Cryptocurrencies, and CBDC: Financial Structural Transformation in China, Reviewing China's FinTech Experience, focusing on Payments, Digital Banking, Fintech Lending, and Recent Advances in its CBDC Pilots (e -CNY) The results showed that digital currency regulation could drive innovation growth by increasing public confidence in the market. e-CNY can become a global market through effective regulation that provides incentives and support to market participants. One of the key factors in the success of digital currencies has been their widespread acceptance. If Chinese e-CNY becomes a common currency, the introduction of the CBDC could potentially provide solutions to problems in traditional financial systems [16].

2.1 Wilson and Drash Models

Wilson [32] has identified five models of cooperation between banks and FinTech, which are:

1) partnership with financial startups
2) assignment of services to FinTech companies in order to reduce costs
3) participating as an investor in financial startups
4) playing the role of incubator or accelerator for start-ups
5) buying FinTech companies. [32]

From the perspective of Drasch et al [14]. Six models of cooperation between banks and FinTech based on the type of technology, growth rate, type of bank, bank role, strategic goals of the bank, the communication channel of the bank, and customers, business ecosystem, licenses, position in the value chain, the type of cooperation, the type of innovation, the holder of innovation were identified, which were divided into the following six groups, respectively, from the highest to the lowest level of cooperation:

1. Invest in FinTech
2. Provide solutions and strategies to innovate FinTech platforms
3. Creating technological innovation in line with new banking services
4. Access to capital markets for financial technologies to provide services
5. Mutual services to the bank for innovation in service delivery
6. Cooperation and participation as a venture capitalist in the early stages of access to technology. [14]

FinTech refers to new applications, processes, products, and new business models in the financial services industry. These solutions can be divided into 5 areas through which it is possible to increase the speed and customer satisfaction along with the quality of services for banks. These five areas are: focusing on customer service, business support in order to evaluate and provide credit, providing business and capital platforms, implementing platforms based on new technologies, and capital management [1]. Despite the great challenges and issues facing this field, until the early 80s, the field of electronic banking in Iran was limited to providing foreign products and localization of these products and services on

these products. As pioneers in this field, they suffered a lot. The presence of virtual branches in the form of electronic banking is a new gift of information technology for the world of banking and responding to this serious demand. Considering the opportunities that financial startups such as FinTech create for countries and looking at the population receiving banking services in Iran, it can be concluded that the highest penetration rates of these services are available in Iran [7]. Najafi et al. [25], in their research entitled Designing a model for managing the relationship between the Iranian banking industry and fintech and fintech startups, with a grounded theory approach, designed a model for managing the relationship between the Iranian banking industry and fintech, which includes causal conditions. Classified into two categories of micro and macro factors, contextual conditions include environmental complexities and organizational characteristics as intervening conditions. [25]

The consequences of this relationship are also classified into three categories: financial, process, and learning and growth. According to the extracted model, the identified strategies for this relationship are: creating, purchasing, investing, or leasing financial services from financial technology companies. Also, the central category of this research is a three-step process that includes exploring. And the evaluation of financial technologies (fintech), the selection and establishment of communication, and the maintenance and development of this relationship. Tabatabayi, et al [30]. revealed that human skills, brand orientation, and domestic social capital have a positive and significant effect on promoting technology reputation. In order to promote a business through technology reputation, marketing performance and customer performance must be emphasized [30]. Moradi et al. [24], in their research entitled Fintech startup development process in Iran, examined the Fintech startup development process in Iran, which in the initial stage of growth and maturity, as well as the challenges and obstacles of the Fintech industry. The results showed that the most important obstacles to the development of FinTech startups in Iran are: legislative challenges, lack of clear strategy in banks for cooperation and macro-political and economic conditions of the country, especially sanctions, and strategies such as formulating New standards and regulations tailored to the needs of startups, and in particular the facilitation of open banking processes and the mapping of the digital transformation roadmap of the banking industry with the cooperation of key stakeholders, can lead to the development of startups.

Zhongqing et al. [35] have studied the effect of FinTech acceptance on users of banking services by presenting an innovative technology acceptance model, the results of this study showed that respondents cited the popularity of the internet and smart gadgets among users, perceived ease, usefulness, and government support for innovation as a positive and facilitative factor, and the risk of privacy-preserving as effective barriers to banks' use of FinTech services [35]. Pobkova et al. [26] demonstrated that risky capital investment helps achieve growth goals such as innovative development, global competition, and increasing digital competition help. Hanif et al. [33] concluded that the expected performance and subsequent perceived risk of cyber-security are the main determinants of using mobile banking programs in the UK 55 +. Zhao et al. [19] showed that the consequence is that in dealing with FinTech development, banks need to focus more on the growing capabilities of FinTech technology rather than its problems and what competitors are doing. Small banks, in particular, can achieve reinsurance and business innovation with greater confidence by actively working with FinTech companies. Panpan et al. [27] examined whether and how FinTech improves the investment performance of listed companies. The results show that the firm's investment efficiency is positively related to the FinTech level, and this relationship is concentrated in some areas with low urbanization rates and low marketing, which indicates the pervasive nature of FinTech. The review of the previous research showed that the identification and ranking of effective components in the implementation of FinTech in the banking industry of Iran

in the studies conducted is unprecedented. Therefore, the present study, unlike other studies that usually extract some of the factors; tried to identify all macro and micro, systematic and non-systematic, technical and human, legal and operational, etc. factors affecting the implementation of FinTech and to classify and formulate it as a paradigm model based on the data-based method with Strauss, Corbin point of view. Also, for better ranking of factors, the structural equation method or smart PLS software was used. The modelling method by smart-PLS software has many advantages such as estimating multiple relationships, the ability to measure latent variables, calculating measurement error, the ability to check the effect of alignment, testing fake and unreal relationships, and so on. Another innovation of the current research is presenting latent actors based on the model presented in smart-PLS. Finally, based on the model ranking, the proposed solutions were prioritized so that managers and officials of the banking system could better understand the operational importance of the solutions.

Certainly, countries that are looking for faster growth in the financial and economic fields in order to have more economic relations with other countries in the world, should make the most of these technologies. It has improved significantly compared to the past and in recent years, special attention has been paid to this issue. Capital markets are using this technology extensively and businesses are turning to it more and more. For many years, the financial sector in Iran has not changed much, because of the existing conditions and the existence of restrictive sanctions. Therefore, in recent years, the demand for services based on new technologies has been welcomed and their growth has increased.

2.2 Conceptual Model of the Research

The conceptual model of the current research is presented in Figure 1, The proposed model of research is based on the grounded theory method through interviews and three-step coding and the paradigm model of Strauss and Corbin. in which effective components in FinTech implementation in Iran's banking industry are presented to identify the components of previous research studies and documents. In this field, as well as interviews and surveys of 15 experts in the financial and banking industry have been used. These factors are described in Table 1.

Table 1: Effective Components in FinTech Implementation in Iran's Banking Industry

Dimensions	Dimensions	Number	Component
(Causal condition)	Upstream documents	1	The role of legislation
		2	The role of policies
		3	Legal infrastructure
	Decisions	4	Government facilities
		5	Legal incentives
		6	Reform macro-government policies
(Axial coding)	Structural arrangements	7	Create an integrated structure
		8	Transparency and proper flow of information
		9	Reengineering the economic structure
		10	Privatization of industry
		11	Professional executive elements
(Context condition)	Culture	12	Intention to use technology
		13	Culture of participation
		14	Entrepreneurial culture
		15	People taking risks

Table 1: Effective Components in FinTech Implementation in Iran's Banking Industry

Dimensions	Dimensions	Number	Component
		16	The role of learning and teaching
		17	The role of trust-building
(Confounding condition)	Technology	18	Financing and capital investment spheres of innovation and technology
		19	Indigenous technology in Iran
		20	The role of enterprise development services and angel investors invest in start-ups
		21	Acceleration of the innovation economy
		22	Progress of Iran in the field of financial technology and new banking services
		23	Create communication channels
Processes and strategies	Strategic strategies	24	Cybersecurity
		25	Establish financing processes
		26	Finn financing strategies using single
		27	Accessibility
Consequences	Advantages	28	Improving the business climate deal
		29	Performance improvements
		30	Virtual banking

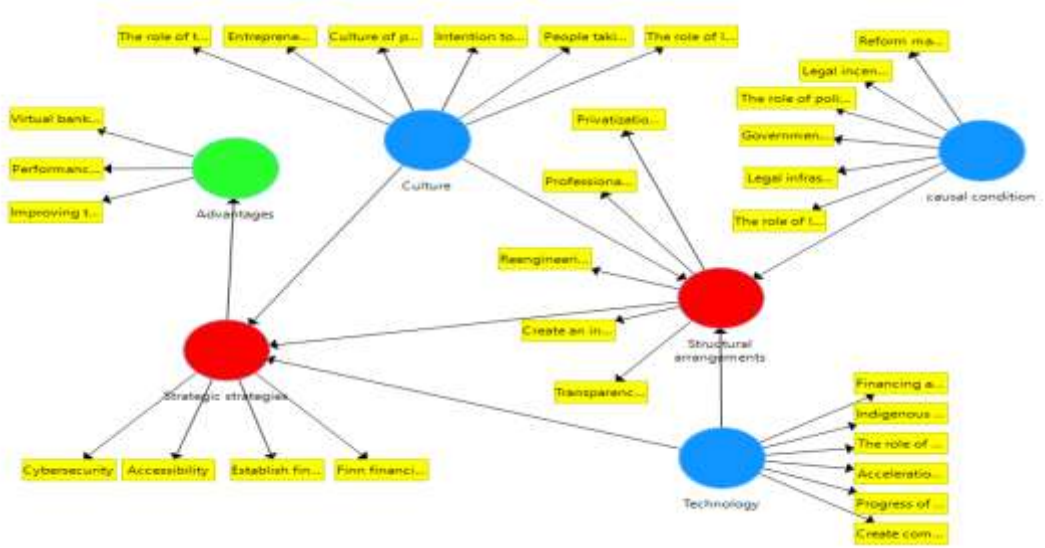

Fig. 1: Paradigm Model of Research (Researcher Source)

3 Research Hypotheses and Methodology

According to what is clear in the research background as well as in the conceptual model, The purpose of this study is to prioritize each of the identified factors and also to fit the proposed model So the research hypotheses are as follows:

H1: Causal Condition has an effect on structural arrangements.

H2: Cultural factors have an effect on strategies and strategies.

H3: Cultural factors have an effect on structural arrangements.

H4: Technology factors have an effect on strategies and strategies
H5: Technology factors have an effect on structural arrangements.
H6: Structural arrangements have an effect on strategies and strategies.
H7: Strategies and strategies have an effect on the benefits of implementing the model.

3.1 Research Methodology

The present study is of descriptive-survey research in terms of practical purpose and in terms of the data collection method. The statistical population of the study also includes all employees working in the field of information technology and modern services in the banking industry of Iran. Due to its unlimitedness and based on the Cochran sampling formula, 372 people have been selected as the statistical sample. Also, available random sampling methods will be used in the present study. Finally, the collected data were analyzed using structural equation modeling by Smart PLS software.

3.2 Data Collection Method

In the present study to collect data, a questionnaire was used. The researcher seeks to match the current state of the organization in the digital transformation of the organization with the questions. The distribution of components according to the dimensions considered in Table 2 is.

Table 2: Dispersion of Questions in Questionnaire

Dimension	Question Number
Causal Condition	1-6
Structural Arrangements	7-11
Culture	12-17
Technology	18-23
Strategic Strategies	24-27
Advantages	28-30

4 Results and Data Analysis

To test the model presented in this study, the output of smart PLS 3.2.8 software was used as follows and the necessary analysis was performed in the following three sections:[12]

• fit the measurement model
• structural model fit
• overall model fit (measurement and structure)

First, the correctness of the relationships between the structures as well as the measurement model was ensured using validity and reliability assessment methods is ensured, then the relationships in the structural part are examined, and finally, the model is investigated from the perspective of measurement and structure (overall model fit). It should be noted that as stated in the description of the advantages of PLS software, in this part, the test of data normality is ignored.

4.1 The Measurement Model Fit

The requirement of factor analysis is that the correlation between variables is not zero, but if the correlation matrix of the matrix is identical, it means that all correlation coefficients are zero. If Bartlett's test is significant, it means that the correlation matrix is not identical and there is a correlation between the variables and it is possible to perform factor analysis.

4.1.1 Internal Coordination (Reliability of the Questionnaire)

The most popular tool for testing the reliability of a questionnaire is the Cronbach's alpha coefficient, which is used to calculate the internal consistency of a measurement tool, including questionnaires that measure different characteristics. The results of the questionnaire reliability test are shown in Table 3.

Table 3: Cronbach's Alpha

Variable	Cronbach's Alpha Coefficients
Advantages	0.891
Culture	0.909
Strategic Strategies	0.875
Structural Arrangements	0.926
Technology	0.949
Causal Condition	0.931

In the present study, Cronbach's alpha coefficient for research constructs is over 0.6. Also, Cronbach's total alpha of the questionnaire is 0.912, the obtained coefficients indicate good reliability of the measurement tool.

4.1.2 Combined Reliability (CR)

Since Cronbach's alpha criterion is a traditional criterion for determining the reliability of structures, the PLS method uses a more modern criterion than Cronbach's alpha called combined reliability. This criterion was introduced by (Werts, [31]) and its superiority over Cronbach's alpha is that the reliability of the structures is calculated not in absolute terms but according to the correlation of their structures with each other. Some researchers also introduce the Combined Reliability Criterion (CR) through Rho. The amount of CR of a structure is derived from a fraction the numerator of which is the variance between a structure and its indices, and the denominator of which is the variance of the structure and its indicators plus the amount of measurement error. If the CR value for each structure is above 0.7, it indicates the appropriate internal reliability for the measurement models and the value less than 0.6 indicates the lack of reliability [31].

Table 4: Construct Reliability and Validity

Variable	Rho	Average Variance Extracted (AVE)	Composite Reliability
Advantages	0.892	0.731	0.89
Culture	0.911	0.626	0.909
Strategic strategies	0.881	0.637	0.874
Structural arrangements	0.927	0.716	0.926
Technology	0.949	0.757	0.949
causal condition	0.931	0.692	0.931

4.1.3 Convergent Validity AVE

Convergent validity exists when the CR is greater than 0.7, CR must also be larger than AVE. In this case, the condition of convergent validity will be present. In short, we have:

- CR> 0.7
- CR> AVE
- AVE> 0.5

Considering that the coefficients of each of the latent variables of the research are defined higher than the quorum, so these results indicate the appropriate internal stability for the measurement models.

4.1.4 Divergent validity

Divergent validity is opposite to convergent validity. Fornell and larcker [15] stated that divergent validity is acceptable when the AVE value for each structure is greater than the common variance between that structure and the other structures (i.e., the square of the correlation coefficients between the structures) in the model. Therefore, according to Table 4, it can be said that in the present study, due to the fact that the value of the root of the AVE in the main diameter of the matrix is greater than the correlation between them in the lower and left cells of the original diameter, so the model divergence validity is appropriate [15].

Table 5: Discriminant Validity - Fornell-Larcker Criterion

Variable	Advantages	Culture	Strategic strategies	Structural arrangements	Technology	causal condition
Advantages	0.906					
Culture	0.721	0.83				
Strategic strategies	0.77	0.76	0.853			
Structural arrangements	0.794	0.819	0.815	0.879		
Technology	0.777	0.786	0.794	0.844	0.893	
causal condition	0.697	0.745	0.693	0.763	0.75	0.862

Table 6: Discriminant Validity - Heterotrait-Monotrait Ratio (HTMT)

	Advantages	Culture	Strategic strategies	Structural arrangements	Technology	causal condition
Advantages						
Culture	0.8					
Strategic strategies	0.864	0.845				
Structural arrangements	0.875	0.891	0.899			
Technology	0.845	0.844	0.865	0.9		
causal condition	0.765	0.807	0.762	0.822	0.797	

4.1.5 HTMT Single-Dual Divergent Validity

Heterotrait-Monotrait ratio or HTMT index is translated as asingle-dual validity criterion. This criterion was proposed by Henseler et al. [18] for validation evaluation. The HTMT standard replaces the old Fornell-Larcker method. HTMT standard limit is 0.85 to 0.9. Due to the fact that all components of the FinTech model are within the allowable range and are less than 0.9, it indicates a good relationship between the indicators and their manufacturer [20].

4.2 Structural Model Fit

4.2.1 Confirmatory Factor Analysis

In the present study, in order to understand the items expressing the factors (structures) in question, confirmatory factor analysis has been used. Confirmatory factor analysis is used to measure the validity and reliability of the measurement scale. In confirmatory factor analysis, the closer the factor load is to number one, in fact, indicates that the questionnaire questions are more strongly related to latent variables, and if the standard factor load is zero, it means that there is no relationship between the questionnaire questions and the latent variable. Negative factor load means the backward effect of the questionnaire questions on the latent variable. Fresnel and locker used two criteria for factor analysis: first, the factor loads for the observed variables must be greater than 0.5, and second, the reliability of the sum of the variables expressing the factor must be greater than 6.6 0. The results of confirmatory factor analysis are shown in Table 7. All factor loads of the variables are approximately 0.5 or greater than 0.5, and Cronbach's alpha, which indicates reliability or internal validity, is all greater than 0.6. Therefore, it can be claimed that items represent agents.

Table 7: Results of Confirmatory Factor Analysis

Dimensions	Question Number	Items (Questions)	Factor Load
Axial factors (Causal condition)	1	The role of legislation	0.840
	2	The role of policies	0.847
	3	Legal infrastructure	0.852
	4	Government facilities	0.816
	5	Legal incentives	0.840
	6	Reform macro-government policies	0.795
Axial phenomenon (Structural arrangements)	7	Create an integrated structure	0.832
	8	Transparency and proper flow of information	0.854
	9	Reengineering the economic structure	0.862
	10	Privatization of industry	0.834
	11	Professional executive elements	0.848
Underlying factors (Culture)	12	Intention to use technology	0.797
	13	Culture of participation	0.712
	14	Entrepreneurial culture	0.766
	15	People taking risks	0.820
	16	The role of learning and teaching	0.803
	17	The role of trust-building	0.841
Interfering factors (Technology)	18	Financing and capital investment spheres of innovation and technology	0.891
	19	Indigenous technology in Iran	0.875
	20	The role of enterprise development services and angel investors invest in startups	0.867
	21	Acceleration of the innovation economy	0.867
	22	Progress of Iran in the field of financial technology and new banking services	0.859
	23	Create communication channels	0.862
Processes and strategies (Strategic strategies)	24	Cybersecurity	0.805
	25	Establish financing processes	0.717
	26	Finn financing strategies using single	0.904
	27	Accessibility	0.753

Table 7: Results of Confirmatory Factor Analysis

Dimensions	Question Number	Items (Questions)	Factor Load
Conse-quences (Advantages)	28	Improving the business climate deal	0.871
	29	Performance improvements	0.880
	30	Virtual banking	0.811

4.2.2 The Coefficient of Determination

R2 is the square of the multivariate correlation coefficient, which is called the coefficient of determination. Another indicator of the suitability of the model is the coefficient of determination. The coefficient of determination indicates the ratio of change in the criterion variable that can be attributed to the change of predictor variables [11]. In this research, R2 values have been calculated in the general and partial models for the research variables. The table of coefficients of determination for latent variables of the model shows that the rate of change of variables is determined by the variables entering them.

Table 8: Results of Determination Coefficient and Adjusted Coefficient of Determination

Variable	R Square	R Square Adjusted
Advantages	0.754	0.753
Strategic strategies	0.836	0.834
Structural arrangements	0.876	0.874

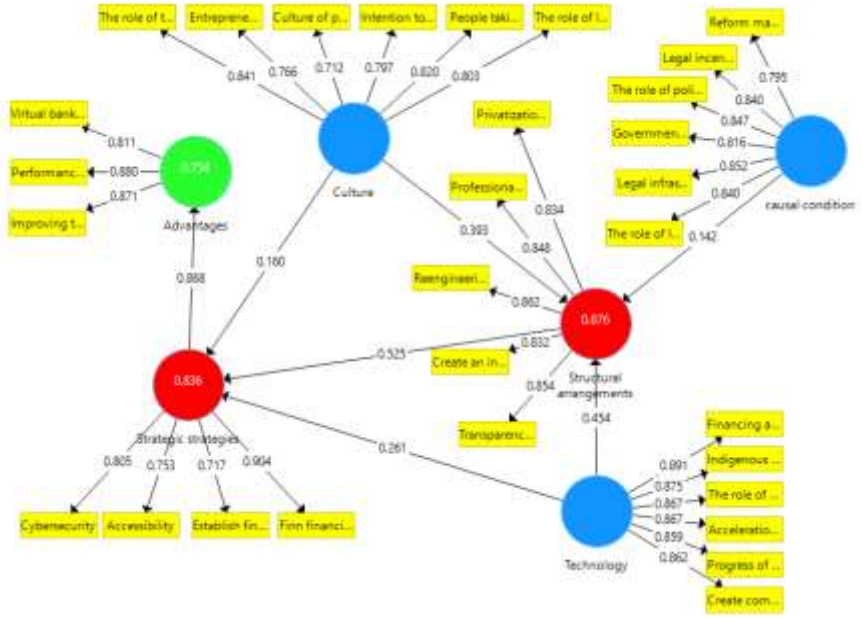

Fig. 2: The Results of Structural Equations Based on Path Analysis

4.2.3 The Path Coefficient

The path coefficient indicates the existence of a linear causal relationship and the intensity and direction of this relationship between the two latent variables. In fact, it is the same regression coefficient in the standard model that we observed in simpler models of simple and multiple regression. It is a number

between -1 and +1, which, if equal to zero, indicates the absence of a linear causal relationship between the two latent variables.[11] As can be seen in Table 9, The value of the obtained path coefficients indicates a positive relationship between the latent variables of the model.

Table 9: Results of the Path Coefficient

	Advantages	Culture	Strategic strategies	Structural arrangements	Technology	causal condition
Advantages						
Culture			0.16	0.393		
Strategic strategies	0.868					
Structural arrangements			0.525			
Technology			0.261	0.454		
causal condition				0.142		

4.2.4 Effect Size Index (F^2)

The effect size is another indicator of the fit of the structural part of the model and applies to exogenous independent variables. According to Cohen (1988), the effect size $F^2$is relative to the part of the variance of the endogenous latent variable, which remains unexplained in the model. According to Cohen, the values 0.02, 0.15, and 0.35 for F^2 represent small, medium, and large effects, respectively [10].

Table 10: Results of the Effect Size Index(F^2)

	Advantages	Culture	Strategic strategies	Structural arrangements	Technology	causal condition
Advantages						
Culture			0.030	0.292		
Strategic strategies	3.066					
Structural arrangements			0.219			
Technology			0.075	0.412		
causal condition				0.049		

4.2.5 Significant Values of T-Test

The value of t-statistic is in fact the main criterion for confirming or rejecting hypotheses. If this value of statistics is higher than 1.64, 1.96, and 2.58, respectively, we conclude that the hypothesis is confirmed at the levels of 90, 95, and 99%. It should also be said that if the value of the path coefficient between the independent latent variable and the latent dependent variable is positive, we conclude that by increasing the independent variable we will see an increase in the dependent variable, and vice versa if the value of the path coefficient between the independent latent variable and the latent dependent variable is negative. We find that by increasing the independent variable we will see a decrease in the dependent variable. As can be seen in Table 11, all significant coefficients obtained are greater than 1.96, which indicates the confirmation of the hypotheses. In Figure 3, the results of structural equations based on significance coefficients are shown:

Table 11: Path Coefficients - Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Culture -> Strategic strategies	0.192	0.197	0.058	3.318	0.001
Culture -> Structural arrangements	0.335	0.332	0.063	5.290	0
Strategic strategies -> Advantages	0.77	0.772	0.027	29.280	0
Structural arrangements -> Strategic strategies	0.4	0.401	0.06	6.514	0
Technology -> Strategic strategies	0.306	0.299	0.07	3.852	0
Technology -> Structural arrangements	0.446	0.443	0.059	6.982	0
causal condition -> Structural arrangements	0.18	0.186	0.056	3.368	0.001

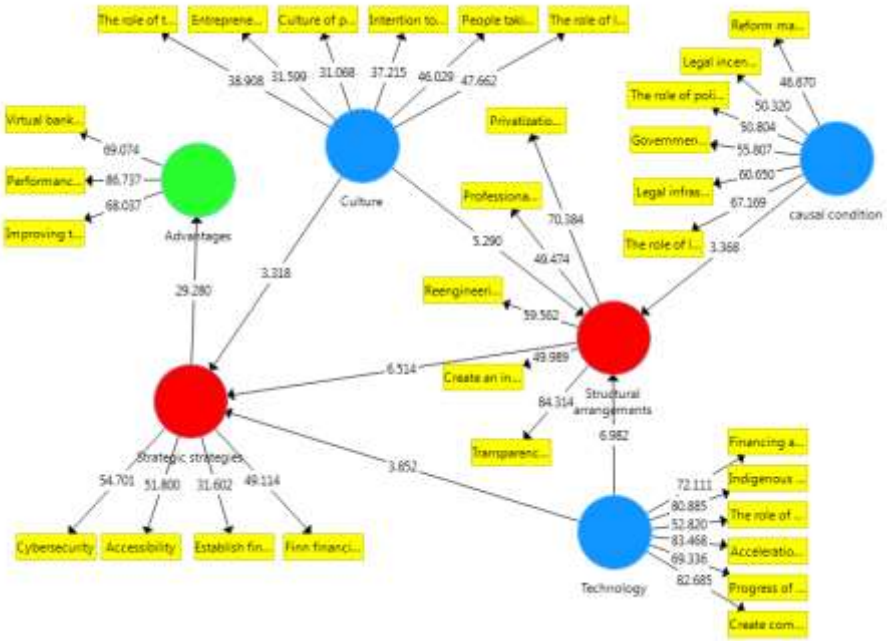

Fig. 3: Results of Structural Equations Based on Significance Coefficients

Table 12: Stone - Geiser Index Values

	SSO	SSE	Q^2 (= 1-SSE / SSO)
Advantages	801	348.092	0.565
Culture	1,602.00	737.509	0.54
Strategic strategies	1,068.00	520.46	0.513
Structural arrangements	1,335.00	512.323	0.616
Technology	1,602.00	522.891	0.674
causal condition	1,602.00	629.433	0.607

4.2.6 Stone-Geyser Index (Q^2)

The Q^2 index indicates the predictive power of the model in endogenous structures. If the value of the Q^2 index is positive, it indicates that the model fits and the model have good predictive power As can

be seen in Table 12, the value of the Q^2 index is positive for all indices, so the fit of the research model is desirable [18].

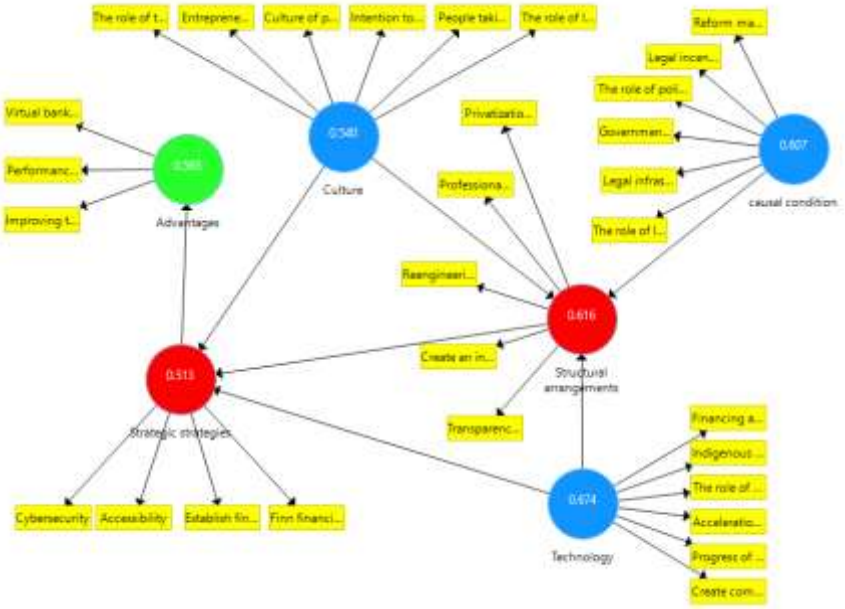

Fig. 4: Results of Structural Equations Based on Stone - Geiser Index Values

4.3 Overall Model Fit

Model fit means the extent to which a model is compatible with the relevant data. In a model, poor fit indicators are evidence that the model is not supported by the data and there is no agreement between them. There is a wide range of criteria and indicators of fitting that can be used to measure the fit of the model [12]. The fit indices of the research model were examined and the results are presented in table 13, which is interpreted below.

Table 13: Index - Fit of the Model

	Saturated Model	Estimated Model	
SRMR	0.027	0.036	
d_ULS	0.35	0.614	
d_G	0.42	0.439	
Chi-Square	570.23	590.556	
NFI	0.926	0.923	

Studies show that the value of a good fit index depends more on the internal model than on the external model. In this study, as shown in Table 13, the numerical value of the internal model is equal to 0.902. Goodness indicators of relative and absolute fit are both descriptive indicators. Each of these indicators is in the range between 0 and 1, and the closer to one, indicate the better and more complete fit of the model is present. In general, these four indicators fit the quality of the model. According to Table 13, we conclude that the relative fit goodness index is more suitable for this model than the absolute one. Based on Zhang [34], and as seen in the model fit tables, it can be concluded that the values of the

model fit indicators represent a good fit of the model and the tested model is approved. Therefore, after confirming the model, the results of path analysis can be used [12].

5 Discussion and Conclusion

In general, it can be said that according to the research findings, the studied markers provide a suitable factor structure for measuring the studied dimensions in the research model. In other words, all markers can be used as underlying factors of their own structures and can predict them. Since previous studies have paid less attention to the organizational factors of education transfer in particular and have examined more individual factors, in the current study, an attempt was made to examine the organizational factors of education transfer in more depth, hence more comprehensive findings were achieved in this regard. Regarding the factors affecting the implementation of FinTech in Iran's banking industry, the findings showed that all identified components and dimensions have a positive effect on the implementation of FinTech in the banking industry. The results of the study showed that FinTech is the solution that strengthens the ways of financial communication and if this technology is applied, new methods will be presented in performing smarter, more agile, and wider financial services. Some countries have been able to use the capacities of the FinTech industry to make significant changes and improvements in financial services, especially in areas such as micro and individual loans, crowdfunding, productive investment improvement, and financing for small and medium-sized enterprises. The improvement of these services in Iran has been of high importance and providing a coherent model for the implementation of FinTech can be a great help in changing the financial industry.

FinTech faces serious challenges in the field of infrastructure and decision-making of regulatory bodies, which has made the development of the FinTech industry require measures at the national level. According to the results of the current study, the creation of upstream and regulatory rules in the field of new banking trends such as authentication, digital signature, blockchain, and wallet and the cooperation of all actors inside and outside the industry with each other is very important in facilitating banking and finite businesses. It reduces costs and increases speed and performance in service delivery and provides transparency. In the present study, in order to investigate the implementation components of FinTech in the banking industry of Iran, the factor analysis method was used. The data collection tool was a questionnaire consisting of 30 questions that were distributed among the target community that is the staff and the managers of IT departments active in the field of electronic banking. 267 questionnaires were collected as a sample. After collecting and analyzing the questionnaire data using exploratory factor analysis, the factor load of each component was extracted.

The initial reliability of the questionnaire was 93% using Cronbach's alpha test. In order to validate the proposed model, the PLS partial least squares method was used. This method is used for the predictive model of instruments, especially when the number of items of each factor is large and there are multiple alignments between them, this approach is the first option for estimating the model. Based on the obtained results, the components and all hypotheses of the research were confirmed. The results of factor analysis showed that all variables observable in the questionnaire of components affecting the implementation of FinTech in the banking industry have a suitable factor load on their corresponding latent variable and have the validity required to measure the structures of the proposed model.

In the first hypothesis, we examined the effect of causal factors on the Fintech implementation that policy-making and legislation as upstream documents and legal infrastructure, government facilities,

legal incentives, macro-government policy reform as Which have a positive effect on Fintech implementation and Hence the first hypothesis is confirmed and with Research results of Moradi et al [24] Gai [17], and Allen et al [16] is consistent.

Table 14: Results of Hypotheses

No	Research hypotheses	T Statistics (|O/STDEV|)	P Values	Result
1	causal condition -> Structural arrangements	3.191	0.001	Confirmed
2	Culture -> Strategic strategies	3.344	0.001	Confirmed
3	Culture -> Structural arrangements	5.354	0	Confirmed
4	Technology -> Strategic strategies	4.354	0	Confirmed
5	Technology -> Structural arrangements	7.582	0	Confirmed
6	Structural arrangements -> Strategic strategies	6.617	0	Confirmed
7	Strategic strategies -> Advantages	28.739	0	Confirmed

By confirming the second and third hypotheses that examine the impact of cultural factors on strategies, we conclude that the intention to use technology, participation culture, entrepreneurial culture, risk-taking, learning and education, and building trust of cultural factors can be an effective factor in the implementation of Fintech and adopt strategies to implement FinTech. These factors with the factors identified in the research of Najafi et al [25] Allen et al., [16] Shafaq and Dezfuli [28], and Tabatabai et al [30] is consistent. According to the confirmation of the fourth and fifth hypotheses, which examined the relationship between technological factors with strategies and strategies, as well as the central phenomenon of the model (fintech implementation) the results show that technological factors on Fintech implementation and strategies have a positive effect. the results [29] are in the same direction.
According to the confirmation of the sixth hypothesis, to implement FinTech in the country's banking industry, it is necessary to adopt strategies commensurate with the structure of banks and laws and requirements and pay attention to the growing potential of FinTech, which the results confirm. And is in line with the research of Drasch et al [14] Yang and Wang [23] and Wilson [32].
According to the results of the research in the seventh hypothesis, we examined the impact of strategies and strategies on the consequences, which in order to implement FinTech in accordance with the structure of each bank and reduce the risks of banking systems and customer needs should be considered. These strategies can have three consequences (improving the business environment, improving performance, and establishing virtual banking) for banks. The result of this hypothesis is in line with the research of Drasch et al [14] and Najafi et al [25] Dimer and Lama [13].
Practical Suggestions to Key Research Users can be stated as follows:

1 In the banking industry, in order to determine the limits and boundaries of activities in the field of FinTech, a FinTech policy document should be compiled, and also some existing laws in the banking industry need to be amended, modified, and optimized, which should be done.
2 In order to implement FinTech, the development of instructions, circulars and the process of correct implementation of the provisions related to FinTech should be examined.
3 In order to align, and direct all activities, the Central Bank should formulate executive policies in accordance with the requirements of FinTech and notify all the executive elements of the banking industry.

4 It is suggested, in order to play the role of social responsibility by the banking industry, to prepare, review, and announce the clause of laws related to financial transparency in banks and institutions in order to implement FinTech.

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