Influence of behavioural biases and personal factors on credit decision-making: Should the banks be concerned?

Joseph Emmanuel Tetteh
Central Business School,
Central University
Miotso, Tema, Ghana

Eunice Adu-Darko
Central Business School,
Central University
Miotso, Tema, Ghana

Correspondence:
jetetteh@central.edu.gh

https://dx.doi.org/10.4314/ajmr.v32i2.5

Abstract

This study investigates the impact of behavioural biases and some human factors on the decision-making of bank credit managers in the Greater Accra Region of Ghana. It uses partial least squares and independent samples t-test methods to examine the impact of psychological biases and personal factors on bank credit decision-making. Except for the level of education of loan applicants, the study found a positive and significant influence of all explanatory variables on bank credit decision-making. Furthermore, the results suggest that female credit managers are more risk-averse than their male counterparts. However, the study found no significant difference between overconfidence of male and female credit managers. One area that has been ignored by previous studies is the influence of psychological biases on bank credit decision-making, especially in an emerging economy such as Ghana. To the best of our knowledge, this study is the first to examine the impact of psychological biases on bank credit decision-making in Ghana. The findings are likely to enhance the decision-making of bank credit managers, particularly in Ghana. Going forward, measures aimed at educating bank credit managers on the effect of psychological biases and human factors on credit decisions are recommended.

Key words: overconfidence, risk aversion, status quo, bank credit decision, Ghana

Introduction

The global financial crisis of the late 2000s disrupted the operation of the banking industry globally, exposing the susceptible nature of the sector. One of the key factors that has been documented to have caused the crisis is poor credit decisions in the banking sector (D'Angelo et al., 2018). It is reported that credit decisions and their resultant huge non-performing loans recorded by banks globally are primarily a result of weaknesses of the Basel Accord II. Consequently, the Ghanaian banking

industry introduced Basel Accord III, which is perceived to have more rigorous capital and liquidity requirements to ensure industry stability and restore the confidence of depositors and other stakeholders in the industry. In addition, the Ghanaian banking industry has experienced a series of reforms, such as the Financial Sector Adjustment Programme (FINSAP) in 1983, and the Bank Cleaning Exercise of 2017 aimed at correcting recurring underperformances that have led to an increase in non-performing assets and liquidity challenges. These measures were intended to enhance the solidity of banks by introducing a stricter creditworthiness assessment system and a set of measures targeted at boosting the stability and liquidity of the banking system.

Irrespective of the stringent measures employed by the central bank of Ghana, the Bank of Ghana (BoG), to clean up the banking sector and make it more robust and high performing, the ugly head of non-performing loans and its resultant liquidity problems continue to occur. Regardless of the credit appraisal methods and procedures employed, banks in Ghana continue to record high non-performing loans. There is a general perception that adverse selection exhibited by credit officers due to their inability to effectively assess the creditworthiness of loan applicants to a significant extent creates the mounting non-performing loans and liquidity challenges. Unfortunately, previous studies have failed to acknowledge the tendency of behavioral and personal biases to influence irregularities in credit decision-making. The bulk of extant literature focuses on the impact of psychological biases on investment behavior and financial decision making of individuals (Bakar & Yi, 2016; Merkle, 2017; Tetteh & Hayfron, 2017; Pikulina et al., 2017; Tetteh et al., 2024), and the few that focused on banks limited their attention to saving patterns (Avdeenko et al., 2019; Tetteh & Boachie, 2021)

Not enough attention has been given by scholars to the behavioral approach of credit officers to granting of loans. There is an empirical documentation, even though scanty, which explains that the crisis in the banking industry could be caused to an appreciable degree by psychological biases exhibited by credit officers during the decision-making stage (Lee & Lee, 2012; Liu et al., 2015). Some studies also suggest that psychological biases and human factors play crucial roles in the decision-making of bank credit officers (Skala, 2008; Storey, 2004; D'Angelo et al., 2018). It appears that a behavioral analysis of the lending process may be required to ascertain whether banks may have turned down excellent interest income prospects as a result of the influence of behavioral biases exhibited by bank credit officers in the process of evaluating loan applications. Similarly, some less viable projects may have been financed because of the same or similar biases.

Empirical studies have found that human beings are not entirely rational. In most cases they are influenced by emotions and behavioral prejudices that tend to influence their decisions, which result in undesirable results (Garling et al., 2009). The emphasis of the behavioral approach to the study of finance is primarily centered on the capital markets. The extant literature is not extensive when it comes to the study of credit decision-making in the banking sector. Without doubt, credit decision-making is a crucial area for research in the management of depository financial institutions since return on credit is the principal source of bank income (Tursoy, 2018).

An empirical study on the behavioral pattern of bank credit officers' decision-

making is therefore imperative since the viability of banks depends mainly on interest income from loans. This study, therefore, seeks to investigate whether these recurrent irrational credit appraisals, which often lead to huge loan losses, could also be influenced by psychological biases and human factors in the lending decision-making by bank credit officers and managers in Ghana.

This paper is structured as follows: the second section reviews pertinent literature in the subject area, followed by the methodology employed for this research. Results and discussion of findings are captured in the fourth section. The final segment covers the conclusion and implications of the study findings.

Literature Review

Theoretical Background

The Prospect Theory introduced by Kahneman & Tversky (1979) for the analysis of decision-making under risk is regarded as the path-breaking work in behavioral finance. Behavioral finance asserts that the individual often makes financial decisions based on emotions and cognitive biases, and therefore often acts against their own best interest. This assertion suggests that a second look must be taken at the rationality assumption that is held strongly by scholars of traditional to shape the behavior of participants in the financial market. Classical finance strives to propagate the principle of rationality through theories like the Portfolio Theory by Markowitz (1952), Capital Assets Pricing Model by Sharpe (1964), Arbitrage Pricing Theory of Ross (1976), and Efficiency Market Hypothesis by Fama (1970). However, proponents of the behavioral approach to finance contend that rather than acting rationally, financial market participants often succumb to psychological biases and emotions (Barberis & Thaler, 2003; Kaniel et al., 2012). Scholars have shown empirically that a significant association exists between irrational conduct and psychological biases such as overconfidence, loss aversion, and mental accounting (De Vries & Gerber, 2017; Bouteska & Regaieg, 2020).

The emphasis of the behavioral approach to the study of finance is primarily centered on the capital markets. The extant literature is not extensive when it comes to the study of credit decision-making in the banking sector. Without doubt, credit decision-making is a crucial area for research in the management of depository financial institutions since return on credit is the principal source of bank income (Tursoy, 2018). Over the years, emphasis has been placed on the quantitative approach to the management of bank credit. However, the persistent creation of bad loans has called for a more behavioral view on the credit decision process. William & Wong (1999) have stressed that trait and psychological biases lead managers to believe that they have a greater chance of influencing risk outcomes and that this belief leads them to choose riskier courses of action. These decisions are mostly not beneficial to organizations since they deviate from rationality and ultimately yield undesired results (De Vries et al, 2008). The effect of traits and psychological biases on credit decision making in banks has attracted a number of behavioral finance scholars, such as Apergys et al. (2012) and Bacha & Azouzi (2019).

Effect of behavioural biases and personal factors, and hypotheses development.

Over-confidence

Individuals that exhibit overconfidence bias overestimate their own abilities and competence (Camerer & Lovallo, 1999). The existing literature on the behavioural

approach to studying financial decision making appears to focus more on overconfidence (Baker et al., 2004). In the view of De Bondt and Thaler (1994), overconfidence is the most robust part of psychological judgement. Overconfidence can create mispricing and can lead individuals to ascribe good results to their own actions and unfavourable outcomes to actions from others or from external circumstances (Daniel et al., 1998).

A number of researchers have investigated the effect of overconfidence on credit decision-making and bank performance in general. Skala (2008) and Ho et al. (2016), for instance, report that cognitive bias in the form of overconfidence influences bank managers' decision-making. In their view, people tend to exhibit excessive confidence when feedback on information is delayed/or when a decision is withheld or inconclusive. Furthermore, Bacha & Azouzi (2019) assert that overconfident loan officers tend to over rely on their skills and intuitions which have the propensity to form their opinion about expected risks and losses. These findings have been reiterated by other scholars such as Kollin-Ondolos et al. (2022), who found that behavioural biases such as overconfidence and optimism have a positive influence on bank officers' credit decision-making.

Overconfidence, according to Black & Gallemore (2013), is a possible determinant of delayed recognition of loan losses. They established that overconfident bank managers have the tendency to incorporate low current and future non-performing loans in their provisions for loan loss than other bank managers.

Graham et al. (2013) emphasize that managers under the influence of overconfidence tend to possess an unrealistic, superior view of their abilities in relation to other managers and subordinates. This belief encourages them to place more emphasis on their own judgement in decision-making and overestimate their problem-solving capabilities, thereby engaging in overly complex transactions (Libby & Rennekamp, 2012; Cain & McKeon, 2016). According to McNamara & Bromiley (1997), credit officers tend to be influenced by behavioural biases since they are under constant pressure to increase loan volume to meet profit targets. In their study on intuition and emotion in bank loan officers' credit decisions, Lipshitz & Shulimovitz (2007) discovered that gut feelings were perceived to be key drivers in the assessment of the worthiness of loan applications than the use of relevant financial data. Some empirical studies have established that bank credit officers are influenced not only by behavioural factors but also rational factors as a result of the credit assessment process employed by banks (Kollin-Ondolos et al., 2022).

It is imperative to stress that scholars such as Keiber (2006) and Bouteska & Regaieg (2020) have indicated that overconfidence is not necessarily negative. It is not the level of overconfidence that defines optimality, but the nature of the information available. Overconfidence is favorable to the investor in the presence of positive information on an investment and, conversely, in the case of negative information.

Based on the review of literature on the influence of overconfidence in decision making, the study proposes the following hypothesis:

H1: Overconfidence has a significant effect on bank credit decision-making.

Risk aversion

Risk aversion is the preference for an outcome that is certain rather than gambling with a higher or equal expected value. There is the tendency for people to favor the avoidance of loss above the

acquisition of a gain (Kahneman & Tversky, 1979). Individual factors such as level of education, occupational standing, and age influence one's level of risk aversion.

Extant studies have found that risk aversion has a significant effect on the financial decisions of managers (Graham et al., 2013). With the use of a sample of 100.Tunisian bank branches, Azouzi & Bacha (2023) established that risk aversion is one of the paramount biases that influence credit risk assessment.

Risk aversion bias tends to cause people to overestimate risks, be doubtful about their estimations, and try to play it safe to reduce the probability of their loss. In the views of Bouteska & Regaieg (2020), the uncertainty regarding the importance of available information results in risk aversion. This situation makes the manager take a cautious stance, thereby deciding not to make any decision that has the probability of endangering his position or rank. This implies that risk-averse managers generally have the tendency to employ suitable tools that will help them accentuate professional stability.

Given the discussion on extant literature above, this study suggests the following hypothesis:

H2: Risk aversion has a significant influence on bank credit decision-making.

Appearance

According to some previous studies, attractive people are seen to be more efficient and more confident (Andreoni & Regan, 2008; Olivola & Totorov, 2010). This finding has been reiterated by Ravina (2012) in his study on personal characteristics of borrower in the United States. Beautiful and good-looking loan applicants even though default more often, are 11.7% more likely to get a loan, pay lower or similar interest rates as average looking applicant. In addition, using the logistic regression model, D'Angelo et al (2018) established a positive influence of appearance on credit decision making.

These findings indicate that loan applicants are likely to be influenced by borrowers with good appearance in their creditworthiness assessment.

Based on the reviewed literature, the author proposes the following hypothesis:

H3: Appearance has a significant effect on bank credit decision-making.

Level of Education

There is also a notion that bank officers' decisions regarding loan applications are significantly influenced by the educational level of applicants. This assumption can lead to the approval of credit for less qualified customers and denying the credit-worthy customers credit. Li et al. (2020), for instance, found that loan applicants with high level of education and income levels are more likely to be charged lower interest rates. Again, Zarook et al. (2013) found a significant positive link between level of education and access to credit. It is worth noting that other studies found no significant impact of customer education level on bank credit decision-making (Ogubazghi & Muturi, 2014; D'Angelo et al., 2018).

H4: Level of education of a loan applicant has a significant impact on bank credit decision-making.

Ethnicity

Ethnicity has become a variable of interest to some researchers in recent times in the area of credit decision-making. Analyzing credit score and other risk factors, Bayer et al. (2016) found that there is a clear cognitive bias towards ethnic differences in

the evaluation of loan applications by bank officers. Again, Martinez et al. (2020) found evidence of the influence of ethnicity on access to credit in Bolivia. His findings suggest the existence of discrimination in favour of non-ethnic women in Bolivia.

In a study on access to bank loans by small and medium enterprises in Trinidad and Tobago, Storey (2004) revealed a clear ethnic disparity in the decision on the issuance of loans. Similarly, Fafchamp (2000) identified ethnic bias in the attribution of supplier credit. However, some studies have found no significant impact of ethnicity on credit decision-making (D'Angelo et al., 2018)

In an effort to address the issue of ethnicity in bank credit decision-making, this study sets forth the following hypothesis:

H5: Ethnic affiliation has a significant influence on bank credit decision-making.

Status Quo

Status quo bias, which has been a topic of interest in recent times in psychology and other social sciences is a cognitive bias that involves people desiring that situations remain unchanged. Making decisions can be challenging (Iyengar & Lepper, 2001), and in some cases, decision makers may opt to do nothing (Baron & Ritov, 2004) or continue on their existing course of action because it is easier (Samuelson & Zeckhauser, 1988). Eidelman & Crandall (2009) in addition, found that status quo alternatives often require less mental effort. Their finding has been reiterated by Brown & Kagel (2009), who established that status quo prevails in situations when selecting high-performing stocks is relatively easy.

Researchers have discovered that the extent to which people are subjected to a status quo bias is proportional to the number of alternatives at their disposal (Kempf & Ruenzi, 2005). Individuals who are prone to the status quo bias often has the tendency to select sub-optimal alternatives simply because it has been selected before. Again, in their research on pension accounts of investors in the USA, Agnew et al. (2003) discovered inertia in asset allocation. In addition, Barber et al. (2009) discovered that investors display a proclivity to repurchase stocks they had previously purchased. Again, Agarwal et al. (2011) found a similar tendency to purchase previously acquired funds among hedge fund investors.

A significant number of studies have linked status quo bias exhibited by investors to some prevailing conditions. For instance, Li et al. (2009) found that status quo bias has an influence on investors who exhibit negative emotions more than those who exhibit positive emotions.

Based on the above review, this study posits the following hypothesis:

H6: Status quo bias has a significant effect on bank credit decision-making.

Comparison: Overconfidence and Risk Aversion by Gender

A significant number of studies have linked different degrees of overconfidence to gender issues. These empirical studies support the notion that men exhibit greater levels of confidence than women given the same level of expertise and circumstances (Eckel & Grossman, 2002; Croson & Gneezy, 2009). According to Palvia et al. (2015), female bank managers typically evaluate risks more cautiously. They asserted that differences in gender-based behavior are perceived to strongly influence information processing, conservatism, diligence, and risk aversion. Their findings have been reiterated by Ackah et al. (2019). Again, women typically exhibit lower levels of overconfidence than males, primarily as a result of the intense pressures they encounter from perceived gender

inequalities and work-life disparities (Harris et al., 2006; Palvia et al., 2015).

It is worth emphasizing that other studies, such as Eagly (2005) and Brescoll (2016) that focus on gender issues have established that, female managers respond differently to emotions than their male counterparts, and these differences may be due to gender stereotypes. In addition, extant studies suggest that gender differences in risk perception may stem from differences in education and business experiences (Ackah et al., 2019). Men are generally regarded as more risk-takers than women in making financial decisions and therefore have the tendency to take risky decisions. From the discussion above, this study proposes the following hypotheses:

H7: Male bank credit officers are influenced more by overconfidence bias than their female counterparts.

H8: Male bank credit officers are influenced more by loss aversion bias than their female counterparts.

Methodology

This study used a quantitative survey method to gather information from participants (bank credit managers and officers) to validate the research model, in line with some previous studies on the effects of behavioral biases (Graham et al., 2013; Harris et al., 2006). It aims at investigating the effect of behavioral biases and personal factors on bank credit decision-making. To achieve this, questionnaires were distributed to bank credit managers and officers in the Greater Accra Region of Ghana.

In the first section of the survey, respondents were asked to provide personal information, such as their age, gender, and level of education (Appendix 1). The second portion gathered information on the influence of psychological biases (six constructs) on credit officers' decision-making regarding bank loan applications (Appendix 2). On a Likert scale with a range of 1 (Strongly Disagree) to 5 (Strongly Agree), respondents were asked to rate their level of agreement (or disagreement) with the statements.

Sample Size

This study relied on the Cochran (1977) formula for determining sample size when the population is unknown, since the number of credit managers in the Greater Accra Region of Ghana was not known at the time of writing this research. A sample size of 384 was obtained. The formula is given as:

$n = z2pq/e2$

where

n = the sample size, z = is the Z-score = 1.96,

p = is the estimated proportion of the study variable = 50%,

q = 1 - p = 50%, e = is the margin of error =5%.

Data Gathering Approach

Data for the study was collected with the assistance of bank credit managers. Through a written request, the intention to conduct the survey was communicated to the management of one hundred and fifteen (115) bank branches. Copies of the questionnaire (virtual links) were sent online to these bank branches, who in turn sent the questionnaire to the emails of other bank branches and credit managers, as well as to WhatsApp group pages with memberships of bank credit managers. The survey captured at least two branches of each of the twenty-three banks operating in the Greater Accra Region.

Potential impact of sampling bias on the generalizability of the findings The convenience sampling method was used in

this study. Branch and credit managers selected by convenience sampling may make choices differently from the broader population of bank credit managers in Ghana. This bias is probably going to restrict how far the results of the study can be applied. The study covered credit managers and officers from at least eight branches of all banks that operate in the Greater Accra Region in order to reduce the effect of convenience sample bias. This approach allowed for a survey of credit managers with a range of backgrounds and experiences as well as viewpoints on credit decision-making (Creswell & Poth, 2017).

Convenience sampling may not provide the statistical rigor of probability sampling, but it may be a useful practical option for examining bank credit managers' behavioural biases and personal factors. Accessibility and the wider exploratory nature of this study serve as justifications for the approach.

Questionnaire Administration

The questionnaire was initially pre-tested to secure high internal consistency, assess the cogency of the questionnaire design, make the necessary corrections, and fill the gaps that were not previously identified. Four research assistants (teaching assistants) were trained to administer the modified questionnaires to bank credit managers in the region. A total of 431 questionnaires were administered to bank managers and credit officers. Four hundred and ten (410) questionnaires out of the completed questionnaires had complete and accurate responses, making them usable for the study. This figure, which is 26 respondents more than the calculated sample size, was considered suitable and therefore used as the sample of credit managers for the study. Data collection spanned 6th August, 2023 to 17th November, 2023.

Background information

From Appendix I, slightly more than half of the respondents (52%) were females, whereas the rest (48%) were males. This indicates that more than half of the respondents are female credit managers. Forty-eight percent (48.3%) of the respondents were under the age of 40, whereas the rest, which is almost 52 percent (51.7%), were above 40 years. Eight in ten (80%) respondents had university qualifications, whereas the remaining 20% were holders of professional qualifications. Table 1 also indicates that the majority of the correspondents, approximately 68%, have over eleven years or more experience in bank credit management. This suggests that the respondents are knowledgeable enough to respond to the questionnaire administered to them.

Variables employed for the study

With reference to previous research such as Bacha (2011) and Marques et al. (2012), this study used credit decision-making as the dependent variable. This procedure favours an assessment in which credit decision-making is influenced by the behavioural biases of the bank credit officers. This approach was captured in the survey, and the credit officers were asked to select the approach that best fits their decision-making. Examining this decision-making approach helps the bank to put in place an effective and more reliable tool that helps in qualitative assessment of loan applications and loan decision making, devoid of behavioural biases, than relying heavily on financial statements and business plans of borrowers, which provide little information on the assessment of credit risk of banks (Bacha & Azouzi, 2019).

The study employed behavioral biases of overconfidence, risk aversion, status quo, and other factors, namely ethnicity, level of

education, and appearance, as the independent variables. The biases of overconfidence and loss aversion have been found to be robust in driving decision-making in the extant literature (Libby & Rennekamp, 2012; Brescoll, 2016).

Data Analysis

In the analysis, partial least squares (PLS) were employed (SmartPLS Release: 3.2.7 (Ringle et al., 2015)). This technique is suitable since both sample size and data distribution have little impact on PLS (Hair et al., 2011). PLS technique of bootstrap t-values (5000 sub-samples) was used to test the significance of each path (Tortosa et al., 2009). The independent samples t-test was also employed to examine the differences in credit decision-making between male and female credit managers under the influence of overconfidence and risk aversion biases.

Results and Discussion

Common method bias tests: Harman's Single-Factor Test and Kock's Procedure

The results of Harman's single-factor test (Table 1) reveal that the first factor accounts for 44.7% of the total variance, while the remaining factors collectively explain 55.3%. As the proportion of variance explained by the first factor is below the commonly accepted 50% threshold, this suggests that common method bias (CMB) is unlikely to be a significant concern in the data. Although the first factor explains a relatively larger share of the variance compared to the others, its dominance is not substantial enough to indicate serious bias. This implies that while minor common method variance may exist, it does not appear to threaten the validity of the findings.

The scree plot (Figure 1) further supports this conclusion. It illustrates that the first factor contributes a markedly higher eigenvalue (3.31) relative to subsequent factors, after which the eigenvalues flatten out. Nonetheless, since the variance explained by the first factor is less than 50%, the results confirm that common method bias is not a major issue in this study.

Table 1: Harman's single-factor test

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.231	1.737	0.447	0.447
Factor2	1.494	0.702	0.299	0.746
Factor3	0.792	0.216	0.099	0.845
Factor4	0.576	0.115	0.068	0.913
Factor5	0.461	0.109	0.052	0.965
Factor6	0.352	0.258	0.022	0.987
Factor7	0.094	.	0.013	1.000

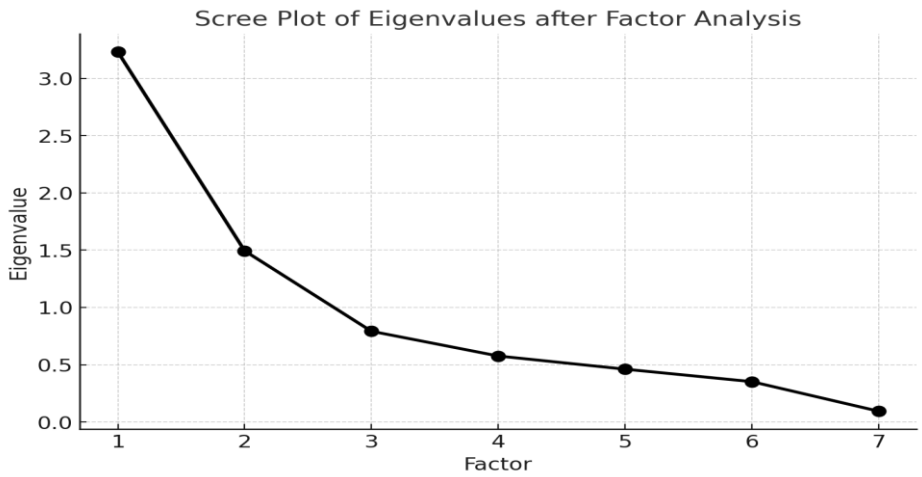

Figure 1: Scree plot - Common method bias test

Kock's full collinearity test was conducted as an additional diagnostic to assess the presence of common method bias (CMB) and to enhance the robustness of the study's findings. Results from the test (Table 2) indicate that the factor (status quo) recorded a variance inflation factor (VIF) slightly above the recommended threshold of 3.3, with a value of 3.31. All other constructs had VIFs below 3.3, ranging from 2.64 to 3.25. According to Kock's (2015) criterion, when the majority of constructs exhibit VIFs below 3.3, common method bias is not considered a major concern.

The marginally elevated VIF observed for one construct suggests only a minimal likelihood of shared method variance. On the whole, these results imply that common method bias can largely be ruled out, and any potential bias present is negligible and insufficient to undermine the validity of the findings. Furthermore, the average VIF value of 2.99 supports this conclusion, as it falls well within acceptable limits.

In addition, the results indicate no evidence of multicollinearity among the constructs. Following Hair et al. (2016), VIF values below 5.0 are deemed acceptable in multivariate analyses, further confirming that both multicollinearity and common method bias are not problematic in this study. Consequently, the measurement model can be considered robust and the results reliable.

Table 2: Kock's procedure (Full collinearity test)

Dependent factor	Mean VIF	Interpretation
Factor 1	3.31	Acceptable
Factor 2	3.25	Acceptable
Factor 3	3.15	Acceptable
Factor 4	2.64	Acceptable
Factor 5	2.67	Acceptable
Factor 6	3.13	Acceptable
Factor 7	2.79	Acceptable

Confirmatory Factor Analysis

Confirmatory factor analysis was used to evaluate the scales of the questionnaire by assessing their convergent and discriminant validity (Hair et al., 2016). The constructs, item loadings, and bootstrap t-values (5000 sub-samples) (Tortosa et al., 2009) are shown in Table 3. Based on the results, all seven constructs had Cronbach's alpha values over 0.70, indicating reliability. Additionally, as demonstrated in Table 4, each of the seven constructs had average variance extracted estimates and composite reliability estimates higher than 0.5 and 0.7 respectively, thus showing convergent validity (Hair et al., 2016).

Table 3: Principal Component Analysis

Factors	Measurement Items	Loadings	t-values
Overconfidence	OC1	0.751	11.328
	OC2	0.662	7.359
	OC3	0.643	7.209
	OC4	0.786	31.234
	OC5	0.749	17.064
Risk Aversion	RA1	0.929	78.128
	RA2	0.787	19.578
	RA3	0.945	87.332
Appearance	AP1	0.843	44.247
	AP2	0.949	83.210
	AP3	0.886	63.231
	AP4	0.896	71.132
Level of Education	LE1	0.932	73.213
	LE2	0.758	28.685
	LE3	0.881	65.281
	LE4	0.827	47.983
Ethnicity	ET1	0.917	86.493
	ET2	0.818	24.195
	ET3	0.937	88.230
Status Quo	SQ1	0.953	68.332
	SQ2	0.909	32.218
Bank Credit Decision–Making	CD1	0.721	17.627
	CD2	0.846	72.056
	CD3	0.802	28.323
	CD4	0.682	22.364
	CD5	0.908	88.321

Note: All bootstrap t-values are significant at 0.01 level of significance

Table 4: Summary Convergence and Discriminant Validity

Construct	Convergence Validity			Heterotrait-Monotrait Ratio (HTMT) Inference Criterion						
	A	**C.R**	**AVE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Overconfidence	0.812	0.843	0.519							
2 Risk Aversion	0.868	0.919	0.792	0.373						
3 Appearance	0.916	0.941	0.800	0.407	0.542					
4 Level of Educ.	0.875	0.913	0.726	0.286	0.599	0.925				
5 Ethnicity	0.872	0.921	0.796	0.395	0.092	0.518	0.569			
6 Status Quo	0.850	0.929	0.867	0.214	0.386	0.557	0.606	0.341		
7 Credit Decision	0.852	0.895	0.633	0.501	0.600	0.794	0.757	0.595	0.713	

Discriminant Validity Test

Discriminant validity was tested using the heterotrait-monotrait criterion suggested by Henseler et al. (2015). From Table 4, the heterotrait-monotrait of correlations (HTMT) inference shows that all the correlations were less than +1. This demonstrates that each measurement construct in the model is unique and different from the others. Discriminant validity has therefore been established.

Descriptive Statistics

From the application of the measurement model analysis, means and standard deviations were calculated as part of descriptive statistics, as shown in Table 5. The highest means were obtained for status quo and risk aversion (both approximately 4), showing that the managers agreed that status quo and risk aversion were important factors. Again, from the descriptive statistics results, ethnicity is reported to be more unstable with a standard deviation figure of 1.04, followed by appearance and level of education. Status quo was the least volatile among the seven factors employed for the study, with a standard deviation of 0.55.

Table 5: Descriptive Statistics

Constructs	*N*	Min	Max.	Mean	S.D
1 Overconfidence	410	1.000	4.400	3.47	0.63
2 Risk Aversion	410	2.000	4.750	3.60	0.64
3 Appearance	410	1.000	3.750	2.57	0.86
4 Level of Education	410	1.000	4.000	2.68	0.82
5 Ethnicity	410	1.000	4.000	2.76	1.04
6 Status Quo	410	2.330	4.330	3.65	0.55
7 Bank Credit Decision	410	1.860	4.140	3.31	0.65

Table 6: Predictive Accuracy (R^2), Predictive Relevance (Q^2) and Effect Sizes (f^2)

Constructs	R^2	Q^2	f^2(Bank Credit Decision)
1 Overconfidence	_	_	0.06(Small)
2 Risk Aversion			0.11(Small)
3 Appearance			0.03(Small)
4 Level of Education			0.00(None)
5 Ethnicity			0.12(Small)
6 Status Quo			0.21(Medium)
7 Bank Credit Decision	0.719	0.412	_

Structural Model Analysis

A structural model was created to investigate the possible effect of overconfidence, risk aversion, status quo, appearance, level of education and ethnic affiliation on bank credit decision making. An examination of the structural model's prediction accuracy (R^2) revealed a significant (72%) explanatory power for bank credit decision-making (Hair et al., 2016). Additionally, the model showed predictive relevance since the Q^2 – value of 0.412 is above 0 (Chin, 2010; Hair et al., 2016). Finally, the effect sizes (f^2) of independent variables indicates that status quo had a medium effect size on bank credit decision whereas overconfidence, risk aversion, appearance, and ethnicity all had small effect sizes on bank credit decision making. The level of education however, had no effect size on bank credit decision making as shown in Table 6.

Hypothesis Testing

The structural model showing the hypothesis test results is presented in Figure 2 and Table 7. The results support five of the six hypotheses. Specifically, there is a positive and significant association between status quo, overconfidence, risk aversion, appearance, and ethnic affiliation of customers, and bank credit decision-making of loan managers. Table 7 provides a further summary of the findings based on the proposed hypotheses. Comparatively, status quo has the most significant influence on bank credit decision-making, followed by ethnicity, risk-aversion appearance, overconfidence, and the level of education in descending order of importance.

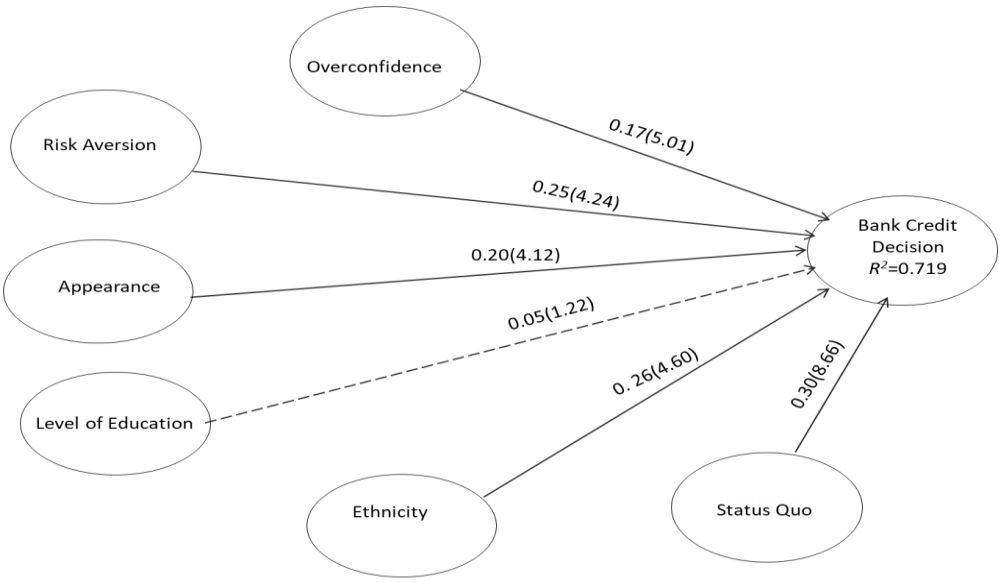

Figure 2: Structural Path: Determinants of bank credit decision-making

Table 7: Structural path results

Hypothesis	Structural path		Path coefficient	t-value (Boots-trap)	Hypothesis results
H1	Overconfidence ⟶	Bank Credit Decision	0.166***	5.005	Supported
H2	Risk Aversion ⟶	Bank Credit Decision	0.251***	4.239	Supported
H3	Appearance ⟶	Bank Credit Decision	0.198***	4.122	Supported
H4	Level of Educ ⟶	Bank Credit Decision	0.054	1.216	Not supported
H5	Ethnicity ⟶	Bank Credit Decision	0.259***	4.603	Supported
H6	Status Quo ⟶	Bank Credit Decision	0.296***	8.661	Supported

Note:***t-values are significant at $p<0.001$

Comparing Male Versus Female Credit Officers - Overconfidence and Risk Aversion

The independent samples t-test was performed, as shown in Table 8, to examine whether considerable differences exist between male credit officers and their female counterparts with regard to overconfidence and risk aversion.

There was no significant difference between males and females with regard to overconfidence ($p>0.05$), hypothesis H7 is therefore not supported, as Table 8 suggests. On the other hand, female credit officers were significantly more risk-averse when making bank credit decisions than

their male counterparts ($p<0.05$), thus lending support to hypothesis H8.

Table 8: Males versus Females-Independent samples t-test

Variable	Mean		t	Df	P
	Male	Female			
Overconfidence	3.48	3.46	0.26	408	0.795
Risk Aversion	3.65	3.83	-2.32	408	0.021*

Significant at $p<0.05$

Discussion

The study examined the influence of psychological biases and some human factors on bank credit officers' decisions regarding lending in the Greater Accra Region of Ghana. The results of this study proffer compelling evidence that behavioural biases and human factors significantly influence bank credit decision-making among credit managers and officers in Ghana's banking sector. The results from Harman's single-factor and Kock's full collinearity tests (Tables 1 and 2) confirm the absence of serious common method bias (Podsakoff et al., 2003; Kock, 2015). The variance presented by the first factor (status quo) (44.7%) falls below the 50% threshold, and all variance inflation factors (VIFs) are within acceptable limits, reinforcing the robustness of the model (Hair et al., 2016).

Each of the seven explanatory variables registered Cronbach's alphas greater than 0.70 (Table 3), which is the lower limit of acceptability recommended by Nunnally (1978) and Hair *et al.* (2016). These results indicate strong internal consistency of the construct measurements. In addition, a considerable explanatory power for the endogenous constructs (R^2 = 72%) is shown in the results (Table 6).

The results of the structural model reveal that five of the explanatory variables, namely overconfidence, risk aversion, status quo, ethnic affiliation, and appearance, have a significant influence on bank credit decisions (Figure 2 and Table 7). The study results generally confirmed five of the first six hypotheses of the study. The effect of level of education of loan applicants on bank credit decision-making was found not to be significant and therefore does not support H4. The non-significant role of **level of education** suggests that educational qualifications of customers alone may not serve as a significant influence on bank credit decision-making.

Among the three behavioural biases studied, status quo bias was found to have the most significant effect on credit decision making as compared to the influence of overconfidence and risk aversion (Figure 2, Tables 6 and 7). The dominance of the **status quo bias** suggests the tendency of credit officers to rely on prior experiences with familiar customers rather than continuously reassessing customers' creditworthiness for each new application. This finding supports the views of Samuelson & Zeckhauser (1988) and Polites & Karahanna (2012), who asserted that decision-makers often prefer the existing situation to avoid uncertainty and cognitive effort. Practically, this bias is likely to lead to the approval of loans for previously trusted clients despite possible

changes in their financial condition, potentially increasing default risk.
The significant effect of **risk aversion** suggests that credit officers exhibit cautious tendencies in granting loans, preferring safer clients with lower perceived risk. This aligns with empirical studies such as Azouzi & Bacha (2023). It is worth noting that such risk aversion might safeguard the institution against bad debts, but could also reduce credit flow to creditworthy borrowers

The significant impact of **appearance** and **ethnicity** on credit decisions may suggest the presence of implicit bias or heuristic-driven judgment. Credit officers may associate certain social cues, appearances, or ethnic identities with creditworthiness. Such subjective evaluations tend to reinforce social inequities and discrimination in access to credit (Berger et al., 2014).

Again, the study found that female credit officers are more risk-averse in their credit decision-making than their male counterparts (Table 8). This finding reinforces the findings of previous studies by Eagly (2005) and Brescoll (2016). It also buttresses the perception of gender differences well situated in the Ghanaian culture that men tend to be risk-takers than women. The study, however, could not establish any significant difference between the male and female credit officers with regard to the influence of overconfidence bias on credit decision making. This finding may suggest that, despite the behavioral bias of overconfidence having an impact on credit decision-making, the effect of this bias may be mitigated by the stringent procedures that credit officers must adhere to when making decisions.

The study contributes to the limited African-centred literature on behavioural biases in banking by offering empirical evidence from Ghana, where the cultural and institutional environment may magnify or moderate such biases. The findings of this study generally reiterate the findings of previous studies, such as Lipshitz & Shulimovitz (2007), and Mushinada & Veluri (2019). In essence, this study provides both theoretical and practical contributions. Theoretically, this study extends behavioural finance literature to institutional credit decision-making within an African context, reinforcing that cognitive biases persist even among trained professionals. Practically, it highlights the need for behavioural sensitivity and structured credit assessment tools to ensure equitable and rational financial decision-making

Conclusion, Implications, and Suggestions for Future Studies

The study emphasizes the propensity of behavioral biases to influence bank credit managers, depriving them of the thorough decision-making process imperative for optimal results. The findings show that psychological biases that manifest in bank credit managers' decision-making impair their capacity to make rational decisions, as emphasized by Lipshitz & Shulimovitz (2007). These results confirm that even professional credit officers are not entirely rational actors, as their judgments are shaped by psychological and social influences.

This study contributes to behavioral finance literature in the African context by extending the study of behavioral finance to bank credit decision-making and provides actionable insights for fostering efficiency and professionalism in credit decision-making.

The findings of this research accentuate areas that require critical attention from

bank management, credit managers, and policy makers for effective strategies to be employed to reduce the impact of psychological biases and to enhance bank credit decision-making.

The findings underscore the importance of incorporating behavioral awareness into banking practice and regulation. Knowledge of psychological biases and their impact on the conduct of bank credit officers have the propensity to improve bank credit decision-making. Adequate knowledge of the influence of psychological biases on bank credit decisions may be useful in reducing loan losses caused by sub-optimal decisions taken by credit managers. Given the risky nature of banking, it is essential that behavioral bias issues receive the highest premium possible. Bank credit officers are perceived to frequently employ shortcut approaches or heuristics in their decision-making, which usually yield poor outcomes. Banks should institutionalize continuous professional development programs that expose credit officers to behavioral finance concepts. Training modules should highlight how biases such as status quo, risk aversion, and representativeness affect loan judgments, helping officers identify and mitigate their influence.

Regular audits of loan approval decisions should be conducted to identify patterns of bias. This can guide targeted interventions where systemic tendencies such as favoritism toward repeat clients are identified.

Management of banks and Regulators, such as the Bank of Ghana, could develop behavioral audit guidelines for financial institutions to ensure credit decisions adhere to rationality, transparency, and inclusivity, thereby enhancing confidence in the banking system.

Financial institutions should design inclusive credit policies that explicitly address and monitor potential psychological biases. Transparency in credit evaluation criteria can enhance social trust, corporate profitability, and liquidity

The findings and the ensuing implications primarily apply to bank credit officers in the Greater Accra Region, which is the most densely populated and has the highest economic activity (PHCG, 2021). However, other bank credit officers can rely on the findings to help them improve their credit decision-making. The authors suggest that to ensure representativeness, subsequent studies of this nature should cover the whole country of Ghana.

Future studies should explore how cultural dimensions such as collectivism and power distance interact with behavioural biases in credit decision-making within African contexts. Replicating this study across other Ghanaian regions and sectors, such as microfinance and credit unions, would enhance generalizability and provide comparative insights. We suggest that subsequent research could adopt longitudinal or experimental approaches to establish causal relationships between specific biases and credit performance outcomes over time.

Data availability statement: Available on request.

Financial assistance disclosure: The authors received no financial assistance for this study.

Competing Statement: The authors declare no competing interests.

REFERENCES

Ackah, C.G., Aikins, E.R., Sarpong, T.T. & Asuman, D. (2019). Gender differences in attitudes toward risk: evidence from entrepreneurs in Ghana and Uganda, *Journal of Developmental Entrepreneurship*, 24(1), https://dx.doi.org/10.1142/S1084946719500055

Agarwal, V., Daniel, N.D. & Naik. N.Y. (2011). Do Hedge Funds Manage Their Reported Returns?, *The Review of Financial Studies*, 24(10), 3281 – 3320.

Agnew, J., Balduzzi, P. & Sundén, A. (2003). Portfolio Choice and Trading in a Large 401(k) Plan, *The American Economic Review*, 93(1), 193–215.

Andreoni, J. & Regan, P. (2008). Beauty, Gender and Stereotypes: Evidence from Laboratory Experiments, *Journal of Economic Psychology*, 29, 73-93.

Apergys, N., Artikis, P. & Mamatzakis, E. (2012). Is weather important for US banking? A study of bank loan inefficiency, *Journal of Applied Finance and Banking*, 2(3), 1-38.

Aydeenko, A., Bohne, A. & Frölic, M. (2019). Linking savings behavior, confidence and individual feedback: A field experiment in Ethiopia, *Journal of Economic Behavior and Organization,* 167(3), 122-151.

Azouzi, MA., & Bacha, S. (2023). Do Behavioral Biases Affect Credit Risk Assessment Methods?. *Iranian Journal of Management Studies*, 16 (2), 501-514.

Bacha, S. (2011). Impact of decision-making reasoning on credit risk management", *Journal of Business Studies*, 3(1), 246-259

Bacha, S. & Azouzi, M.A. (2019). How gender and emotions bias the credit decision-making in banking firms, *Journal of Behavioural and Experimental Finance,* 22(1), 183-191.

Baker M., Ruback, R. & Wurgler, J. (2004). *Behavioral Corporate Finance: A Survey*. NBER Working Paper No. 10863, National Bureau of Economic Research, Inc. Cambridge, MA, USA

Barber, B.M., Odean, T. & Zhu, N. (2009). Systematic noise, *Journal of Financial Markets*, 12(4), 547-569.

Barberis, N. & Thaler, R. (2003). A survey of behavioral finance, in G. Constantinides, M. Harris, and R. Stulz (Eds), *Handbook of the Economics of Finance*, North-Holland, Amsterdam.

Bakar, S. & Yi, A.N.C. (2016). The Impact of Psychological Factors on Investors' Decision Making in Malaysian Stock Market: A Case of Klang Valley and Pahang, *Procedia Economics and Finance*, 35, 319-328.

Baron, J. & Ritov, I. (2004). Omission bias, individual differences, and normality, *Organizational Behaviour and Human Decision Processes*, 94(2), 74-85.

Bayer, P., Ferreira, F. & Ross, S.L. (2016). *What Drives Racial and Ethnic Differences in High Cost Mortgages? The Role of High Risk Lenders*. National Bureau of Economic Research, No. 22004, 175-205.

Berger, A. N., Kick, T., Schaeck, K., 2014. Executive board composition and bank risk taking. *Journal of Corporate Finance*, 28(3), 48-65

Black, D. & Gallemore, J. (2013). *Bank executive overconfidence and delayed expected loss recognition*, Working Paper, Fuqua School of Business, Duke University. Durham, USA

Bouteska, A. & Regaieg, B. (2020). Loss aversion, overconfidence of investors and their impact on market performance evidence from the US stock markets, *Journal of Economics, Finance and Administrative Science*, 25(50), 451-478.

Brescoll V.L. (2016). Leading with their hearts? How gender stereotypes of emotion lead to biased evaluations of

female leaders, *The Leadership Quarterly*, 7(3), 415-428,

Brown, A.L. & Kagel, J.H. (2009). Behavior in a simplified stock market: The status quo bias, the disposition effect and the ostrich effect, *Annals of Finance*, 5(1), 1–14.

Cain, M.D. and McKeon, S.B. (2016). CEO Personal Risk-Taking and Corporate Policies, *The Journal of Financial and Quantitative Analysis*, 51(1), 139–164.

Chin, W.W. (2010). How to write up and report PLS analyses, in Esposito V.V., Chin, W., Henseler, J. and Wang, H. (Eds), *Handbook of Partial Least Squares, Springer Handbooks of Computational Statistics*, Springer, Berlin, Heidelberg, doi: 10.1007/978-3-540-32827-8_29.

Camerer, C. & Lovallo, D. (1999). Overconfidence and excess entry: an experimental approach, *American Economic Review*, 89(1), 306 -318.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*, 2nd ed., Mahwah:

Lawrence Erlbaum Associates.

Creswell, J.W., & Poth, C.N. (2017), *Qualitative inquiry and research design: choosing* among five approaches, 4th ed., SAGE Publications,

Croson, R. & Gneezy, U. (2009). Gender differences in preferences, *Journal of Economic Literature,* 47(2), 448 – 474.

D'Angelo, E., Mustilli, M. & Piccolo, R. (2018). Is the Lending Decision-Making Process Affected by Behavioral Biases? Evidence from Southern Italy, *Modern Economy*, 9(1), 160-173.

Daniel, K., Hirshleifer, D. & Subrahmanyam, A. (1998). Investor psychology and security market under- and overreactions, *Journal of Finance,* 53(6), 1839–1885.

De Bondt W.F.M. & Thaler, R.H. (1994). *Financial Decision-Making in Markets and Firms: A Behavioral Perspective*, NBER Working Papers 4777, National Bureau of Economic Research, Inc., Cambridge, MA, USA.

De Vries, E. & Gerber, C. (2017). The familiar versus the unfamiliar: Familiarity bias amongst individual investors, *Acta Commercii - Independent Research Journal in the Management Sciences,* 17(1), 1-10.

De Vries, M., Holland, R.W. & Wineman, C. (2008). Fitting decisions: Mood and intuitive versus deliberative decision strategies, *Cognition and Emotion,* 22(5), 931-943.

Eagly A.H. (2005). Achieving relational authenticity in leadership: does gender matter? *Leadership Quarterly,* 16(3), 459–474.

Eckel, C.C. & Grossman, P.J. (2002). Sex differences and statistical stereotyping in attitudes toward financial risk, *Evolution and Human Behavior*, 23 (4), 281-295.

Eidelman, S. & Crandall, C.S. (2009). A psychological advantage for the status quo. In J. T. Jost, A. C. Kay, and H. Thorisdottir (Eds.), *Social and psychological bases of ideology and system justification*, Oxford University Press, pp. 85–105.

Fama, E. (1970). Efficient capital markets: a review of theory and empirical work, *Journal of Finance*, 25(2), 383-417.

Fafchamp, M. (2000). Ethnicity and Credit in African Manufacturing, *Journal of Development Economics*, 61(1), 205-235.

Garling T., Kirchler, E., Lewis A. & van Raaij, F. (2009). Psychology, Financial Decision Making, and Financial Crises, *Psychological Science in the Public Interest,* 10(1), 1-47.

Graham, J.R., Harvey, C.R. & Puri. M. (2013). Managerial attitudes and corporate actions", *Journal of Financial Economics*, 109(1), 103–121.

Hair, J. F., Hult, G.T.M., Ringle, C.M. & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* 2nd ed., Thousand Oaks, CA: Sage.

Hair, J.F., Ringle, C.M & Sarstedt. M. (2011). PLS-SEM: Indeed a silver bullet, *Journal of Marketing Theory and Practice*, 19(2), 139–151.

Harris, C.R., Jenkins, M. & Glaser, D. (2006). Gender differences in risk assessment: Why do women take fewer risks than men?, *Judgment and Decision Making*, 1(1), 48-63.

Henseler, J., Ringle, C.M. & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modelling", *Journal of the Academy of Marketing Science*, 43(1), 115-135.

Ho, P-H., Huang, C-W., Lin, C-Y. & Yen, J-F. (2016). CEO overconfidence and financial crisis: Evidence from bank lending and leverage, *Journal of Financial Economics*. 120(1), 194-209.

Iyengar, S. & Lepper, M. (2001). When choice is demotivating: Can one desire too much of a good thing?, *Journal of Personality and Social Psychology*, 79(6), 995-1006.

Kahneman, D., & Tversky. A. (1979). Prospect Theory: An Analysis of Decision under Risk, *Econometrica*, 47(2), 263-292.

Kaniel, R., Liu, S.G., Saar, & Titman, S. (2012). Individual Investor Trading and Return Patterns around Earnings Announcements, *The Journal of Finance,* 67(2), 639-680.

Keiber, K. (2006). *Managerial Compensation Contracts and Overconfidence*, *EFMA Behavioral Finance* Symposium Paper, http://efmaefm.org/0EFMSYMPOSIUM/durham-2006/sympopart.shtml.

Kempf, A. & Ruenzi, S. (2005). *Status Quo Bias and the Number of Alternatives -An Empirical Illustration from the Mutual Fund Industry*, CFR-Working Paper No. 05-07. Centre for Financial Research (CFR) Cologne, Gemany.

Kock, N. (2015). *Common method bias in PLS-SEM: A full collinearity assessment approach. International Journal of e-Collaboration, 11*(4), 1–10..

Kollin-Ondolos, N., Tuyon, J., Mohammed, R.U., & Ahmad, Z. (2022), Bounded rationality in bank credit decisions for SME lending: Evidence from bankers in Malaysia, *Journal of Risk Management in Financial Institutions*, 15(4), pp. 362-390.

Lee, E. & Lee. B. (2012). Herding behaviour in online P2P lending: An empirical investigation, *Electronic Commerce Research and Applications*, 11(5), 495-503.

Li, J., Ren, G., Ma, Q. & Liu, L. (2009). An experimental study on investors' status quo bias and its determinants, *Frontiers of Business Research in China*, 3(4), 543-565.

Li, X., Deng, Y. & Li, S. (2020). Gender differences in self-risk evaluation: evidence from the Renrendai online lending platform, *Journal of Applied Economics*, 23(1), 485-496.

Libby, R. & Rennekamp, K. (2012). Self-Serving Attribution Bias, Overconfidence, and the issuance of Management Forecasts, *Journal of Accounting Research*, 53(4), 913-913.

Lipshitz R. & Shulimovitz, N. (2007). Intuition and Emotion in Bank Loan Officers' Credit Decisions, *Journal of Cognitive Engineering and Decision Making*, 1(2), 212-233.

Liu, D., Brass, D., Lu, Y. & Chen, D. (2015). Friendships in online peer-to-peer lending: Pipes, prisms, and relational herding, *MIS Quarterly,* 39(3), 729-742.

Markowitz, H. (1952). Portfolio Selection, *The Journal of Finance*, 7(1), 77-91.

Marques, A.I., Garcia, V., & Sanchez, J.S. (2012). Two-level classifier ensembles for credit risk assessment, *Expert Systems with Applications*, 39(12), 10916-10922.

Martinez, R.G., Aguilera-Lizarazu G, Rojas-Hosse A. & Aranda B.P. (2020). The interaction effect of gender and ethnicity in loan approval: A Bayesian estimation with data from a laboratory field experiment, *Review of Development Economics*, 24(3), 726–749.

McNamara, G. & Bromiley, P. (1997). Decision Making in an Organizational Setting: Cognitive and Organizational Influences on Risk Assessment in Commercial Lending, *The Academy of*

Management Journal, 40(5),1063 – 1088.

Merkle, C. (2017). Financial overconfidence over time: Foresight, hindsight, and insight of investors, *Journal of Banking & Finance*, 84(3), 68-87.

Mushinada, V.N.C. & Veluri, V.S.S. (2019). Elucidating investor's rationality and behavioural biases in Indian stock market, *Review of Behavioral Finance*, 11(2), 201–219.

Nunnally, J.C. (1978). *Psychometric theory*, 2nd ed, McGraw-Hill, New York, NY.

Ogubazghi, S.K. & Muturi, W. (2014). The Effect of Age and Educational Level of Owner/Managers on SMMEs' Access to Bank Loan in Eritrea: Evidence from Asmara City, *American Journal of Industrial and Business Management*, 4(11), 632-643.

Olivola, C.Y. & Todorov, A. (2010). Fooled by first impressions? Re-examining the diagnostic value of appearance-based inferences, *Journal of Experimental Social Psychology*, 46(2), 315-324.

Palvia, A.A., Vähämaa, E. & Vähämaa, S. (2015). Are Female CEOs and Chairwomen More Conservative and Risk Averse? Evidence from the Banking Industry during the Financial Crisis, *Journal of Business Ethics*, 131(3), 577-594.

Pikulina, E., Renneboog, L. & Tobler, P. (2017). Overconfidence and investment: An experimental approach, *Journal of Corporate Finance*, 43(3), 175-192.

PHCG (2021). Population and Housing Census of Ghana, 2021 https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/2021%20PHC%20General%20Report%20Vol%203A_Population%20of%20Regions%20and%20Districts_181121.pdf (Accessed on 24/05/2023)

Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903.

Polites, G.L. & Karahanna, E. (2012). Shackled to the Status Quo: The Inhibiting Effects of Incumbent System Habit, Switching Costs, and Inertia on New System Acceptance. *MIS Quarterly*, 36(1), 21-42

Ravina, E. (2012). Love and Loans: The effect of Beauty and Personal Characteristics in Credit Markets, Working Paper, Columbia Business School, New York.

Ringle, C., Da Silva, D. & Bido, D. (2015). Structural equation modeling with the SmartPLS, *Brazilian Journal of Marketing*, 13(2), pp. 56-73.

Ross, S.A. (1976). The Arbitrage Theory of Capital Asset Pricing, *Journal of Economic Theory*, 13(3), 341 – 360.

Samuelson W. & Zeckhauser, R. (1988). Status quo bias in decision making", *Journal of Risk and Uncertainty*, 1, 7-59.

Sharpe, W.F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk, *The Journal of Finance*, 19(3), pp. 425-442.

Skala, D. (2008). Overconfidence in Psychology and Finance – an Interdisciplinary Literature Review, *Bank and Credit,* 39(4), pp. 33-50.

Storey, D. (2004). Racial and Gender Discrimination in the Micro Firms Credit Market? Evidence from Trinidad and Tobago, *Small Business Economics*, 23(5), 401-422.

Tetteh, J.E. & Boachie, C. (2021). Are the saving decision patterns of bank customers also clouded by psychological biases? Evidence from Ghana, *Review of Behavioral Finance*, 15(1), 1-18.

Tetteh, J.E. & Hayfron, A.E. (2017). Investor Behavioural Pattern: An Empirical Study of the Ghana Stock Market. *Journal of Applied Business and Economics,* 19(8), 69-78.

Tetteh, J.E., Adu-Darko, E, & Agyirey-Kwakye, B. (2024). Influence of Overconfidence and Loss Aversion on Financial Decision-Making of Teachers in Ghana: The moderating role of Financial

Literacy, African *Review of Economics and Finance*, 16(2), 254-279.

Tortosa, V., Moliner, M.A. & Sánchez, J. (2009). Internal market orientation and its influence on organizational performance, *European Journal of Marketing*, 43(11/12), 1435-1456.

Tursoy, T. (2018). Risk management process in banking industry, MPRA Paper No.86424, Munchen Personal Repec Archive, Munchen https://mpra.ub.uni-muenchen.de/86427/10.13140/RG.2.2.14737.74085.

Williams, S. & Wong. Y.W. (1999). The effects of mood on managerial risk perceptions: Exploring affect and the dimensions of risk, *Journal of Social Psychology,* 139(3), 268-287.

Zarook, T., Rahman, M.M. & Khanam, R. (2013). Management Skills and Accessing to Finance: Evidence from Libya's SMEs, *International Journal of Business and Social Science*, 4(7), 106-115.

Appendix 1: Demographic Information of Respondents

Variable	Frequency	Percent
Gender		
Male	197	48
Female	213	52
Age group		
30 years and below	52	12.7
31-40 years	146	35.6
41-50 years	138	33.7
51-60 years	74	18
Educational Level		
University Qualification (Diploma/First Degree/ Postgrad Degree)	328	80
Professional Qualification (ICA, CIB, CIM)	82	20
Discipline		
Banking	164	40
Accounting	98	24
Economics	102	25
Other (Law, Business Mgt, Sociology etc)	46	11
Profession/Position		
Bank Credit Officer	208	50.7
Bank Credit Manager	126	30.7
Bank Manager	76	18.5
Years of Bank Credit Management Experience		
6 - 10 years	132	32.2
11 – 20 years	121	29.5
21 years and above	157	38.3
Level of ICT Knowledge		
I possess some level of computer skills	30	7.3
I possess good computer skills	260	63.4
I possess excellent computer skills	120	29.3
Total	410	100.0

Appendix 2: Scales of variables in the model.

Factors	Construct	Item Description
Overconfidence	OC1	I have an outstanding experience in granting of loans.
	OC2	I can easily detect loan application that will go wrong
	OC3	I have confidence on my knowledge and skills in deciding on loan applications.
	OC4	I hardly seek opinions from fellow credit officers (to avoid conflicting opinions).
	OC5	I use a single or few sources of information that I have confidence in when deciding on loan applications.
Risk Aversion	RA1	I periodically make enquiries from credit management experts in my loan issuance decisions.
	RA2	I take a considerable period of time within to take decisions on loan applications.
	RA3	If I receive new information on a loan applicant I wait for a while before taking a decision.
Appearance	AP1	Applicants with good appearance are perceived to be more confident and proactive
	AP2	I perceive applicants with good appearance to be credit worthy.
	AP3	Appearance of applicants to a larger extent influence my decision on loan a applications.
	AP4	Applicants with good appearance are less likely to default in loan payment
Level of Education	LE1	I perceive educated loan applicants to be credit worthy than the less educated ones
	LE2	Level of education of loan applicants is one of the factors that determine my decision on loan applications.
	LE3	Applicants with high education are knowledgeable and are less likely to default in loan payment
	LE4	Applicants with high education are perceived to be more confident and productive
Ethnicity	ET1	I am likely to favor loan applicants who are members of my relations, friends etc.
	ET2	Members of my ethnic groups are less likely to be denied loan if information available is not adequate.
	ET3	I feel bad when I am not able to approve loan application to members of my ethnic group and affiliations.
Status Quo	SQ1	I continue to grant credit to customers because they have been faithful in repayment of loans.
	SQ2	Some particular customers have received loans from my bank since I became credit officer and I will continue to meet their working capital needs.
Bank Credit Decision	CD1	My loan decisions are based on the long-term relationship of customer with the bank.

	CD2	I am likely to grant credit to a customer might be less credit worthy as a result of non-availability of adequate information.
	CD3	My loan decisions are based primarily on current publicly available information about the customer in my loan decision making.
	CD4	I make decisions based on my independent assessment because I have outstanding experience, knowledge and skills.
	CD5	My loan decision making is at times influenced by my emotions and intuitions