

Behavioral determinants of nonperforming loans in Bangladesh

Nonperforming
loans in
Bangladesh

Ratan Ghosh and Kanon Kumar Sen

*Department of Business Administration in Accounting and Information Systems,
Bangladesh University of Professionals, Dhaka, Bangladesh, and*

Farzana Riva

*Department of Business Administration in Marketing,
Bangladesh University of Professionals, Dhaka, Bangladesh*

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Abstract

Purpose – Over the last ten years (2010–2019), the amount of nonperforming loans (NPLs) has been more than tripled in the banking industry of Bangladesh. Thus, this paper explores the behavioral dimensions, which contribute to the NPLs.

Design/methodology/approach – By analyzing social, cultural, psychological, political, economic, internal control mechanism and law enforcement contexts of Bangladesh, this study identifies nepotism (NE), moral hazard (MH), inadequate collateral (IC), poor credit assessment (CA), lack of proper monitoring (LPM), repayment flexibility (RF), business risk (BR) and lending interest rate (LIR) as the catalysts of raising NPLs. Next, a structured questionnaire survey has been performed in Bangladesh among bank officials who closely work in credit risk management, credit supervision, corporate finance and loan recovery department. Finally, partial least squares (PLS) path modeling, a variance-based technique of structural equation modeling, is used in this study as a statistical tool to analyze the data.

Findings – This study finds that moral hazard problem, lack of proper monitoring, inadequate collateral and nepotism have significant positive impact on the raising of NPLs. Unfortunately, this study does not find any statistical significance of poor credit assessment, business risk and repayment flexibility on the NPLs in Bangladesh. Finally, this study reveals that lending interest rate has significant positive impact on the NPLs. Hence, this study concludes that domestic lending interest rate is not lower enough, and so this double-digit interest rate affects negatively to loan repayment.

Research limitations/implications – This study concludes that moral hazard problem of borrower, lack of board independence, lack of proper monitoring, form and extent of collateral, management lobbying, indecorous personal guarantee by management, dependent-independent directors and nepotism are extensively contributing for occurring NPLs in Bangladesh. These noninstitutionalized stimulators should adequately be scrutinized by regulatory bodies, policy makers and banks. Besides, LIR needs to be decreased in a convenient level for mitigating NPLs.

Originality/value – This study is the empirical evidence of behavioral dimensions related with the growth of NPLs in Bangladesh by taking direct response from knowledgeable bankers.

Keywords Bangladesh, Banking industry, Behavioral dimensions, Structural equation modeling

Paper type Research paper

1. Introduction

Financial stability works as a basement for the sustainable economic development of an economy since it has significant positive impact on economic performance (Sestakova, 2012).

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For example, since inclusive stability of banking sector is influenced by overall nonperforming loans (NPLs), and stock market development emblems the stability of financial sector (Creel *et al.*, 2015), the sustainable development is largely contributed to the financial stability sector. In this respect, strengthening financial institutions of an economy can be worked as a controlling mechanism to ensure financial stability. Again, banking sector supplies the lifeblood to the economic development of an economy. This institution is used to keep the balance of money circulation between the money lenders and borrowers of a financial ecosystem. When this flow becomes slow down or disrupted by NPLs, it creates vulnerability in the overall process of implementing economic and public policies of an economy. Recently, banks are confronting an issue of NPLs in Bangladesh (Khatun and Ghosh, 2019). NPLs have decreased the loan giving capacity of the banks. In 2010, the amount of NPLs in overall banking industry was BDT 227.1bn whereas this amount has become BDT 893.4bn in 2018, which has become tripled just within nine years. Moreover, Islam (2018) states that NPLs cause 1% loss of GDP per year in Bangladesh.

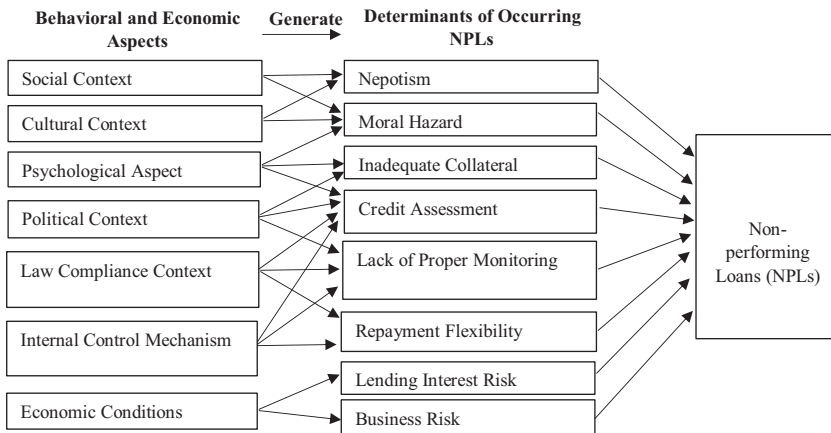
The ratio of NPLs to total loans is 10.40% in 2018, which was the highest in last nine years. “Hallmark Scam” of BDT 35,470m from Sonali Bank in 2012, embezzlement of BDT 45,000m from Basic Bank in 2013 and deceitfulness of Crescent and AnonTex of BDT 100,000m from Janata Bank in 2018 have instigated a question regarding the validity of credit assessment, credit supervision, board independence and management efficiency of the banks in Bangladesh. Besides, these scams are encouraging intentional credit default behavior of borrowers. Consequently, banks face the pressure of liquidity risk, regulatory capital management risk and business risk. Besides, banks are facing severe stress for their business, liquidity, investment, managerial efficiency and so on due to the substantial growth of NPLs.

A significant portion of NPLs in Bangladesh is performed by the high esteemed people (so called) with powerful social or political background. These scenarios reflected in the affiliation of management bodies with these fraudsters. Hence, it can be concluded that NPLs of Bangladesh are largely originated from the “unwillingness to pay” motive and can be indicated as a white-collar crime (Sutherland, 1983). The understanding of behavioral motives of these fraudsters should be a crucial way to identify the catalysts of raising NPLs. Therefore, this study tries to explore the roots of NPLs by the standpoint of behavioral dimensions to uncover the motivation of loan nonpayment. The social and cultural contexts (differentials of power and influence), political coalition (catch me if you can), psychological rationalization (everyone is getting rich) and law enforcement context kindle NPLs in the banking sector of Bangladesh. In this backdrop, this paper explores social, cultural, psychological, political, law compliance, internal control mechanism and economic contexts to identify the constructs of occurring NPLs in Bangladesh. The origins of constructs of NPLs are presented in the following chart (see Figure 1).

The rest of the manuscript is arranged as follows. Section 2 outlines the behavioral aspects of NPLs in Bangladesh. Section 3 describes literature review and hypotheses development. Section 4 highlights research method including research design, population, sample and unit of analysis, measures and data analysis technique. Section 5 presents the finding of this study and interpretation of the results. Finally, this study concludes at Section 6 with some policy recommendations and limitations.

2. The behavioral aspects of NPLs in Bangladesh

The interdisciplinary harmony among behavioral sciences for instance, anthropology, sociology, psychology and criminology adjoins the field of intentional or unintentional fraud examination, theory building in forensic accounting, prevention and deterrence. However, behavioral scientists lag behind to develop and identify well-recognized maxim or maxims



Source(s): Authors' own creation

Figure 1.
The sources of the constructs of occurring NPLs

that foretell perpetrators' propensity of fraudulent activities. In this respect, NPLs in Bangladesh are mainly originated from two sources such as management conspiracy (Hallmark Scam [1]) and high esteem businessman/entrepreneurs (so called) who have powerful political and social backgrounds. These two roots can be adumbrated as the channel of white-collar crime since Sutherland (1940) describes that white collar crime is beyond the traditional aspect of crimes originated from poverty, distressed personality and broken homes. Moreover, Sutherland (1983, p. 7) argues that "white collar crime committed by the person of respectability and high social status in the course of his occupation". Further, Edelhertz (1970) argues that white-collar crimes is a fraud or series of frauds occurred by nonphysical ways and by disguising guile, to acquire money, to avert the repayment of money or to acquire business. Therefore, Cressey (1973) characterizes themselves as "trust violators" who exploit the fiduciary position by "selling the hope of people". This genesis of white-collar crime can be understood by an imperative conceptual framework called fraud triangle, roughly based on what detectives and policemen think in reference to as "means, motives and opportunity" (Ramamoorti, 2008, p. 525). The sources of NPLs categorized as a white-collar crime can be described as following perspectives.

2.1 Social context

The lack of social denigration of the loan defaulters encourages not to pay back the loans. For example, society treats a man as qualified groom who has vast amount of resources (whether originated from legal sources) or has an occupation with opportunity to commit fraud. He gets priority for the marriage or making kinships. In addition, introducing one as a family member or family friend of the most corrupted wealthy person is not considered a defamatory remark. Unfortunately, the direct avoidance of these particular personnel (fraudsters) is not possible, since these loan defaulters belong to the elite class of this society. Indeed, Braithwaite (1991, p. 9) states the "differentials of power and influence as well as the dynamics of inequality in wealth, power, status and personal reputation have influenced the white collar crime". These scenarios generate a fraud chain in banking industry through nepotism (NE) and moral hazard. For example, most of the banks construct management bodies comprising family members, family friends or compliant independent directors, resulting the lack of supervision

in sanctioning and collecting related party loans. Moreover, young people of this society are busy with long period study or wait for long time before entering into dead-end job. This scenario drives themselves into fraudulent mentality or self-destructive behavior after joining in work.

2.2 Cultural context

Most of the white-collar crimes are committed by the formerly good people and first-time fraudsters. These upper- and middle-level managers of the business or established businessmen are aware of idealism and thoughtfulness but have turned into fraudsters. Therefore, it will not be appropriate to conclude that the business fascinates only bad people. Thus, the question “*why good people do the dirty work*” can be answered by borrowing the concept of [Vaughan \(1992\)](#) that states the “enduring puzzles”, which explains the culture of the firm or climate of the business generally converts into bad people. Similarly, [Braithwaite \(1989\)](#) states that “*the culture of compliance*” or “*the culture of resistance*” has been generated within the organization to avert regulatory frameworks or criminal laws. Besides, “*assortative mating*”, which harmonizes and attracts the corruption-mined people within the organization and outside upstanding business personalities. These scenarios in the working environment harvest corrupt-minded people and yield moral hazard (MH) within initially good employees. Consequently, the compliance of corporate governance guidelines is merely for law compliance, outlying the concept of establishing a proper control mechanism.

2.3 Psychological aspect

[Perri et al. \(2014\)](#) argue that psychopathy may be the symptomatic of prospective white-collar criminal attitude particularly when criminal traits are existent. For example, the peer-group effect “*everyone is getting rich, so why I left behind*” creates cognitive dissonance within the good people to commit fraud. These people are contaminated by self-promotion and greed, passion with material possession and exploiting others for selfish goal (similar with Kant’s view) (see [Hare, 1998](#)). This motive can be explained as “*We are not in business for our health*”, “*Business is Business*” and “*No business was ever built on the beatitudes*” ([Sutherland, 1983](#), p. 245). This psychological state of upper- and middle-level managers impedes long-term orientation like wealth maximization and sustainability in the banking industry. This circumstance stimulates inadequate supervision in collateral checking, business risk and credit assessment and related activities at loan sanctioning. Sometimes, a portion of the corruption-owned wealth is used for building or patronizing religious or charitable organizations, the behavior that is psychologically rooted feeling called “*cognitive dissonance*”.

2.4 Political context

The “*veil of deception*” is originated from “*social engineering*” ([Hinson, 2008](#)) process, which includes systematic manipulation and persuasion to mislead people and defend oneself by claiming that he or she is not associated with fraudulent activities ([Ramamoorti, 2008](#)). Some political personalities or their kinships are such social engineers and have the motive like “*catch me if you can*”. Sometimes this pressure on banks or upper management kindles inadequate collateral, improper or no credit assessment and lack of proper monitoring (LPM). For example, after committing “*Hallmark Scam*” in a state-owned bank of Bangladesh, one of the engaged fraudsters commented “*I never thought that I have to give back the money*”. This motive is actually originated from her political and social background, which have been proved from disguising (sometimes not even having power to disclose) the engaged fraudsters related with major fraud cases in Bangladesh such as basic banks [2] and other scandals [3]. Besides, the culture of delayed punishment, less punishment or even no punishment of these crimes has also encouraged loan defaulters ([Sinder, 1982](#)).

2.5 Law compliance context

Braithwaite (1985, p. 13) states “white collar crime is better achieved by the compliance of law enforcement systems than by deterrence of law enforcement systems”. Hence, in “the culture of compliance” or “the culture of resistance”, the law enforcement in the business is limited only in compliance to avoid punishment. For example, the certain percentage of the independent directors in the board and audit committee has been mandatory in corporate governance guidelines in Bangladesh. Although all firms have followed the guidelines, the family members, relatives or family friends of the management or board of directors (BODs) have been appointed as independent directors, resulting independent directors with no independence. Hence, this study mockingly describes as dependent-independent director. Even the spouse of BODs with less educational qualification has been appointed as an independent director. Again, carrying out external audit work to comply a statutory requirement has become just like an ornament. By analyzing the audit report of 29 listed commercial banks from 2005 to 2017, this study reveals that around 98% of banks have been given an unqualified audit report even in the high loan defaulting environment.

3. Literature review and hypotheses development

NPLs have become a critical factor for banks’ performance as well as sustainable economic development of Bangladesh. Numerous studies for instance, Park and Zhang (2012), Ikram *et al.* (2016), Radivojevic and Jovovic (2017), Fajar and Umanto (2017), Rajha (2017), Umar and Sun (2017), Khatun and Ghosh (2019), etc. have identified many possible reasons of NPLs in different country perspective. Most of these findings can be divided into bank specific factors comprising solvency ratio, net profit margin, inefficiency ratio, loan to deposit ratio, market power ratio, reserve ratio, credit growth, leverage, credit terms, differentiated loan products, ownership concentration, etc. and macroeconomic factors comprising real GDP growth, lending interest rate (LIR), unemployment, inflation, exchange rate, etc.

Next, Ikram *et al.* (2016) and Asfaw *et al.* (2016) have identified some behavioral factors of NPLs such as type of collateral, quantity of collateral, credit assessment, lack of proper monitoring, poor credit culture, grace period of credit repayment, creditors’ behavior, repayment flexibility, credit policies, tenure of loans, etc. Moreover, Kumar *et al.* (2018) find that bad management is a triggering factor of NPLs. Again, Novellyni and Ulpah (2017) find that moral hazard has a positive significant impact on NPLs.

3.1 Lending interest rate (LIR) and NPLs

Working as a middleman, banks earn interest income by lending money to borrowers and distribute a portion of earning to depositors. Thus, banks can increase their earning from this traditional source by distributing more loans (Osei-Assibey and Asenso, 2015). Occasionally, bank becomes aggressive to distribute loans in risky projects with a high LIR. It paves the way to accept compromised credit assessment and inadequate collateral. This loan can create extra burden for the borrowers to pay higher amount of installment, and this created a risk of repayment failure. Besides, macroeconomic conditions may create the burden of higher interest even in solvent business. Therefore, it may cause slow down the payment of principal amount along with increased interest expense. Hence, the higher LIR may stimulate the chance of repayment failure.

H1. It is assumed that there is a significant positive impact of lending interest rate on NPLs.

3.2 Credit assessment (CA) and NPLs

As a middleman, bank has the responsibility to protect the wealth of the depositors. For this purpose, the credit assessment is a crucial task for each bank. Ikram *et al.* (2016) and

[Asfaw et al. \(2016\)](#) identify poor CA as a significant contributor of occurring NPLs. Hence, banks should perform a rigorous credit assessment analysis in respect of borrowers' credit worthiness, financial strength and repayment capacity before lending money. Often, poor CA leads to poor-quality performance of the loans.

H2. It is assumed that there is a significant positive impact of poor credit assessment on NPLs.

3.3 Lack of proper monitoring (LPM) and NPLs

The activities of a bank should not be limited up to loan disbursement after analyzing a loan proposal. It should keep it eyes on the use of funds and provide appropriate feedbacks or suggestions regarding the use of funds. [Ikram et al. \(2016\)](#) argue that proper credit supervision and monitoring enhance loan performance. If any investor does not use the fund properly, which has mentioned in loan proposal, it may lead to be a poor-quality loan, resulting vulnerability in loan pay back. [Asfaw et al. \(2016\)](#) find lack of proper monitoring has a significant impact on NPLs. Moreover, [Park and Zhang \(2012\)](#) conclude that management's reluctance toward credit monitoring causes more NPLs.

H3. It is assumed that there is a significant positive impact of lack of proper monitoring on NPLs.

3.4 Nepotism (NE) and NPLs

To reduce the agency cost, the independency in board plays a significant role in the company. However, the appointment of family members, family friends or dependent-independent directors spoils the independence of board. The vague election procedure of board members is also an obstacle of factor. It paves the way to elect inefficient, less experienced or incompetent board members. However, it is very much important to have a sensible and competent board members to establish proper fund management. It is found that board members are not efficient in managing NPLs and independent directors are not truly independent in Bangladesh ([Khatun and Ghosh, 2019](#)). This environment generates probable reasons like biased lending behavior ([Lu et al., 2005](#)), lack of honesty in credit management, political influence ([Luo and Ying, 2014](#)) and pressure on boards.

H4. It is assumed that there is a significant positive impact of nepotism on NPLs.

3.5 Business risk (BR) and NPLs

BR is the probable threat to lose the profit or get exposed to substantial financial loss due to operational failure. From the perspective of lenders, BR can be a critical factor for collecting loans. Besides, from the perspective of borrowers, loans create a committed fixed cost (interest expense). Thus, bank should assess the business risk of borrowers whether business turnover is sufficient enough to pay the interest and principal amount of loans. When borrowers' BR is higher, it increases the chances of NPLs. Therefore, [Asfaw et al. \(2016\)](#) argue that borrowers' credit performance and business growth help to mitigate the possibility of NPLs.

H5. It is assumed that there is a significant positive impact of business risk on NPLs.

3.6 Inadequate collateral (IC) and NPLs

As a protector to depositor's resources, bank should maintain adequate collateral as a secondary source of loan collection, since collateralized loans work as safeguard against loan defaults ([Koch and MacDonald, 2009](#)). To understand the importance of collateral,

[Ikram et al. \(2016\)](#) find the impact of nature and valuation of collaterals on NPLs in the selective banks of Pakistan. Besides, the study concludes that 62% banks have sanctioned loans in favor of 70% collateral levels, causing the uplift of NPLs. As most of the borrowers do not keep any collateral for their loans, they do not feel any obligation to repay loans in Bangladesh ([Bangladesh Bank, 2017](#)). Consequently, NPLs are rising very unseemly.

H6. It is assumed that there is a significant positive impact of inadequate collateral on NPLs.

3.7 Moral hazard (MH) and NPLs

Borrowers' cultural orientation and behavior play an important role in loan repayment. A MH problem arises when borrowers get exposure to any risky event or do not obey social value and norms. For example, [Novellyni and Ulpah \(2017\)](#) find the impact of MH problem on lending behavior of borrowers in Indonesian banking industry. Again, [Zhang et al. \(2016\)](#) argue that a MH problem causes deliberate loan default (see also [Asfaw et al., 2016](#)).

H7. It is assumed that there is a significant positive impact of moral hazard on NPLs.

3.8 Repayment flexibility (RF) and NPLs

For loan repayment purpose, borrowers need to pay a fixed amount of money for a certain period of time. Occasionally, borrowers may fail to pay installment on the specified date. Whether banks allow such kind of failure of repayments is subject to investigation. [Field and Pande \(2008\)](#) conclude that RF gives borrowers an opportunity to pay at later date and reduces the burden of payment. In large extent, RF includes loan rescheduling, legal actions for delayed payment and soft behavior in loan collection.

H8. It is assumed that there is a significant negative impact of repayment flexibility on NPLs.

However, there exists a dearth of study focusing on the perception and behavioral reasons of NPLs in Bangladesh. What the genesis of the NPLs in behavioral aspects is and how it can be controlled from behavioral dimensions have been avoided in most of the studies. Hence, this paper identifies the roots of NPLs in respect of behavioral dimensions by taking direct response from knowledgeable bankers of Bangladesh, and how NPLs can be controlled through behavioral dimensions in a developing country. Besides, the regulatory bodies will get acquaintance with some non-institutionalized factors in bank such as NE, LPM, management lobbying in loan sanction, complaint independent directors and moral hazard, ultimately contributing to the raising of NPLs. Hence, this study will help regulators, policy makers and management to control NPLs.

4. Research method

4.1 Research design

This study uses appropriate and relevant data to analyze the hypothetical relationship among the variables prescribed by [Cooper and Schindler \(2006\)](#). This study has collected data for this purpose at once and carried out a cross-sectional analysis ([Sekaran and Bougie, 2010](#)). Data are collected from knowledgeable bankers who closely work credit risk management, credit supervision, corporate finance and loan recovery department. A structured questionnaire was designed to collect this primary data. This questionnaire survey method is appropriate while examining the hypothetical relationship among the proposed variables and constructs, which are sociological in nature for instances, attitudes, beliefs, opinions and preferences ([Salkin, 2006](#)). Finally, the analysis is conducted to obtain an

empirical support for these hypothesized relationships through structural equation modeling (SEM).

4.2 Population, sample, and unit of analysis

The purposive sampling technique is used for choosing a sampling frame. It is used specially when data should be collected from a specific group of people who are knowledgeable about the subject matter and data are confined to specific types of people who can provide the desired information. Due to their knowledge regarding the subject matter, they can meet some criteria set by the researchers (Sekaran and Bougie, 2010). The targeted population of the study includes bankers over 50 banks in Bangladesh.

4.3 Measures

The constructs of each variable are measured based on social, cultural, political, law compliance, psychological, internal control mechanism and economic contexts of Bangladesh. Besides, this study takes into consideration of earlier studies (such as Luo and Ying, 2014; Asfaw *et al.*, 2016; Ikram *et al.*, 2016; Zhang *et al.*, 2016; Bangladesh Bank, 2017) to build the constructs of each variable. The confirmatory factor analysis is conducted to identify the factor and factor loading of measured variables.

4.4 Data analysis technique

Two software techniques are used for data analyzing. Statistical package for social sciences (SPSS) is used to make the data ready for analysis and to get the descriptive statistics. Partial least squares (SMART-PLS) is used to get SEM, which assists to identify the significance of hypothesized relationship in the theoretical framework with different types of validity. Moreover, SEM aids in the explanation of relationships among multiple variables (Hair *et al.*, 2011).

5. Findings and interpretation of the results

5.1 Demographic characteristics

For collecting data, 350 self-administered questionnaires were distributed to targeted respondents. A total of 245 questionnaires were returned in which 238 questionnaires were returned with fully completed, representing 68% response rate. However, a sample size of 100 is sufficient for PLS analysis (Hair *et al.*, 2013). Besides, Rubel *et al.* (2016) find 43.25% response rate in a survey analysis in the banking industry of Bangladesh. Hence, this sample size is adequate for PLS-SEM analysis and drawing conclusion. The general descriptions are summarized in Table 1.

5.2 Measurement model

Convergent validity and discriminant validity help to assess the acceptance of the estimated model. This study uses both convergent and discriminant validity to assess the estimated model. Convergent validity measures the appropriateness of each individual item to build any specific constructs (Hair *et al.*, 2013). The factor loading of each items, average variance extracted (AVE) and composite reliability (CR) help to assess the convergent validity (Hair *et al.*, 2013). The study finds AVE and CR at acceptable level, i.e. greater than 0.50 and 0.70, respectively, (Chin, 2010).

5.3 Discriminant validity

To assess the estimated model, discriminant validity (DV) is also used as one of the important criteria. Two approaches are widely used to report whether DV is in acceptable level. First,

Demographic profile	Number 238	Percentage
<i>Age</i>		
26–30	68	28.57%
31–35	73	30.67%
36 and above	97	40.76%
<i>Gender</i>		
Male	168	70.59%
Female	70	29.41%
<i>Marital status</i>		
Single	58	24.37%
Married	180	75.63%
<i>Education</i>		
Bachelor	15	6.30%
Masters	214	89.92%
Above Masters	9	3.78%
<i>Industry experience</i>		
1–5 years	79	33.19%
6–10 years	83	34.87%
11–15 years	45	18.91%
15 years and above	31	13.03%

Table 1.
General descriptions of
the respondents

the items of the constructs are checked for DV by using cross loading, which is found acceptable according to rule of thumb of Hair *et al.* (2013). Second, the square root of observed AVE can be compared with correlational value of other off-diagonal value of the constructs. It is known as Fornell–Larker Criterion (FLC). This study finds FLC in the acceptable level. The result of this presented in Table 2.

5.4 Structural model

The hypothesized relationships between dependent variable and independent variables are identified through SEM (Duarte and Raposo, 2010). SMART–PLS can easily find variances in dependent variable that can be explained by independent variables (Hair *et al.*, 2013). After having the insights into the estimated paths through SEM, bootstrapping analysis is used to examine the hypothesized model based on statistical significance. A total of 500 resampling

	BR	CA	IC	LIR	MH	NE	NPLs	LPM	RP (Hair <i>et al.</i> , 2013)
BR	<i>0.728</i>								
CA	0.106	<i>0.830</i>							
IC	0.005	–0.081	<i>0.707</i>						
LIR	0.024	–0.135	–0.129	<i>0.782</i>					
MH	0.057	0.123	0.140	0.060	<i>0.709</i>				
NE	–0.021	–0.069	0.019	–0.009	0.133	<i>0.822</i>			
NPLs	0.112	0.123	0.232	–0.267	0.168	–0.121	<i>0.791</i>		
LPM	0.058	0.181	0.018	0.013	0.147	0.028	0.111	<i>0.766</i>	
RP	–0.128	0.052	–0.083	0.264	–0.007	0.082	–0.110	0.138	<i>0.844</i>

Note(s): Diagonal (in italic) represent the square root of average variance extracted while other entries represent the correlations

Table 2.
Discriminant validity

are considered in this study to find the statistical significance through bootstrapping. It is found that 17.85% variances in NPLs can be explained by independent variables. Besides, independent variables are substantial enough to influence NPLs. The LIR, LPM, NE, IC and MH have significant impact on NPLs with value ($\beta = 0.245, p < 0.01$), ($\beta = 0.081, p < 0.05$), ($\beta = 0.142, p < 0.10$), ($\beta = 0.183, p < 0.05$) and ($\beta = 0.152, p < 0.10$), respectively. Unfortunately, this study does not find any statistical significance of BR, CA and RP on the NPLs. The result of SEM is presented in Table 3.

5.5 Interpretation of the results

The main objective of this study is to assess whether LIR, LPM, NE, IC, MH, BR, CA and RP have significant impact on NPLs in the context of Bangladesh. This study finds that LIR, LPM, NE, IC and MH have significant impact on NPLs. The structural path model is provided in Figure 2. In this study, lending interest rate has a significant relationship with NPLs

Direct path	Std. beta	Std. error	t-value	Decision
BR ⇒ NPLs	0.092	0.107	0.861	Not Supported
CA ⇒ NPLs	0.053	0.151	0.353	Not Supported
IC ⇒ NPLs	0.183	0.142	1.984**	Supported
LIR ⇒ NPLs	0.245	0.133	2.840***	Supported
MH ⇒ NPLs	0.152	0.112	1.356*	Supported
NE ⇒ NPLs	0.142	0.126	1.289*	Supported
LPM ⇒ NPLs	0.081	0.113	1.710*	Supported
RF ⇒ NPLs	-0.019	0.143	-0.135	Not supported

Table 3. Path analysis

Note(s): *** $p < 0.01$ denotes significant at 1 per cent level, ** $p < 0.05$ denotes significant at 5 per cent level, * $p < 0.10$ denotes significant at 10 per cent level (based on one-tailed test)

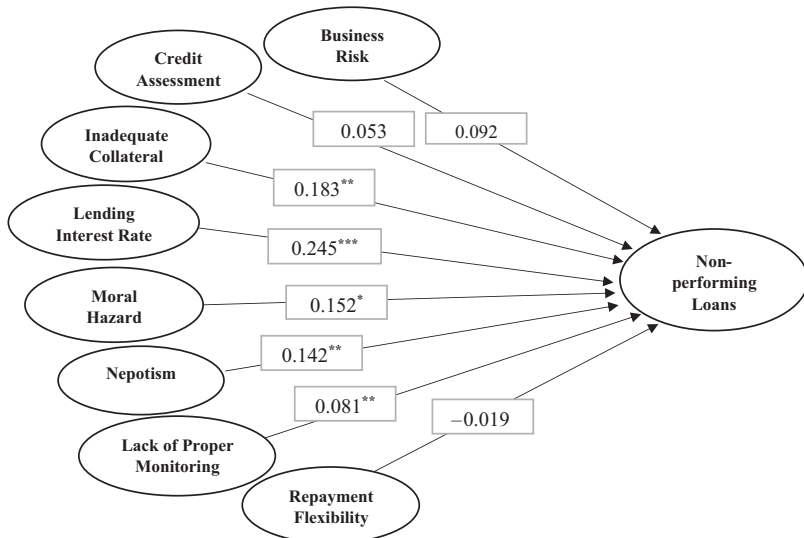


Figure 2. Structural path model

Note(s): * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$ (based on one-tailed)

(see also, [Asfaw et al., 2016](#)). This result implies that double-digit LIR in Bangladesh adds extra burden on borrowers, making unable to pay back loans at due time. Next, this study does not find any statistical significant impact of poor credit assessment on NPLs. Since poor credit assessment has positive impact on NPLs, proper credit assessment will help to establish a control mechanism in loan distributing activities, reducing NPLs in banking industry. Again, lack of proper monitoring has a significant positive impact on NPLs (see also, [Ikram et al., 2016](#); [Asfaw et al., 2016](#)). Hence, credit monitoring system of bank should follow a rigorous credit risk management guidelines to monitor loan disbursement activities and use of funds by borrower in proper manner. Further, nepotism has a significant positive impact on NPLs (see also, [Ikram et al., 2016](#)). This implies that lack of independence, biased loan distributing, political coercion and dishonest business decision lead to NPLs in the banking industry of Bangladesh. Furthermore, this study does not find any statistical significance of business risk of borrowers on NPLs (see also, [Ikram et al., 2016](#)). This indicates that business risk of loan takers has not created large pressure for generating NPLs in Bangladesh. Hence, the roots of NPLs mainly have originated from the “unwillingness to pay back” by borrowers, proving NPLs as a white-collar crime in the banking industry of Bangladesh. In addition, inadequate collateral has a significant positive impact on NPLs in Bangladesh (see also, [Ikram et al., 2016](#); [Asfaw et al., 2016](#)). Due to IC including indecorous personal guarantee, the banking industry of Bangladesh fails to collect loans amount from the pledged asset. Hence, it can be stated that the poor quality of collateral and personal lobbying of management bodies in loan sanctioning activities stimulate raising NPLs in Bangladesh. Again, moral hazard problem has a significant positive impact on NPLs (see also [Zhang et al., 2016](#)). In this respect, borrowers’ culture, social, political and psychological contexts are responsible for MH problem in pay backing loans. It creates the unwillingness to pay back the loans at due time. Finally, this study does not find any statistical significance of repayment flexibility on NPLs. It indicates that if the banking industry of Bangladesh gives RP to the borrowers, it will not stimulate significantly to pay back loans amount. Again, it proves the motive of “unwillingness to pay” since loan sanctioning activities comprise white-collar crime in Bangladesh.

6. Conclusion and policy implications

The amount of NPLs is increasing day by day in Bangladesh and becoming an alarm for this frontier economy in which sustainable economic growth is a prime concern for each and every stakeholders. The underlying reason of NPLs in Bangladesh is the motive of “unwillingness to pay” of the borrower. Hence, this study indicates NPLs in Bangladesh as white-collar crime. To identify behavioral dimensions of NPLs, primary data are collected from knowledgeable bankers. For this purpose, an anonymous questionnaire is developed by analyzing social, cultural, political, law compliance, psychological, internal control mechanism and economic contexts of the Bangladesh. The confirmatory factor analysis is used to identify the factor and factor loading of measured variables such as lack of proper monitoring, inadequate collateral, moral hazard, nepotism, business risk, credit assessment, lending interest rate and repayment flexibility. Finally, SEM is used to identify relationship between independent and dependent variables. This study finds that moral hazard, lack of proper monitoring, inadequate collateral and nepotism have significant positive impact on the raising of NPLs. Besides, business risk, poor credit assessment and repayment flexibility have no any significant impact on NPLs. These factors are largely related to the loan sanctioning process ranges from scrutinizing of loan proposal to using of funds by borrowers.

The findings reveal that the lack of independence in board, biased loan distributing, political coercion, inadequate collateral associating indecorous personal guarantee, compliant independent directors and “unwillingness to pay” motive have significantly contributed for

raising NPLs in Bangladesh. Therefore, following guidelines can be applied: (1) credit behavior or history of each borrower must be thoroughly checked; (2) political affiliation should not be considered in loan sanctioning; (3) personal guarantee should not be considered as collateral; (4) banks must follow the qualitative basis for loan rescheduling; (5) social, culture and psychological context of each borrower should largely be analyzed; (6) independence of the board, audit committee and risk management committee, and proper governance mechanism must be ensured for establishing proper monitoring. Finally, lending interest rate has significant positive impact on NPLs. It can be concluded that the double-digit LIR is also a cause of raising NPLs of Bangladesh. Besides, double-digit LIR affects negatively to the domestic investment because our lending interest rate is not lower enough to increase domestic investment. Hence, this study argues to decrease LIR in a convenient level for borrowers.

This study covers an unexplored area of NPLs in Bangladesh. Some noninstitutionalized factors in the banking industry such as political affiliation of borrowers, family duality in board, law compliance motive, indecorous personal guarantee by management bodies, directors' lobbying in loan sanctioning, moral hazard problem of borrower, dependent-independent directors and nepotism will be addressed by regulatory bodies. This findings will generate recrudescence in establishing a new control mechanism. Besides, the findings of this study will contribute to the policy making in spheres of board formation, independent directors' appointment, credit assessment, loan sanctioning process and monitoring mechanism. However, these findings are not out of limitations due to the small sample size and self-reported data from survey. Besides, this research is conducted in a geographically restricted area of the Bangladesh. Yet, it can be expected that behavioral dimensions of NPLs in frontier economy like Bangladesh would not deviate largely than those of other frontier and developing countries. Moreover, future researches can address more behavioral issues with a large sample size.

Notes

1. Hallmark Scam in Sonali Bank, Bangladesh includes fraudulent loans, taken by Hallmark Group BDT 26,861.4 million, T and Brothers BDT 6,096.9 million, Paragon Group BDT 1,466.0 million, Nakshi Knit BDT 663.6 million, DN sports BDT 332.5 million, and Khanjahan Ali BDT 49.6 million from Intercontinental Hotel (erstwhile Ruposhi Bangla Hotel) Branch, Dhaka ([The Daily Star, 2012](#)).
2. The amount BDT 45,000 million was swindled out of Basic Bank of Bangladesh. Of this amount, 95 percent loans were sanctioned by the board of directors from 2009 to 2013. There were more than 14 fraudsters including 8 businessmen, 1 surveyor, and 5 higher authorities of Basic Bank associated with this fraudulent activity ([Uddin, 2018](#)).
3. Farmers Bank of Bangladesh, approved and established under political consideration, made loss BDT 30700 million due to loan scams. This bank distributed loans amounted to BDT 53100 million in which it had deposits amounted to BDT 46730 million. The amount of loan default reached up to 58 percent of total distributed loans ([Alo, 2018](#)).

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Corresponding author

Kanon Kumar Sen can be contacted at: kanonkumardu@gmail.com and kanon.kumar@bup.edu.bd

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