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Investigating the Role of Social Banking in Managing the Financial Conflict of Interest between the Banking System and the Manufacturing Sector

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Abstract
In Iran, banking business models have not been designed to effectively finance manufacturing enterprises, causing a lack of liquidity for enterprises in most cases. Meanwhile, the manufacturing sector's deficiencies, such as the inability to repay installments, have not secured the interests of banks in injecting liquidity into manufacturing enterprises. Therefore, banks are interested in fulfilling social obligations by providing services in the framework of social banking while aiming to maximize their profits. Thus, they have two missions and financial conflict of interest with small manufacturing enterprises, which should be resolved. Despite studies on liquidity problems in manufacturing enterprises, there have been few studies on the financial conflict of interests between banks and manufacturing enterprises. Hence, the theoretical background and supporting theories were used to identify the main variables, which were finalized by experts using the fuzzy Delphi technique. To identify the correlations between variables, the questionnaire was completed by 35 team members and the results were analyzed using the fuzzy DEMATEL (decision making trial and evaluation laboratory) technique. The results show that in developing social banking, creating sustainable value creation, strengthening the banking system, and financing sustainable projects are more important and important factors such as optimal resource allocation, transparency, and access to facilities by people will lead to sustainable value creation and optimal allocation of banking resources. At the same time, value creation allows businesses to grow, especially micro and small businesses, leading to the development of social entrepreneurship and ultimately minimizing the conflict between banks and manufacturing enterprises.

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Introduction

The limited corporate liquidity in the Iranian economy has always been among the factors hindering the nation's economic growth and development, such that companies demand better access to banking facilities at reduced financial cost. Meanwhile, banks are not interested in directing their resources towards manufacturing enterprises. Given high inflation and the profitability of purchasing land, gold, and foreign exchange, banks direct savings to non-productive sectors instead of productive sector and contribute to the manufacturing sector's stagnation (Krouti, 2008). Among other factors, the inability of enterprises to repay facilities has exacerbated this situation (Rahmani & Fallahi, 2018).

The reason is presented in the Central Bank statistics shown in Figure 1 and Table 1.

Table 1 - Ratio of Liquidity to Manufacturing (10 Billion IRR / Source: Central Bank of Iran)

Period	Gross Domestic Product (GDP)	Liquidity	Ratio of Liquidity to Gross Domestic Product (GDP)
2011	686,828	357,070	51.9
2012	784,200	46,.693	58.7
2013	1,054,945	639,550	60.6
2014	1,200,499	782,390	65.1
2015	1,179,503	1,017,280	86.2
2016	1,392,969	1.253.390	89.9
2017	1,618,790	1,529,980	94.5
2018	2,080,826	1,882,890	90.4
2019	2,673524	2,472,150	92.4
2020	3,842,086	3,476,170	90.4

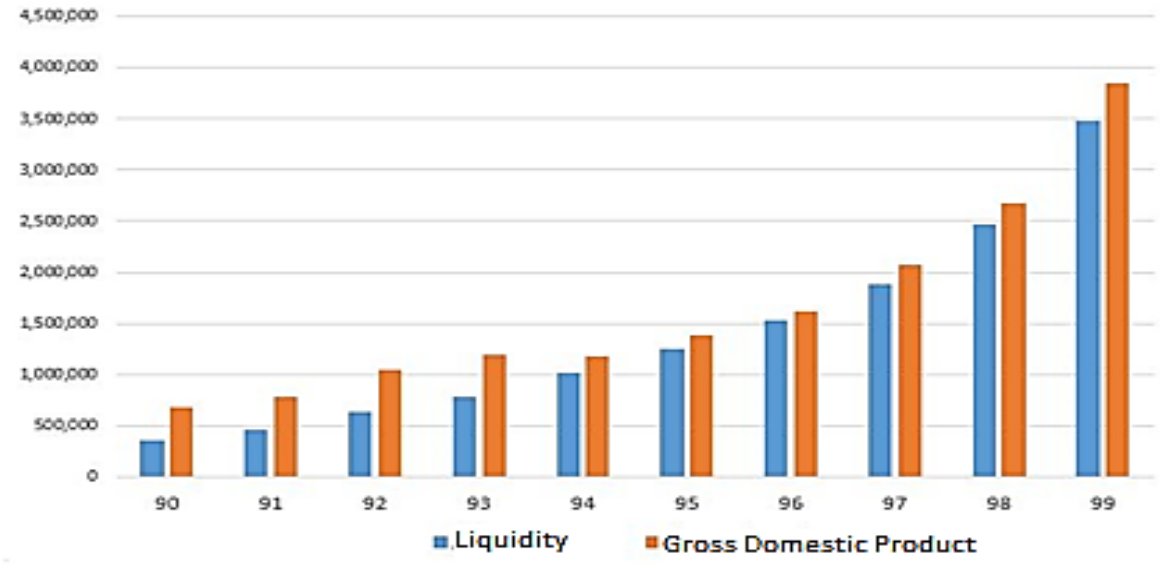

Figure 1: Comparison of Liquidity to Product (Source: Central Bank of Iran)

As shown in Table 1 and Figure 1, despite the rapid growth of liquidity, there has been no remarkable effect on economic variables such as economic growth and production. In fact, due to the nation's economic structure, short-term non-productive activities have higher returns than productive activities. This difference in productivity peaks in the commercial and housing sector and reduces the

willingness to invest in manufacturing (Arani & Heydari, 2014). Surveys by the International Financial Company (IFC) show that about half to two-thirds of small and medium-sized enterprises in the formal sector of the economy suffer from poor access to financial resources (Stein et al., 2013). Unfavorable macroeconomic conditions along with the high risk of borrowers increase financing cost and create a challenging environment for small and medium-sized enterprises (Winger, 2014).

Despite government requests of banks to launch special devices for low-rate crediting of the vulnerable segments of society, they have not resolved such problems.

Based on these conditions, banks should seek to fulfill social obligations in the framework of social banking as an instrument of moral assurance while seeking to maximize profit, which could increase the wealth gap in society. Therefore, they have a dual mission and a financial conflict of interest with manufacturing enterprises (Smith, 2018) which should be resolved.

Therefore, banks are interested in fulfilling social obligations by providing services in the framework of social banking while aiming to maximize their profits. Thus, they have two missions and financial conflict of interest with small manufacturing enterprises, which should be resolved. There have been relatively numerous studies on the nature of social banking but none on how a social bank can play its part in reducing the financial conflict of interest between itself and manufacturing enterprises and the stability of the national economy. After the review of literature, this study sought to present a dynamic model to discover the important variables and understand the existing relationships by applying the fuzzy DEMATEL technique and system dynamics modeling. Plotting causal loop diagrams helps create a better understanding of the functions of social banking as a solution for reducing the present financial conflict of interest.

Theoretical Background

Financial Conflict of Interests between Banks and Manufacturing Enterprises

In a conflict of interest, a person's interest conflicts or appears to conflict with the legitimate interests of another person, creating an unfavorable situation that may damage people's trust. Therefore, it is essential that any potential conflicts of interest are identified and managed effectively. The conflict of interest between banks and manufacturing companies has intensified due to the lack of mechanisms for tying their interests, such that the bank's effort to maximize its profit has no correlation with the manufacturer's efforts to maximize its profit. Even in partnership contracts, the shared interests of both parties are not the result of the banking system but formal partnership (Meydari, 2013).

Therefore, any distribution of facilities based on maximizing the banks' interests does not necessarily maximize the collective interest and can negatively affect the society as a whole. This is more relevant for economies without strong manufacturing structures where the brokerage sector is a serious competitor to manufacturing. In these economies, instead of complementing the manufacturing and consumption process, the service sector will limit the manufacturing sector. Under these conditions, the allocation of resources for the manufacturing and non-manufacturing sectors becomes important. Therefore, banks should focus on profit while also attending to providing public benefits and social responsibility (Taherpour et al., 2018).

Social Banking

A bank's social responsibility refers to the

financial inclusion of larger segments of society, financing of non-governmental organizations, ethical investment funds, risk expertise for customers, cost-effective electronic payments, and financial education of the public. Therefore, the profitability obligation for banks can prevent the realization of social banking goals (Batai et al., 2021).

Table 2: Definitions of Social Banking by Different Researchers

Author	Year	Key points in the definition of social banking	Methodology
Batai et al.	2021	Social responsibility, positive customer experience, behavioral results of customers	Social
Ahmad et al.	2021	Emergence of social media, changing approach of customers, modern customers	Social
Martinez et al.	2020	Social effectiveness, financial effectiveness, lending to prioritized sectors, financial learning	Financial
Rostami et al.	2018	Social entrepreneurship, micro financing, Islamic banks, Qarz al-Hasaneh, focusing on poor and low-income groups.	Financial
Nowafer	2018	Stable banking, collective interests, economic stability	Social
Perez	2017	Transparency, moral and social evaluation, representative government and cooperative, humane, and stable structure and efforts to increase awareness	Social
Thorat	2017	Support for vulnerable groups, lending with low rates	Financial
Kurneh & Safarez	2014	Non-economic factors (e.g., social, ethical, and environmental)	Social
Benedikter	2011	Reforming the financial and ethical system, less dependence on short-term financial gains, social outlook, and meeting the needs of the majority of people	Financial
Dephorni	2011	Ethical banking, financing of community-oriented projects, financing of social enterprises	Financial
Guneh & Mayo	2001	Attention to social outcomes	Social

It is not always simple to present a definition of social banking due to the numerous approaches introduced as such. The differences are due to the focus of various approaches on different aspects of social changes (Benedikter, 2011). Therefore, researchers have a different interpretation of social banking. Table 2 shows different definition of social banking by different authors:

Each definition of social banking is aimed at its specific aspects and cannot properly define all types. According to the purpose of the study, one of the most comprehensive definitions by Rostami et al. (2018) was selected. According to this definition, social banking is a combination of social trends of social entrepreneurship and lending to the manufacturing sector with banking products and services.

The Effect of Social Banking on Reducing the Financial Conflict of Interest between Banks and Businesses

Some researchers have focused on the conflict of interests between banks and manufacturing enterprises, such as Rahmani & Fallahi (2018), who focused on the risks of the lack of corporate liquidity and stated that while enterprises requested easier access to banking facilities at lower financial cost. The evidence of the last several decades shows that this policy is a short-term solution and cannot solve the root of corporate liquidity limitation. This study identified the main factors of financial limits in the Iranian economy. The most important factors of the supply-side financial limit are the low share of non-public sector debt from the banking system's total assets, the high volume of non-current claims, and the

centralized and the disproportionate distribution of financial resources (Teymouri & Fallahi, 2017). Moreover, one of the main reasons for the supply-side financial limitation is the capital structure that relies on external sources and the high volume of working capital that companies require. Geisti et al. (2017) examined the financial barriers and innovation in the development of manufacturing enterprises in the European Union and reported that according to the empirical examination, financial barriers, i.e. problems with accessing external resources, is a serious inhibiting factor of innovation in small and medium-sized manufacturing enterprises in the EU. In fact, corporate instability, competitive markets, and the lack of a reputable institutional platform increase the uncertainty of companies and the risk of banks to invest in small companies, which tightens financing restrictions. On the resolution of the conflict of interests in banking and manufacturing sectors, Meydari (2013) concluded that due to root problems of the banking system, the Japanese banking model was introduced with three principles as a solution for the reconciliation of the financial sector with other economic sectors. The ownership and management link between the banking system and the manufacturing system/control of the banking system and financing of industrial projects by government institutions. Mahmoudi & Sharifi (2013) investigated the important factors in the non-repayment of fast-yield lending facilities and concluded that financial institutions are the beating heart of the economy in two major markets, capital and money, and will create money and capital flows by providing facilities. Lending facilities are among the most important and valuable assets of banks, which can make a major portion of their income by granting facilities. However, the circulation of money and capital in society exposes financial institutions to various risks that could lead to unwillingness to pay loans to risky sectors. Sharifi et al. (2011) named information asymmetry as an outstanding problem and concluded that the different evaluations of the borrower and the lender of project risk information create information asymmetry in the credit market. Therefore, lending institutions usually face problems such as determining the type of borrower risk (inappropriate selection), ensuring that the borrower spends the received loan appropriately (lack of honesty), project training when the borrower claims inability to pay back the loan, and finding solutions for repayment by individuals who refrain from paying their debts. The main reasons for this include cultural, economic, and educational factors, lack of centralized databases, lack of a strong and efficient information exchange networks, lack of adequate laws and regulations, and political issues. Therefore, measures are required to provide the financial resources needed by applicants while the banks fulfill their main task, i.e. providing facilities with minimal risk. In today's evolving conditions, business success depends on their command and management of risks. Arab Mazar & Rouvin (2006) measured the impact of the credit risk of bank customers and argued that risk mitigation and control is an important factor for the improvement of the crediting process on bank performance and is essential to continuous provision of facilities and survival of banks and credit institutions. It is important that banks evaluate the possibility of non-repayment by borrowers and select a group who are assured to repay their loans at the specified time. This can be accomplished through a comprehensive system and a suitable structure and criterion. Bagheri & Najafi (2004) examined the factors affecting the use of bank facilities in the agricultural sector and concluded that non-repayment or delayed repayment of facilities renders

banks incapable of meeting their obligations. At the same time, compared to manufacturers in other sectors such as industry and services, the recipients of facilities in the agricultural sector are exposed to more risk and uncertainty by natural factors and volatility in the sold price of agricultural products. Therefore, they often are financially unable to repay their overdue installments on time. In case of problems with loan repayment, the bank will have problems giving out loans to farmers. The failure of farmers to pay overdue facilities decreases the performance of grant facilities and the bank's financial resources.

Evidently, numerous studies have discussed the financial problems of enterprises and the role of banks in this regard. However, there have been no studies on the root causes of the financial conflict of interests between banks and manufacturing enterprises to provide practical solutions. Therefore, to reduce this conflict, this study proposed the social banking model to determine its important variables and understand the existing relationships between variables using the fuzzy DEMATEL technique and the system dynamics modeling approach, a dynamic model in this field.

Methodology

This exploratory study is applied in terms of its purpose for dealing with finding a solution for a certain problem in Resalat Qarz al-Hasna Bank. It aimed to present a dynamic model by reviewing the literature on conflict of interests between banks and manufacturing enterprises to determine the important variables and understand the existing relationships. To this end, the fuzzy DEMATEL technique and the system dynamics modeling approach was used, where plotting causal loop diagrams (CLD) helps to better understand problem to reduce the financial conflict between banks and manufacturing enterprises. Hence, the theoretical background and supporting theories were used to identify the main variables, which were finalized by experts (Table 2) using the fuzzy Delphi technique. Therefore, to determine the research objects and evaluate their effects on each other, a researcher-made questionnaire based on the indicators identified from the literature based on the content analysis method was created and finalized based on expert opinion. To identify the correlations between variables, the questionnaire was completed by 35 multi-task team members and the results were analyzed using the fuzzy DEMATEL (decision making trial and evaluation laboratory) technique. The members of the multi-task team were selected from the relevant departments in Resalat Qarz al-Hasna Bank using judgmental sampling. The Resalat Qarz al-Hasna Bank was chosen as the sample due to leadership in social banking and offering 100% microcredit. The fuzzy DEMATEL method was chosen to account for the interrelationships between the variables and greater command in expressing expert opinions on the effects (direction and intensity) between the factors and stronger and more logical reasoning than other problem structuring methods. The research objectives were identified according to the indicators identified from literature review based on content analysis and 12 banking and economics experts who worked in specialized fields in Iran for over 15 years. The objectives were then finalized using the fuzzy Delphi method.

The experts include people specified in Table 3:

Given ambiguities in human evaluations, Lee's fuzzy verbal scale was used instead of the comparison scale used in DEMATEL. Table 4 shows the different degrees of “effect”.

Table 3: Characteristics of Experts

No.	Relevant Field	Education	Number of Interviewed Experts
1	Banking	Ph.D.	5
2	Banking	M.A.	2
3	Economic Actor	Ph.D.	4
4	Economic Actor	M.A.	1

Table 4: Correspondence of Verbal Expressions with Verbal Values

Verbal Expression	Verbal Value
Very High Effect (VH)	(0.75 - 1 - 1)
High Effect (VH)	(0.5 - 0.75 - 1)
Low Effect (L)	(0.25 - 0.5 - 0.75)
Very Low Effect (VL)	(0.0 - 0.25 - 0.5)
No Effect (NO)	(0.0 - 0.0 - 0.25)

To determine the correlation between the $C=\{C_i \mid i=1,2,...,n\}$ criteria, a decision-making group of 16 experts are questioned to obtain a set of paired measurements in verbal expressions. Therefore, 25 fuzzy matrices $\tilde{Z}^{\langle 1\rangle},\tilde{Z}^{\langle 2\rangle},...,\tilde{Z}^{\langle P\rangle}$ are prepared based on the opinions of each expert.

$$\tilde{Z}^{\langle k\rangle}=\begin{bmatrix} 0 & \tilde{Z}_{12}^{\langle k\rangle} & \cdots & \tilde{Z}_{1n}^{\langle k\rangle} \\ \tilde{Z}_{21}^{\langle k\rangle} & 0 & \cdots & \tilde{Z}_{2n}^{\langle k\rangle} \\ \vdots & \vdots & \cdots & \vdots \\ \tilde{Z}_{n1}^{\langle k\rangle} & \tilde{Z}_{n2}^{\langle k\rangle} & \cdots & 0 \end{bmatrix} \quad k=1,2,...,p$$

Where $\tilde{Z}_{ij}^{\langle k\rangle}=\left(\lambda_{ij}^{\langle k\rangle},m_{ij}^{\langle k\rangle},u_{ij}^{\langle k\rangle}\right)$ is the fuzzy matrix $\tilde{Z}^{\langle k\rangle}$, called the fuzzy initial direct relation matrix of expert k.

The next step is to obtain the normal fuzzy direct relation matrix. Assuming that $\tilde{a}_i^{\langle k\rangle}$, the fuzzy numbers are triangular,

$$\tilde{a}_i^{\langle k\rangle}=\sum_{j=1}^{n}\tilde{Z}_{ij}^{\langle k\rangle}=\left(\sum_{j=1}^{n}\lambda_{ij}^{\langle k\rangle},\sum_{j=1}^{n}m_{ij}^{\langle k\rangle},\sum_{j=1}^{n}u_{ij}^{\langle k\rangle}\right)$$

$$r^{\langle k\rangle}=\max_{1\le i\le n}\left(\sum_{j=1}^{n}u_{ij}^{\langle k\rangle}\right)$$

Then, to convert the scale of criteria into comparable scales, linear scale conversion is used as a normalization formula. The normalization matrix of the fuzzy direct relation of expert k, or $\tilde{X}^{\langle k\rangle}$, is as follows,

$$\tilde{X}^{\langle k\rangle}=\begin{bmatrix} \tilde{X}_{11}^{\langle k\rangle} & \tilde{X}_{12}^{\langle k\rangle} & \cdots & \tilde{X}_{1n}^{\langle k\rangle} \\ \tilde{X}_{21}^{\langle k\rangle} & \tilde{X}_{22}^{\langle k\rangle} & \cdots & \tilde{X}_{2n}^{\langle k\rangle} \\ \vdots & \vdots & \cdots & \vdots \\ \tilde{X}_{n1}^{\langle k\rangle} & \tilde{X}_{n2}^{\langle k\rangle} & \cdots & \tilde{X}_{nn}^{\langle k\rangle} \end{bmatrix} \quad k=1,2,...,p$$

where $\tilde{X}_{ij}^{\langle k\rangle}=\frac{\tilde{Z}_{ij}^{\langle k\rangle}}{r^{\langle k\rangle}}=\left(\frac{\lambda_{ij}^{\langle k\rangle}}{r^{\langle k\rangle}},\frac{m_{ij}^{\langle k\rangle}}{r^{\langle k\rangle}},\frac{u_{ij}^{\langle k\rangle}}{r^{\langle k\rangle}}\right)$

As with the normal DEMATEL method, assuming that there is at least one i where $\sum_{j=1}^{n}u_{ij}^{\langle k\rangle}<r^{\langle k\rangle}$, which is fulfilled in practice. Then, the algebraic expressions of a constant are multiplied by a fuzzy number and two fuzzy numbers are aggregated to calculate the mean matrix of $\tilde{X}$ obtained from $\tilde{X}^{\langle 1\rangle},\tilde{X}^{\langle 2\rangle},...,\tilde{X}^{\langle P\rangle}$.

$$\tilde{X}=\frac{\left(\tilde{X}^{(1)}\oplus\tilde{X}^{(2)}\oplus...\oplus\tilde{X}^{(p)}\right)}{p} \quad ; \quad \tilde{X}=\begin{bmatrix} \tilde{X}_{11} & \tilde{X}_{12} & \cdots & \tilde{X}_{1n} \\ \tilde{X}_{21} & \tilde{X}_{22} & \cdots & \tilde{X}_{2n} \\ \vdots & \vdots & \cdots & \vdots \\ \tilde{X}_{n1} & \tilde{X}_{n2} & \cdots & \tilde{X}_{nn} \end{bmatrix}$$

where $\tilde{X}_{ij}=\frac{\sum_{k=1}^{p}\tilde{X}_{ij}^{\langle k\rangle}}{p}$.

The fuzzy matrix $\tilde{X}$ is called the normal direct-relation fuzzy matrix. Here, the arithmetic mean is used to integrate all the experts' data after calculating the normal direct-relation fuzzy matrix $\tilde{X}^{\langle k\rangle}$. This method is better than the integration of all expert data after calculating the initial fuzzy direct-relation matrix $\tilde{Z}^{\langle k\rangle}$.

The next step is to implement and analyze the structural model. To calculate the total relation fuzzy matrix, the convergence of $\lim_{w\to\infty}\tilde{X}^{w}=0$ must be guaranteed. To calculate $\tilde{X}^{w}$, the approximation equation $\tilde{n}_1\otimes\tilde{n}_2\cong(\lambda_1\times\lambda_2,m_1\times m_2,u_1\times u_2)$ is used to multiply two triangular fuzzy numbers. Therefore, the elements $\tilde{X}^{w}$ are also triangular fuzzy numbers. According to the deterministic state, the total relation fuzzy matrix is defined as follows:

$$\tilde{T}=\lim_{w\to\infty}\left(\tilde{X}+\tilde{X}^{2}+...+\tilde{X}^{w}\right)=X\times(I-X)^{-1}$$

Having obtained $\tilde{T}$, the CFCS method is used to defuzzify and obtain the total

relation matrix (Zhao et al., 2011). Thus, for the CFCS method, we have:

If $\tilde{n}_k = (\lambda_k, m_k, u_k); k = 1,2,...,n$ are the triangular fuzzy numbers and $\tilde{n}_k^{def}$ represents their definite value. We also have:

$L = \min(\lambda_k)$, $R = \max(u_k)$; $k = 1,2,...,n$, and $\Delta = R - L$; then:

$$\tilde{n}_k^{def} = L + \Delta \times \frac{(m-L)(\Delta+u-m)^2(R-\lambda)+(u-L)^2(\Delta+m-\lambda)^2}{(\Delta+m-\lambda)(\Delta+u-m)^2(R-\lambda)+(u-L)(\Delta+u-m)}$$

Then, a model was drawn based on the relationships obtained by the fuzzy DEMATEL technique to show the interaction effect of factors. Finally, for a better understanding of relations and a holistic approach to the subject, a dynamic model was drawn based on system dynamics modeling.

Data Analysis

After obtaining the factors and designing the questionnaire based on the review of literature covering the content analysis method, the opinions of 12 university professors in banking and economics were used to validate the questionnaire's content, and Cronbach's alpha was also used to check the questionnaire's reliability. According to the results, Cronbach's alpha for all questionnaire items were 0.825, indicating good reliability of questions. Next, the questionnaire was presented to 35 experts in banking and economics, and finally, after calculations using the fuzzy Delphi technique (which reached consensus in three rounds), 25 main factors were selected as shown in Table:

Table 6 shows the abbreviation of accepted variables (above 0.7):

Table 5: The Final Research Variables According to Experts

Defuzzified Average	Fuzzy Average	Factor
0.807	(0.7555, 0.8555, 0.888)	Greater trust of the banking system
0.77	(0.7222, 0.8222, 0.888)	Transparency
0.77	(0.7555, 0.8555, 0.888)	Financing stable projects
0.821	(0.7555, 0.8555, 0.888)	Presenting adequate solutions based on the needs of groups of customers
0.77	(0.7333, 0.8433, 0.8767)	Flexible credit scoring
0.77	(0.69, 0.79, 0.84)	Environmental benefits
0.833	(0.7333, 0.8333, 0.8777)	Facilitating access to banking facilities for all people
0.77	(0.7555, 0.8555, 0.888)	Reduced non-commercial claims for microcredit
0.818	(0.7333, 0.8333, 0.8777)	Preventing centralized and inappropriate distribution of financial resources
0.825	(0.7444, 0.8444, 0.888)	Timely payment of debts to customers
0.67	(0.5888, 0.6888, 0.7444)	Reduced liquidity risk
0.825	(0.7555, 0.8555, 0.888)	Circulation of money and capital in society
0.77	(0.7555, 0.8555, 0.888)	Empowering people
0.77	(0.7222, 0.8222, 0.888)	Customer loyalty
0.814	(0.7555, 0.8555, 0.888)	Banks leaving business management and directing resources to production
0.818	(0.7555, 0.8555, 0.888)	Coordination and cooperation between different levels of the value chain
0.825	(0.7333, 0.8333, 0.888)	Reduced financial corruption and money laundering
0.818	(0.7222, 0.8222, 0.8777)	Strengthening the banking system
0.807	(0.69, 0.79, 0.84)	Economic development

Defuzzified Average	Fuzzy Average	Factor
0.821	(0.7444, 0.8444, 0.9)	Increasing investment
0.833	(0.7333, 0.8433, 0.8767)	Profitability
0.814	(0.7333, 0.8433, 0.8767)	Job creation
0.77	(0.7555, 0.8555, 0.888)	Reduced poverty
0.7888	(0.7333, 0.8333, 0.8777)	Sustainable value creation
0.7888	(0.7333, 0.8333, 0.8777)	Optimal resource allocation
0.633	(0.7555, 0.8555, 0.888)	Greater trust of the banking system
0.614	(0.7333, 0.8333, 0.8777)	Granting loans to risky segments of society
0.67	(0.5888, 0.6888, 0.7444)	Penetration factor of banking services
0.614	(0.7333, 0.8333, 0.8777)	Developing financial services
0.67	(0.5888, 0.6888, 0.7444)	Improving the organizational brand

Table 6: Important Factors in Reducing the Conflict of Interest between Banks and Manufacturing Companies

Variable	Factor	Variable	Factor
A_{14}	Strengthening the banking system	A_{1}	Financing stable projects
A_{15}	Facilitating access to banking facilities for all people	A_{2}	Circulation of money and capital in society
A_{16}	Sustainable value creation	A_{3}	Presenting adequate solutions based on the needs of groups of customers
A_{17}	Reduction of non-commercial claims for microcredit	A_{4}	Optimal resource allocation
A_{18}	Banks' departure of business management	A_{5}	Trust of the banking system
A_{19}	Directing resources toward manufacturing	A_{6}	Transparency
A_{20}	Poverty	A_{7}	Investment
A_{21}	Empowering people	A_{8}	Preventing centralized and inappropriate distribution of financial resources
A_{22}	Profitability	A_{9}	Liquidity risk
A_{23}	Job creation	A_{10}	Financial corruption and money laundering
A_{24}	Economic development	A_{11}	Customer loyalty
A_{25}	Coordination and cooperation between different levels of the value chain		Timely payment of debts to customers
A_{12}	Flexible credit scoring		Empowering people

After determining the intensity of the correlations between variables, they were obtained based on expert opinion and the fuzzy DEMATEL method. The influence or dependence order of a problem's assumed elements on other elements will determine their possible hierarchical structure in improving or solving the problem.

Thus, the possible structure of direct and indirect relations and the order of elements in terms of influencing or taking influence from other elements were calculated. Accordingly, to determine the correlation between the factors, the threshold value (mean) of 0.018 was obtained from the total relation matrix.

Numbers greater than the threshold value indicate a relation while smaller numbers was considered zero or the absence of correlation. Finally, it was determined that the variables A16, A14 and A1, respectively sustainable value creation, strengthening the banking system, and financing of sustainable projects, are the most dependent, and variables A4, A6 and A15, respectively the optimal allocation of resources, transparency, and providing people access to banking facilities are the most effective, and finally, A16 and A4, respectively sustainable value creation factors and optimal resource allocation, have the highest penetration factor.

Figure 2 shows the position of elements based on their effect and dependence. The variables at the top are penetration factors while the variables at the bottom of the graph are dependence factors. As shown, A4, A6, and A15, respectively the optimal allocation of resources, transparency, and providing people access to banking facilities are the most effective. To map relationships, the threshold value must be obtained. This method can ignore negligible relationships and plot a network of significant relationships. Only the relations whose values in the T matrix (Table 3) are greater than the threshold will be shown in the network relations map. To calculate the relation threshold, the average values of the T matrix will be simply obtained. To determine the inter-criterion relations, the threshold value (mean) of 0.014 was obtained from Table 6. Then, numbers greater than the threshold indicate a relation while smaller numbers were considered zero or the absence of a relation. Therefore, Figure 3 was plotted to consider the relationship between variables.

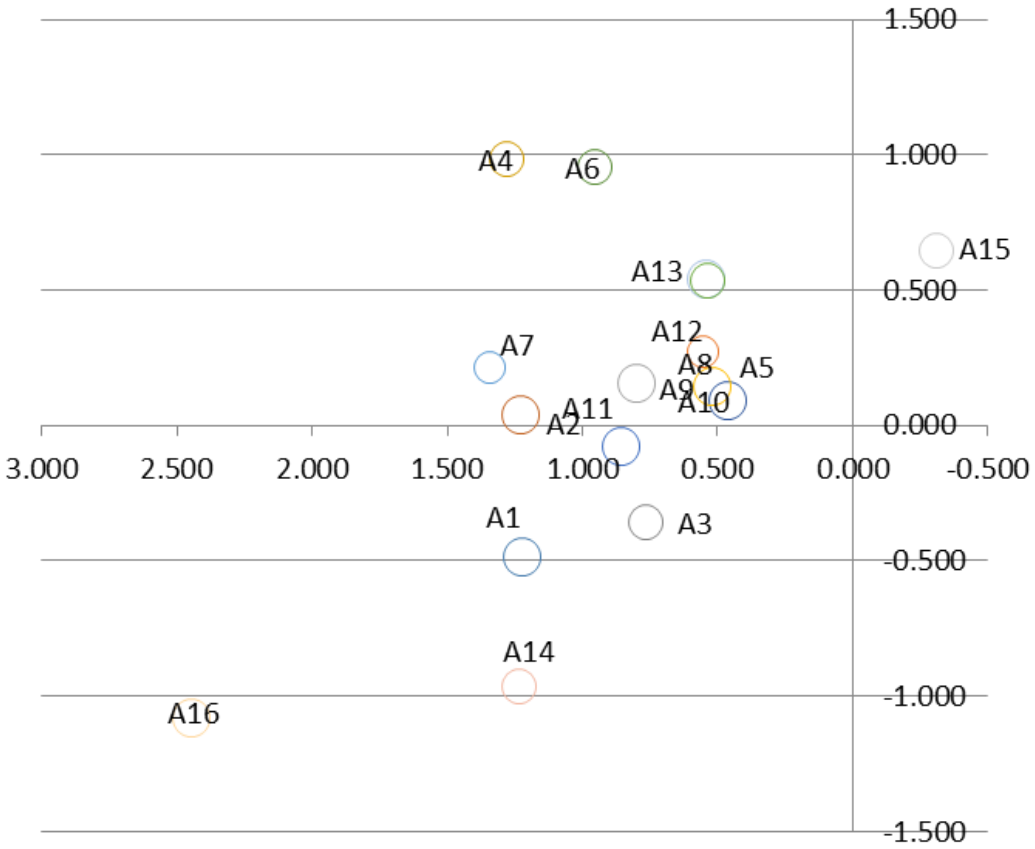

Figure 2- The Position of Factors

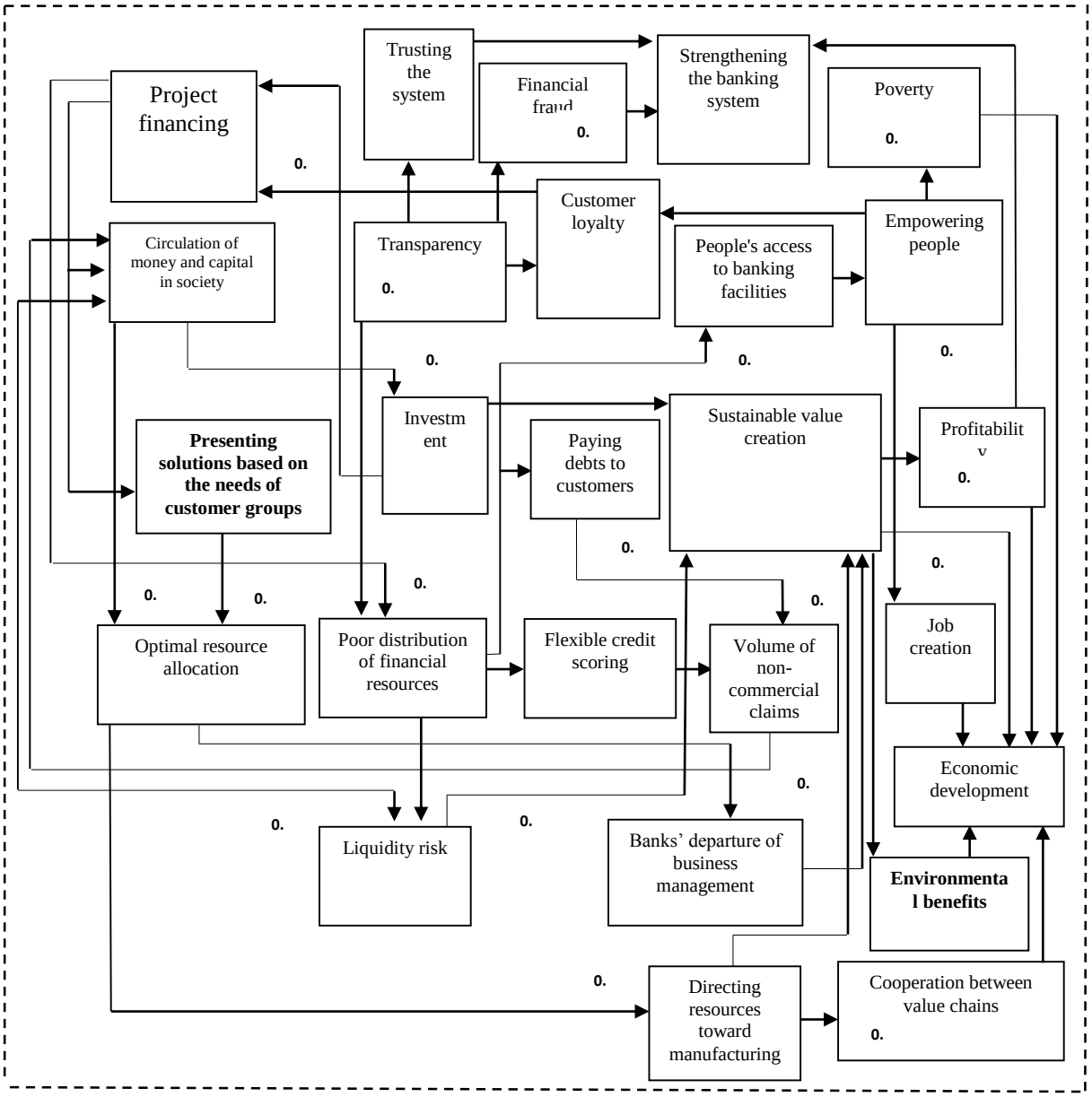

Figure 3: The Relationships between the Variables of Social Banking Development Model in Reducing the Financial Conflict of Interests between Banks and Manufacturing Companies

According to the correlations in Figure 3, which were validated by 12 banking experts, development of social banking leads to optimal allocation of resources, transparency, and people's access to banking facilities, which strongly influences the reduction of financial conflict of interest between banks and manufacturing enterprises through sustainable value creation, strengthening the banking system, and financing of sustainable projects.

After obtaining the model of social banking to reduce conflict of interests between banks and companies, the flow was modeled using system dynamics modeling since it provides a more accurate and comprehensive picture of reality. When investigating problems using system dynamics modeling, the cause and effect loops specify the dynamic relations of problems (Sterman, 2000). For a better understanding of the relationships and existing dynamics, cause and effect loops are presented as a dynamic model.

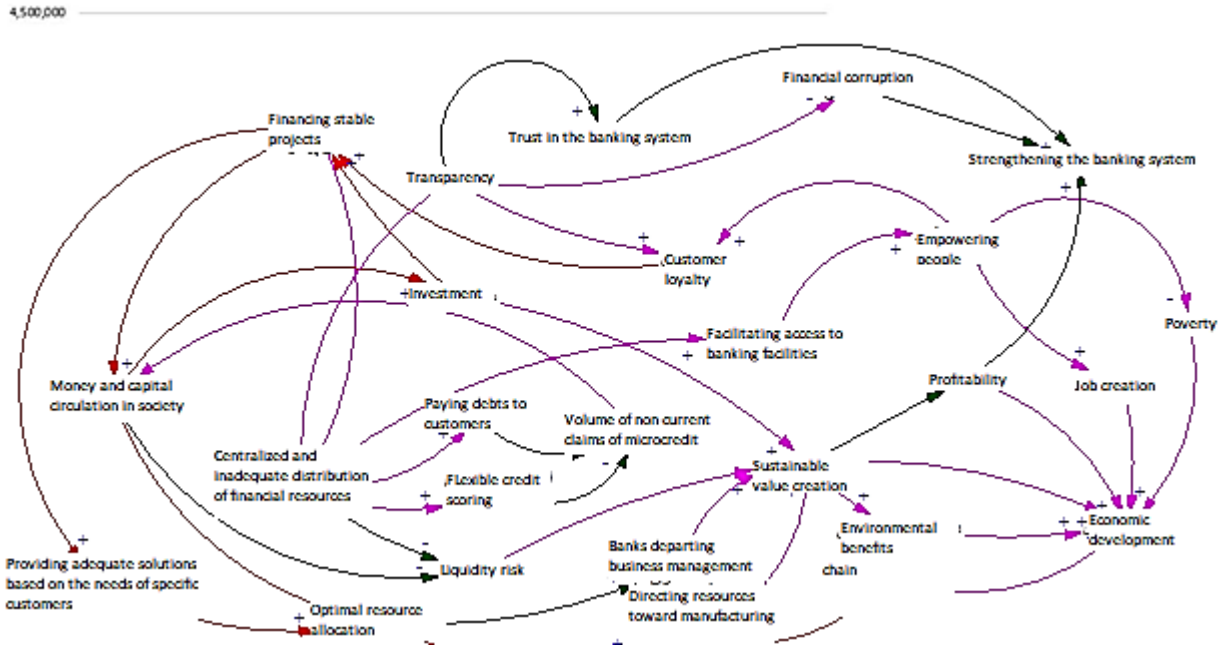

Figure 4: The Cause and Effect Loops of the Variables of the Social Banking Development Model in Resolving Financial Conflict of Interest between Banks and Enterprises.

Discussion and conclusion:

This dynamic model (Figure 4) presents the social banking development process with different loops. Evidently, the development of social banking indicators has benefited enterprises through financing and allocating facilities and directing liquidity to manufacturing (the red loop called ensuring the benefits of manufacturing enterprises). Meanwhile, this will lead to capital flow in productive sectors, sustainable value creation, greater customer loyalty, more investment in banks, reduced arrears, and profitable banking (the green loop called ensuring the benefits of banks). Another loop in Figure 4 shows the long-term positive effects such as economic growth, job creation, and economic development (the purple loop called ensuring people's financial interests).

Discussion & Conclusion

Despite the numerous studies on the nature of social banking and its functions, the effect of social banking in reducing the financial conflict of interests between banks and manufacturing enterprises has been neglected. Therefore, this study examined the roles and functions of social banking in reducing the conflict of interests. The results show that in developing social banking, creating sustainable value creation, strengthening the banking system, and financing sustainable projects are more important and its influence on important factors such as optimal resource allocation, transparency, and access to facilities by people will lead to sustainable value creation and optimal allocation of banking resources.

At the same time, value creation enables the growth of businesses, especially micro and small businesses, leading to the development of social entrepreneurship and ultimately balancing the market and values and helping resolve social problems (Shahbazi et al., 2020). With the development of social banking indicators, banks leave business management and investment in non-productive sectors and mitigate one of the main challenges of the banking system that has diverted resources

and liquidity over the years, such as the expansion of black market economy and income inequality and weakened manufacturing sector. However, it is not only enterprises that will benefit from the development of social banking in Iran's banking system, since by directing liquidity towards developing self-employment and home businesses, banks will have successfully earned the identity and branding of their social commitment (Bigdeli, 2021), increasing customer satisfaction and loyalty and creating more investment in banks. Combined with growing resources and arrears, this will increase the profitability of banks. Based on the research model's output, in addition to securing the financial interests of banks and manufacturing companies, people will also benefit from positive and long-term effects such as economic growth, job creation, and economic development. In short, the results suggest that the development of social banking in the Iran will create mechanisms that will reduce the conflict of interest between banks, companies, and people while providing collective benefits. It is hoped that the results give perspective to Iran's banking and economic officials to resolve the conflict between banks and manufacturing enterprises.

Recommendations

The present study has weaknesses and limitations that naturally reduce the quality of results and recommendations. These include not simulating the model after fuzzy DEMATEL modeling and simply presenting an image of cause and effect loops between variables for a better understanding of the space of existing relationships and dynamics. Therefore, it is recommended that a study specifically simulate the proposed model using the system dynamics approach. At the same time, there are other variables and effective factors that could have been included in the proposed model, which due to the complexity and lack of accurate information, were limited to the structures in the proposed model. Therefore, future studies should identify and evaluate the effect of other variables.

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