

A paradigmatic model of customer money laundering risk in Iranian banks

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Abstract

One of problems and dysfunctions of financial institutions is the possibility to use them as a tool to facilitate the transfer of financial flows of dirty money in a money laundering process.

Due to the complex criminal nature of the money laundering and the lack of a similar worldwide interpretation of the phenomenon, providing a native model for identifying the phenomenon is of significant importance in managing and reducing customer money laundering risk.

The present study using the Grounded Theory (GT), has tried to explain the money laundering risk by proposing a paradigmatic model of customer money laundering risk in Iranian banks.

The results represent causal conditions, criteria, confounding and underlying factors and consequences of customers' money laundering risk from the perspective of the participants.

In the following parts, effective indices and sub-indices in money laundering risk OF actual and legal Iranian customers have been identified. In the end, the measurable indicators are presented. It is worth mentioning that due to lack of adequate integration between banking information systems with other monetary and financial institutions, all indicators can't be assessed yet. Thus, it will be possible to improve the reliability of money-laundering risk assessment system in the form of e-government in the light of the development of IT integration.

Keywords: money laundering, customer money laundering risk, grounded theory

1. Introduction

Money laundering has always been considered among instances of criminal acts in different societies. Therefore, all legal, economic, national and international systems seek to eliminate or reduce the criminal phenomenon. While affecting the economy, money laundering is considered an organized crime, which could have serious implications for other countries in cultural, social and balanced development areas (United Nations Office on Drugs and Organized Crime, 2005). Money laundering refers to the process of committing crimes in order to obtain profits. It involves 3 phases, in the first phase of which any direct link between the proceeds (money) is stopped from its illegal origin; The second phase involves hiding the property traces by doing multiple transactions (both formal and hypothetical) and in the final phase, a legitimate appearance is given to the property obtained by the crime. International institutions statistics show that Iran has the highest rate of money laundering risk in recent years (Basel, 2016) ^[3]. Therefore, money laundering can be considered as a link connecting informal, formal or legal economies. Risks cover a wide range of financial institutions operations. Dealing with the risky phenomena in financial and economic activities involves the design and implementation of a comprehensive risk management framework (Talebi and Shirzadi, 2011, p. 7) ^[34].

To conduct a comprehensive inspection on each bank regarding combating money laundering and the financing of terrorism, each bank is required to be tested annually in this regard, but the comprehensive inspection is not usually practical considering constraints in the budget and the number of inspections and other regulatory expertise.

There are various definitions for money laundering. Some

believe that the money laundering is defined as any action or activity to hide or change the appearance of proceeds by illicit identity (from criminal activity) in a way that these proceeds are pretended to be originated from legitimate sources (Fasihi, 2009) ^[11]. Although the financial corruption is as old as human history, historical and known roots of the money laundering phenomenon can be traced back to the forties of the twentieth century. In fact, the beginning of the money laundering is attributed to the heyday of gangster activities in America, the most distinct network of which was led by a man named Al capon.

Some believe that the main origin of the money laundering term goes back to the ownership of the network of mechanical home laundries in the United States in the 1930s.

The mechanical home laundries belonged to cash businesses, which were bought by the heads of mafia for their undeniable advantage (Raymond 2, 1985) ^[20]. But some ascribed the beginning the money laundering phenomenon to the Watergate scandal in 1973. They believe that after disclosure of the historical story of Watergate, the term "Money laundering" entered the economic literature. Then after a few years and obtaining more knowledge about its various manifestations, the American Congress passed money laundering law and the anti-money laundering fight was extended to other countries as a new concept, accordingly (Khosravi, 2001, p. 11). Since the money laundering phenomenon is a criminal act and the people working in the field are mainly among educated professionals who are familiar with legal affairs and banking systems, it is very complex to assess the aggravating factors and indicators of money laundering.

Second, due to the financial sanctions imposed on Iran,

statesmen and institutions are forced to seek activities to circumvent sanctions in order to do their financial transactions. The set of activities is considered a kind of money-laundering based on international definitions, so indicators and global factors may not sometimes be relevant in domestic literature.

Therefore, while looking at the money laundering global literature, the present study aimed to offer a quantifiable model, based on scientific, defensible and reliable principles, using the experience of the banking experts and with the help of local experts so that the underlying causes of this crisis are managed in the banking community of the country.

The aim of this study was to offer a model to assess the money laundering risk of banking customers with respect to the financial market requirements in the current situation of the country. In this study, the qualitative research method was initially used to reckon the involved indices (semi-structured interviews and comparative study on customer money laundering risk assessment systems).

Then, in order to better assess the money laundering risk aggravating factors, tangible, quantitative, measurable, relevant and timely evidence are provided to assess each sub-index according to the methodological approach.

Background Research

Money laundering was considered by Western countries as a crime for the first time in the 1980s, especially in the case of the proceeds of drug trafficking and psychotropic drugs. This progress was due to the above countries' awareness from the profitability of this criminal activity and their concerns about the spread of drug use in Western societies, which motivated governments to combat against drug dealers by codification of laws depriving them from illegal proceeds.

Therefore, macro-economic policy-makers decided to develop a comprehensive policy for dealing with this phenomenon in their economic planning (Majlis Research Center, 2003, p. 8) ^[39].

Conditions and types of money laundering

Countries in which money origin is not seriously investigated and suffer from an underground economy, dysfunctional and inefficient bureaucracy, a non-transparent financial system and lack of strong monitoring system are more susceptible to the money laundering. Moreover, proceeds obtained from illegal activities can be easily imported to the economic cycle of these countries and money laundering can become operational. Therefore, the more distant is the economy from competitive conditions, the more widespread these activities will be.

The most common way of money laundering is that money launderers directly deposit cash in banks or deposit the dirty money in other locations using financial and monetary tools such as cheque and promissory notes. Given the growing diversity and expansion of illegal activities, large amounts of dirty money are laundered in various ways and are integrated in the countries' economy (Khosravi, 2005, p. 8) ^[23].

The Financial Action Task Force on Money Laundering (FATF) affiliated to Organization for Economic Cooperation and Development, has referred to several major threats as a result of the globalization of the money laundering phenomenon, including profitability of criminal and illegal activities due to failure to implement anti-money laundering programs, allowing criminal organizations to finance and expand their criminal activities, use of the formal financial network by money launderers and the corruptibility risk of financial institutions and

the whole financial sector of the national economy and the accumulation of power and wealth in the hands of criminal groups ^[1].

Proceeds derived from criminal activities in other countries may also be washed and transferred to a given country. Therefore, the definition of money laundering includes the part of the proceeds of crime occurring in a given country, in which the dirty money is moved out to be washed elsewhere in the world. With this approach, four identifiable types of money laundering can be itemized as follows (Rahbar and Mirzavand, 2008, pp. 257- 258) ^[22].

Internal money laundering: It consisting of dirty money obtained from criminal activities within a country that is washed in the same country.

Exportable money laundering: It involves dirty money obtained from criminal activities within a country which are laundered out of the country.

Importable money laundering: It involves dirty money obtained from criminal activities in other parts of the world that are laundered into another country.

External money laundering: It involves dirty money obtained from criminal activities in other countries that are also laundered out of the same country (ibid.).

Considering the complex dimensions and negative effects of the money laundering phenomenon on national economies, most developed countries take measures in the form of legislation of appropriate monitoring mechanisms in economic, administrative and financial systems to prevent the spread of this phenomenon in their economy (Henley, 2001, p.15) ^[12].

This leads to insecure economic environment for activists of these activities. Moreover, to maintain their activities, groups and individuals involved in this phenomenon have to follow their goals in countries in which such restrictions and regulations have not been defined.

Undoubtedly, it will create many problems for these countries. The first step in dealing with this problem is to know its effects and codify laws, regulations, adopt appropriate policies and ways to deal with this phenomenon (International Monetary Fund, 2004, p. 6) ^[14] Generally; money laundering involves three different stages of placement, layering and integration (Ghazavi and Kayani Zadeh, 2009) ^[15].

Placement stage must be the riskiest stage of money laundering for the guilty, because the crime detection probability is very high at this stage. Deposition of a significant amount of cash into one or more bank accounts will attract much attention and raises doubts. One of the most common ways applied by money launderers at this stage is the recruitment of individuals who deposit cash to their bank accounts many times less than the limit prescribed for reporting. They mainly use small banknotes to a combination of different banknotes. They may also receive traveler's cheque or money transfers from banks, and then deposited these documents in the target bank. As well as institutions such as insurance agencies may also be targeted by money launderers.

That's why many drug traffickers and professional money launderers try to keep the source of cash hidden by using activities mainly dealing with cash (including restaurants and bars). Clubs, casinos, entertainment centers and the like can earn a lot of cash, for this reason, such activities can be good cover for money-launderers activities; therefore, banks are strongly

recommended to identify their customers.

The second stage of the money laundering chain is layering stage, in which, the dirty money which were placed in the financial institution at the beginning, are moved out and are displaced through a number of other financial institutions and may eventually be used in complex transactions. Integration is the last stage of money laundering chain. This occurs when the laundered money, without being identifiable, can be restored to the legal financial system. Refinancing is an old technique of in the integration stage. Yet, another common method is to default the loan at this stage, in which the bank sells part of the money launderers' assets to return the awarded loans to them and withdraws its principal capital (Rahbar and Mirzavand, 2008) [26].

Generally, money launderers launder the money by using financial instruments to invest in the capital market, bank transfers, cheap lending and financial banknotes of exchange, cumulative accounts, payable accounts, electronic accounts, online banking, black foreign currency liquidity market and legal currency markets, etc. (Komisar, 2001) [18]. In this regard, the banking industry plays a unique role in the application of dirty money.

Few studies of money laundering risk assessment are published in scientific and professional societies. Later in this study, references are made to the Financial Action Task Force and Basel Special Committee Group on Banking Supervision and explanations are presented about money laundering risk and its types, according to the World Bank book titled "Prevention of money laundering and terrorist financing, practical guide for banking supervisors. Each bank is annually investigated in this

regard, but a comprehensive inspection is usually not practical considering the budget constraints and the limited number of inspectors and other regulatory experts, (McDowell and Novis, 2001).

There are various methods for inspecting a bank, including: One Size Fit All method or approach. In the first method, regardless of size or types of the customers' activities, the monitoring authority will equally distribute its regulatory resources among them in order to monitor banks or financial institutions, i.e. all financial institutions, their customers and products are assessed and monitored equally or resources are targeted based on factors other than risk assessment. However, in the second method, the observer distributes the existing supervisory resources among the institutions to monitor the activities of the above institutions, given the size, volume, type of activity and monetary and financial institutions customers. Experience in different countries indicates that the risk-based supervision is an approach or method for effective supervision on banks. In other words, in the recent approach or method, the monitoring resources are allocated based on priorities or and higher risks institutions are more addressed and monitored (McDowell and Novis, 2001) [25]. With the adoption of risk-based approach, banking supervisors could focus on banks that are more likely to be exposed to the money laundering risk. Based on these indices, mainly the banks are monitored and inspected that are doing more complex activities or larger banks that are involved in cross-border transfers or banks that focus is on special bank services (Ibid.).The most important risk factors involved in the customer money laundering include:

Table 1: Indicators involved in the customers' money laundering risk assessment

Customer / account description	Degree of customer's risk
Accounts of resident native customer (savings accounts, certificates of deposit)	Low
Accounts of resident non-native customer (foreign)	Low
Small businesses and authorized agencies	Average
Short-term and long-term investment account	Average
Non-native non-resident foreign investor	High
High net worth individuals (group or private classes)	High
Multiple managed accounts (money managers, financial advisors, payable brokerage accounts)	High
Companies and foreign companies	High

The major problem in the risk-based supervision is analysis and assessment of financial institutions risk. Basel Committee on Banking Supervision has emphasized on the risk management in its core principles for effective banking supervision, especially in Principles 14 to 29. The committee also, by forming a task force on cross-border banking risk matrix, has offered a proposal on how to analyze financial institutions risk that can be used by the financial institutions and monitoring authorities to assess the money laundering risk of financial institutions.

What is certain is that the money laundering is among complex topics in the field of economic corruptions, which has low detectability and discoverability rate due to its criminal nature. On the other hand, definitions of domestic and foreign authorities are different; therefore, contracts and scientific foreign documents seem less important in practice in developing money laundering risk assessment model. Another point is that most of crime prevention indicators applied in financial institutions are confidential and are rarely made public. Therefore, in order to solve the aforementioned problem, the qualitative analysis method of Grounded Theory was applied.

2. Results

Research has been defined a systematic search for the undetermined position. There are many ways to answer research questions. The present study is a cross-sectional study based on the Grounded Theory strategy; therefore, it has a post structuralism paradigm, inductive approach, in which data are collected using the open questionnaire method. The Grounded Theory provides an inductive method for the creation of unified theories by in-depth internal and external reviews (Flint and Golicic, 2009) [13]. The purpose of the Grounded Theory is to discover theories by induction based on comparative analysis. Creswell (2009) [8] enlists some assumptions that are widely seen in the Grounded Theory-based research as follows:

- The purpose of Grounded Theory is the production or discovery of a theory;
- In the strategy of Grounded Theory, researcher forms a substantive theory by put together a set of theoretical ideas;
- This theory focuses on how people interact with the studied phenomena;
- The theory supports a possible relationship between concepts

- and a set of concepts;
- The theory is derived from data obtained from field surveys, interviews, observations and documentation;
- Data analysis is a systematic process that begins as soon as the data are made available;
- Data analysis is associated with the identification of categories and linking them to each other;
- Additional data (more sampling) are collected based on the formation of the concepts;
- The concepts are developed by continuously comparing them with new data;
- Data collection can be stopped simultaneously with the emergence of new conceptualizations;
- Data analysis begins with open coding, (identifying categories, characteristics and dimensions), and continues with axial coding (investigation of conditions, strategies and outcomes) and selective coding (forming a theory about a category);
- At the end, the theory resulting from this strategy can be presented as a set of propositions or a story.

The data analysis process begins with open coding. The open coding is an analytic process during which the identified concepts and the features and dimensions of each concept are discovered (Strauss & Corbin, 1998). During the open coding, events or things observed in data are named and the focus is made on understanding the characteristics, which lead to

uniqueness of these events. In open coding, there are two key activities, including conceptualization and categorization.

Population and sample

In this study, the statistical population consists of laundering experts in the banking industry of the country. The study population was selected from anti- money laundering experts of the banking. The approximate population included nearly 20 people. It is worth mentioning that the measurement criterion of the sample size is the theoretical adequacy in the Grounded theory methodology, i.e. no concept or code is not added to the content by conducting new interviews. Also, after conducting 14 interviews, the model reached theoretical saturation. It is worth noting that generally in the grounded theory, a total of 30 interviews are recommended (Ghasemi and Nadiri, 2016), but in this study, the model reached the theoretical saturation in the Fourteenth interview.

The three stages of open, axial and selective coding are done in Grounded theory after conducting implementing qualitative interviews. In open coding, categories are configured by separating the gathered qualitative data. At this stage, main categories and sub categories are extracted by analyzing data collected from interviews, observations, daily note takings, and technical notes-resulting from field operations. Open coding continues in the form of a zigzag process (reciprocating mode) until categories are saturated (see Figure 1).

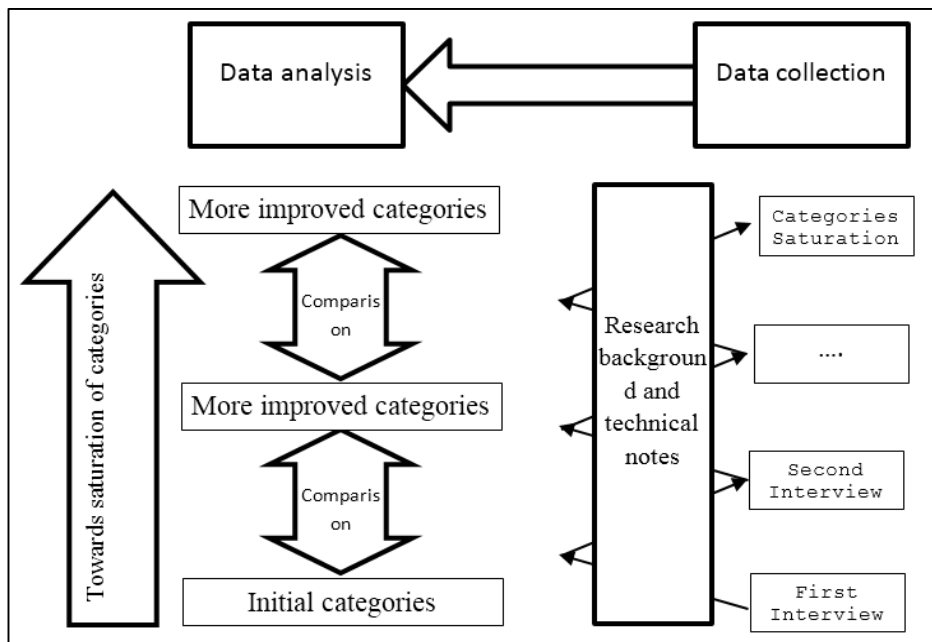


Fig 1: Zigzag approach to data collection and analysis for saturation of categories (Bazargan, 2008)

The purpose of axial coding is the integration of data separated in the open coding phase. In axial coding, one of the categories of the coding open is selected as the main category or phenomenon and is placed in the center of process, to which other categories (sub-categories) are linked later. According to Strauss and Corbin (1998), the main phenomenon is a title that can be attributed to the answer the question "What is happening here?" While searching for the original phenomenon, the researcher must look for repetitive patterns of events, or actions / reactions manifest by individuals or organizations, alone or together, in response to problems and opportunities lie ahead. According to Strauss and Corbin (1998), the axial coding refers

to linking the categories to sub-categories along features and dimensions associated with them (Creswell, 2009) [8]. The axial coding helps to the formation of relationships between phenomenon / main category and answering questions associated with the original phenomenon (sub-categories) such as When, Where, Why, Who, How and with What consequences. Intellectual divisions are created among theorists in the field of the Grounded Theory. This perspective is derived from the degree of abstraction to the phenomenon under study. In a more structured approach, Strauss and Corbin (1998) believe that the phenomena studied in Grounded Theory follows the following logic (Figure 2).

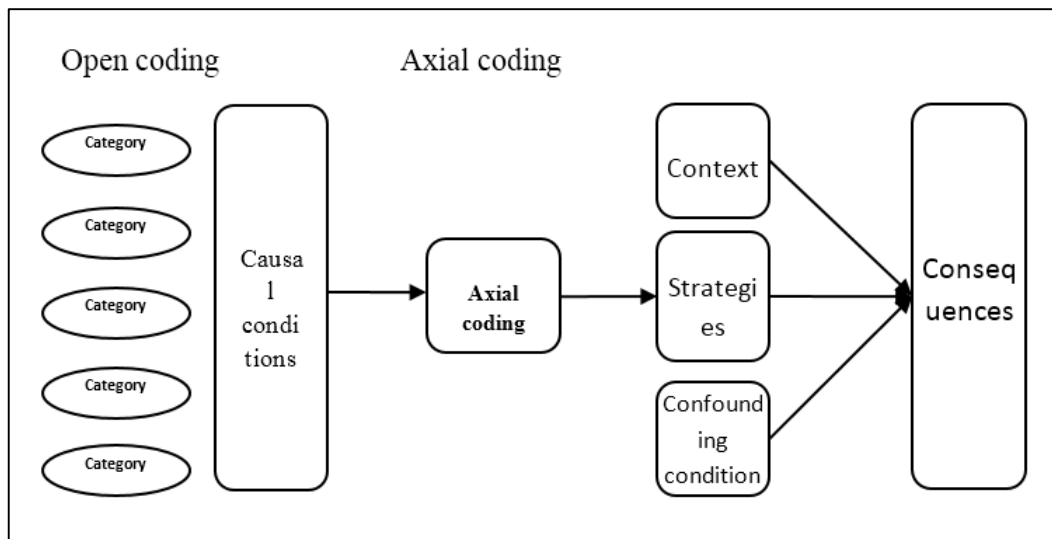


Fig 2: Open and axial coding paradigm (Creswell, 2009) [8]

Reliability and validity of the model

The validity of the measurement instrument shows its accuracy. Since in this research, qualitative and quantitative research methods were used at the same time, the research team is faced with two types of validity. Regarding terms such as reliability and validity, a group of researchers believe that these tools are relevant in quantitative research methods rooted in the authenticity paradigm (Golafshani, 2003) [14], there is no need to examine and explore these concepts. On the other hand, the other group of researchers offers different qualitative methods, definitions and interpretations of the concepts of reliability and validity (Faghihi and Alizadeh, 2004) [8]. In the qualitative research, the term validity refers to concepts such as believability, credibility, and confidence in the results. It is worth mentioning that qualitative researchers primarily have no claim over the validity of the instrument and research results. In qualitative research methods, researchers often do not seek to prove the validity of their results. Although the validity criterion is rooted in the positivism and quantitative paradigm, qualitative researchers can benefit from the criteria in order to enhance the credibility and defend ability of their research by redefining it based on the paradigm of ontology and the interpretative methodology. When we talk about the credibility of qualitative research, we mean the dependability, believability, credibility and even reflectivity of the research (Ghasemi and Nadiri, 2016). Most researchers believe that reliability is not relevant in

qualitative researches. However, some introduce open coding of text / interviews as tool to assess the reliability (Khastar, 2009) [17]. Another indicator, which is considered as the reliability of qualitative research is the evaluation of two or more interviews in terms of reference to indices. Maxqda software is capable of such a process. Since the above codes have two-valued nature (0 and 1), in addition to qualitative (visual) investigation among the documents, there is the possibility of benefiting from agreement coefficients such Kappa coefficient.

As mentioned earlier, the open coding is used to assess the reliability of coding and categorization of documents and interviews. In the method, the other person is requested to re-encode the document (article / interview). If the views of two persons on the codes are convergent, the reliability is confirmed. In this study, the criterion of the degree of convergence was Cohen's kappa coefficient. In this study, to assess the reliability of the meta-synthesis stage and Grounded theory, two texts (an interview and an article) were re-coded separately and the agreement coefficient of (0.604) was more than the acceptable value (Viera et al. 2005) [37]. The value means a satisfactory agreement (reliability) in the quantitative research stage. In Table 1, the evaluation has been carried out on the kappa coefficient obtained from SPSS software. Also a significance coefficient of less than 0.05, indicates the presence of coding relationship between the two studied documents.

Table 1: Testing the agreement between the researcher and one of the experts in coding the interviews

Value	Estimated standard deviation		Estimated Significance (Sig)	Kappa Measure of agreement	
	of a	of. T _b			
0.632%	0.240%	1.212	0.034	21	N of Valid Cases

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis

3. Discussion

As mentioned, in this study, a total of 378 codes were extracted as result of conducting 14 qualitative interviews. The reason for the high multiplicity of codes in comparison with conventional studies is the research breadth and variety of references and documents used in this study. At the same time, the involved factors with the frequency of 121 codes, has highest frequency of references. Among the studied documents, the interview

conducted by an expert in the Export Development Bank had the highest number of codes. Interviewees in response to questions related to money laundering underlying conditions in the banking industry offered explanations and introduced the factors. Moreover, the final codes related to underlying conditions were obtained after extracting and analyzing the initial code of the interviews. Table 2 shows the initial and final codes related to underlying conditions.

Table 2: Identified initial and final codes associated with underlying conditions

Frequency of codes	Final code	Concept	General category
1	Involvement of political and military systems in banking affairs	Political barriers	Underlying conditions
2	Sanctions		
1	The inaccuracy of tax indices	Economic barriers	
1	Costly anti-money laundering programs		
1	Lack of believing in the importance of the fight against money laundering by employees	Social / cultural Barriers	
3	Lack of determination in the fight against money laundering		
1	Lack of bank employees' confidentiality		
1	Insufficient training of staff	Technology barriers	
0	Information weakness - the lack of proper database		
5	Lack of connected databases		
2	Lack of appropriate hardware		
1	Lack of proper software		
2	Presence of core banking system	Legal factors	
1	Lack of links among banks		
1	Absence of uniform rules for banks in attracting or not attracting customers		
3	Lack of proper identification of customers by banks		
2	Lack of Parallel activity by financial institutions		
1	Poor information delivery to banks		
2	Absence of appropriate laws and guidelines		
2	Inappropriate law		
1	Absence of legal requirements for law enforcement		
2	Lack of enforcement of existing rules and guidelines		
1	Inability of banks to implement the rules		

According to Table 2, codes relating to disintegration of the databases of banks, lack of determination in the fight against money laundering in fighting against money laundering and lack of proper identification of customers by banks were among the most referred codes. Similarly, the causal, intervening factors, strategies, consequences and measures were identified and

analyzed. Some of the factors are referred to in the Result Section. Based on the interviews, factors involved in money laundering customers risk assessment should be considered in terms of actual / legal, political / apolitical nature of customers in money laundering risk assessment (Figure 3).

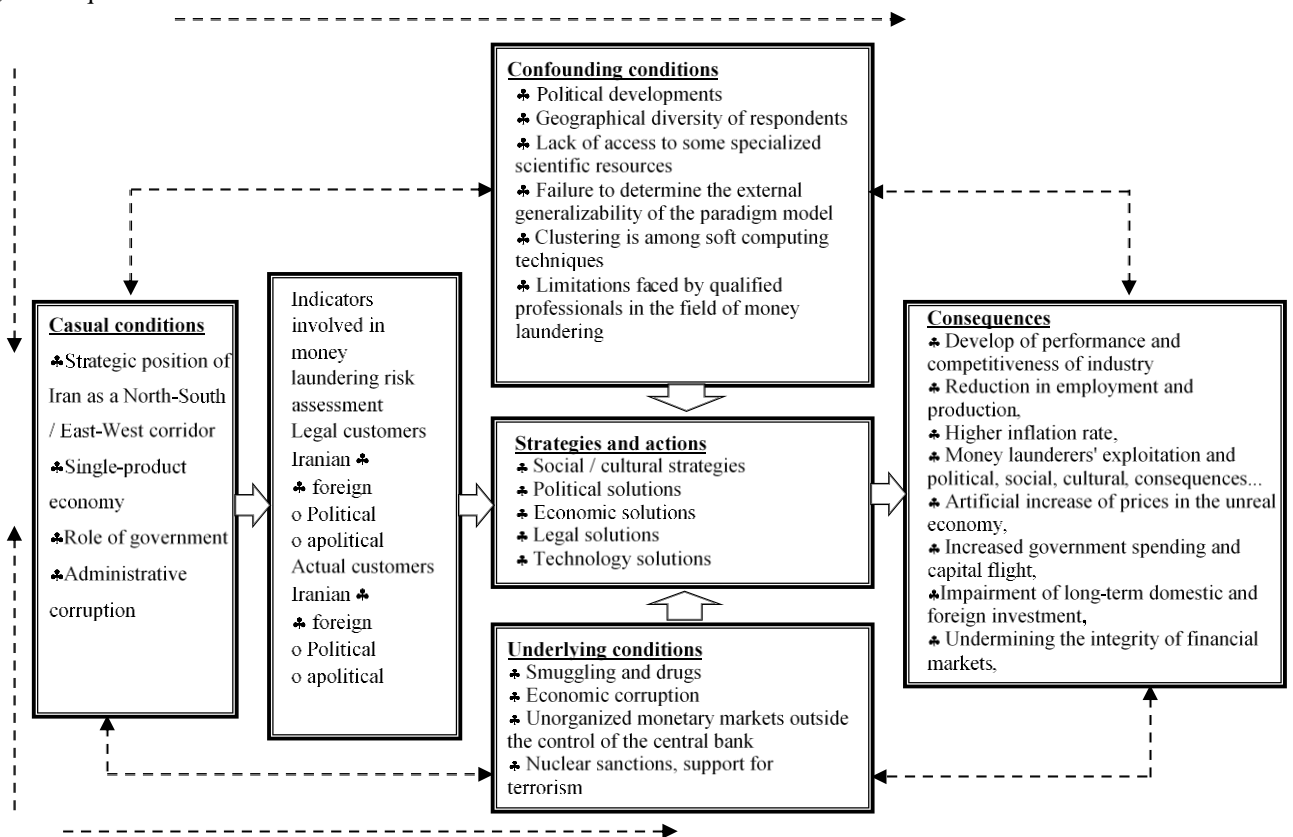


Fig 3: money laundering paradigmatic model

Table 3: main customer money laundering risk assessment criteria in Iranian banking industries

Foreign natural customer		Iranian	
political	Natural None-political		
	By visa	Political asylum	
Account delegation	Infancy	Infancy	Infancy
Work place	Account delegation	Account delegation	Account delegation
Opening account and work activity distance	Workplace location	Workplace location	Workplace location
Type of first service requested	Job type	Work context	Work context
Joint account	Work context	Job type	Job type
Customer interest to use virtual services	Opening account and work activity distance	Opening account and work activity distance	Opening account and settlement distance
Matching customer organizational position and account activity	Type of first service requested	Type of first service requested	Type of first service requested
Matching customers' age and account activity	Opening Share accounts	Opening Share accounts	Opening Share accounts
nationality	Customer interest to use virtual services	Customer interest to use virtual services	Customer interest to use virtual services
	Matching customers' age and account activity	Matching customers' age and account activity	Matching customers' age and account activity
	Matching customers' job type and account activity	Matching customers' job type and account activity	Matching customers' education and account activity
	Nationality	Matching type of visa and customer account	Matching customers' job type and account activity
	Type of visa	Matching workplace and transportation permitted area	Matching customer workplace and settlement place
	Matching type of visa and customer account		

Conclusions and recommendations

This study sought to identify components involved in the money laundering risk assessment, causing factors as well as consequences of customers' money laundering. For this purpose, Grounded Theory, which is classified as qualitative research techniques, was applied. The results led to reckoning and identification of money laundering risk indicators among actual / legal and internal / external customers of banks. According to the current circumstances in the country, the implementation of the following strategies is useful, according to participants, in order to improve customers' money laundering risk. Strategies, stated by the elite in the field of money laundering and banking industry, to improve performance of the prevention and anti-money laundering systems are as follow:

Political solutions

- lifting sanctions in the financial and banking fields
- Adoption of international policies to combat money laundering by the government

Economic solutions

- Considering the person carrying a lot of cash due to his job
- Identification of tolerances and persons' exchange fluctuations
- Identification market and the risks involved in its activities
- Identification the type of financial institution
- Extraction and classification of jobs lists

Social / cultural strategies

- Transparency of information by financial institutions (improving the transparency of information)
- Correct communication between boss and subordinate (reinforcing mechanism of corporate communications)
- Staff training
- Internal Control
- People training
- Culture of transparency information.
- Serious determination to combat money laundering
- Changing the approach to the issue of money laundering
- Preventing the creation of the dirty money

Technological solutions

- Integration of information.
- Linking banks to one another
- Setting up swift and clearing system
- Upgrading banking network software
- Getting online software
- Development of Electronic Banking
- systematization of processes (process improvement)
- Legal solutions
- Banking system refusal to release large bank notes
- Preventing the physical movement of money and wealth
- Formation of the anti-money laundering committee at the national level
- Financial Intelligence Unit monitoring the performance of banks
- Direct supervision of the Central Bank in the field of banking
- Preventing institutions' infringing activities
- Parallel activities of financial institutions
- Establishing legal requirements for the implementation of Regulation
- Correction, revision and completion of rules

The qualitative research approach, by deeply looking at the studied phenomenon, is trying to discover the facts hidden from multiple beneficiaries, from the perspective of participants; But the most important weakness of the qualitative research can be considered as the inability to explain, generalizability and validity (at least in the sense of what is referred to in the quantitative research). Moreover, to assess the validity of the conceptual model, the qualitative research approaches were used with a focus on linear structural equation modeling. Customers' money laundering risk assessment model requires an integrated guideline for quantification of indices involved in of customers' money laundering risk assessment. Also, use of quantitative techniques to classify customers based on the above indices, greatly contributes to clarify this concept. In this context, it is recommended to use multiple attribute decision making, clustering techniques and discriminant analysis. The final point is that the present study is done at the time when Iran was under the pressure of sanctions; therefore, review and implementation

of the model in post-sanction conditions require adjustment and consideration of contingency factors in assessing the customers' money laundering risk.

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