

Article

The Perceived Relationship between Risk Culture and Operational Risk Management Practices of Ghanaian Banks

Gerhard Philip Maree Grebe *  and Johan Marx

Department of Finance, Risk Management and Banking, University of South Africa, 1 Preller Street, New Muckleneuk, Pretoria 0002, South Africa; marxj@unisa.ac.za

* Correspondence: grebegpm@unisa.ac.za

Abstract: The Bank of Ghana (BoG) joined the Basel Consultative Group (BCG) of the Basel Committee on Banking Supervision (BCBS) in 2021 and is proceeding with the implementation of the Basel III international regulatory framework for Ghanaian banks. The purpose of this study was to assess the perceived relationship between risk culture and aspects of operational risk management among Ghanaian banks. This study followed a positivist paradigm and made use of a survey among the risk management staff members of Ghanaian banks. The data were analysed using both descriptive and inferential statistics, such as the Mann–Whitney U test and a multiple regression model. This study found significant perceived relationships (at the 5% level of significance) between risk culture and monitoring and reporting procedures, the three lines of defence (3LOD), compliance, internal auditing, disclosure of operational risk information, and guidance from the banking regulator. The respondents reported the following challenges with their banks' risk culture (in order of priority): training and development, communication, reporting and disclosure, roles and responsibilities, performance appraisal, and technological and environmental barriers. Recommendations for addressing these challenges are provided.

Keywords: risk culture; operational risk management; banks; Ghana

JEL Classification: M14; N27; G21



Citation: Grebe, Gerhard Philip Maree, and Johan Marx. 2023. The Perceived Relationship between Risk Culture and Operational Risk Management Practices of Ghanaian Banks. *Journal of Risk and Financial Management* 16: 407. <https://doi.org/10.3390/jrfm16090407>

Academic Editor: Thanasis Stengos

Received: 22 June 2023

Revised: 31 August 2023

Accepted: 4 September 2023

Published: 12 September 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The Basel Committee on Banking Supervision (BCBS) of the Bank for International Settlements (BIS) released the Basel III international regulatory framework for banks in 2010, which had been primarily designed for internationally active banking institutions, instead of smaller or less sophisticated banks (BIS 2014). The Basel III regulatory framework requires banks to manage their Operational, Market, and Credit Risks by improving their liquidity base and enhancing the risk management practices of banking institutions. This requirement aims to enhance the financial stability and sustainability of banks under the supervision of central banks that are members of the BCBS (Gomes and Khan 2011).

After Ghana gained independence from Britain on 6 March 1957, Ghana's central bank, the Bank of Ghana (BoG), was established with the directive to protect depositors' interests and ensure the Ghanaian financial system's safety, soundness, and stability (BoG 2018, 2023; Dwamena and Yusoff 2022). Despite the BoG's international orientation and receptiveness to international banking standards, the pre-2001 Ghanaian banks were more domestically orientated, with little appetite to adopt the Basel regulatory framework (Jones 2022). Only when the New Patriotic Party (NPP) came into power between 2001 and 2008 were sustained efforts made by politicians and senior banking officials in the BoG to implement the Basel regulatory framework by creating a financial service hub which consisted of an offshore banking facility that served as the foundation of their development strategy (Jones 2022).

However, from 2009 to 2016, the National Democratic Congress (NDC) political party was in office, and they championed a nationalist tradition that did not include prioritising the financial service hub. Most senior banking officials who advocated for implementing the Basel regulatory framework left the BoG, depriving it of the drive to continue with the implementation process (Jones 2022). Implementation of the Basel regulatory framework resumed only after the NNP political party regained power at the end of 2016—with the objective of positioning Ghana as an international financial services centre (BoG 2018, 2021; Jones 2022; Adjei 2018). Although the Ghanaian banking sector has indicated significant growth since 2018, measured in terms of the total assets under management, the money supply-to-GDP (gross domestic product) ratio, the deposit-to-GDP ratio, and the bank credit-to-GDP ratio, the sector is still regarded as unstable, inefficient, and inexperienced (BoG 2020; Dwamena and Yusoff 2022; Torku and Laryea 2021). According to Amponsah-Mensah (2021), the BoG should specifically focus on implementing the supervisory and regulatory requirements of the Basel III international regulatory framework to ensure the safety, soundness, and stability of Ghanaian banks. To sustain financial performance, Ghanaian banks must keep abreast of the regulatory developments in the global banking industry as directed by the Basel III regulatory framework, with a specific focus on operational risk management (Amponsah-Mensah 2021).

Furthermore, Arhenful et al. (2019) stated that the ineffective management of operational risk has a negative impact on the financial performance and sustainability of commercial banks operating in Ghana. This was also confirmed by Gadzo et al. (2019), who stated that the risk culture, risk governance, and operational risk management practices of Ghanaian banks are not effective and need to be improved as they directly impact the financial performance and competitiveness of Ghanaian banks (Ozili 2019). Amenu-Tekaa (2022) concurred with the findings of Gadzo et al. (2019) and stated that complying with the requirements of the Basel regulatory framework will assist in building a resilient Ghanaian banking sector and position Ghanaian banks to meet the various banking and capital investment needs of the country's economy.

In 2021, the BoG announced that it had joined the Basel Consultative Group (BCG) of the BCBS with a view to facilitating dialogue and cooperation in relation to banking supervision, supervisory standards, and best practices (BoG 2021a). The Ghanaian banking sector has experienced a sharp increase in the digitisation of its banking services since the onset of the COVID-19 pandemic, and this has been accompanied by an increase in cyberattacks, mobile money, and ATM fraud in Ghana (Addison 2021). The BoG has nevertheless stepped up its leadership role in providing guidance to Ghanaian banks by publishing a Risk Management Directive in November 2021 (BoG 2021b). This directive requires Ghanaian banks to adopt an appropriate risk culture that promotes the implementation of the risk management requirements prescribed by the Basel III international regulatory framework (BoG 2021b).

However, the BoG and Ghanaian banks could benefit from scientific evidence of the perceptions of Ghanaian banks' risk managers regarding the envisaged implementation of Basel III. To date, no research has been carried out on the role of risk culture in promoting the effective management of operational risk in Ghanaian banks.

Ghana is a developing country located in the West African sub-region, characterised by economic underperformance, weak legal and regulatory frameworks, illiquid stock markets, and frequent market interventions by government agencies (Tsamenyi et al. 2007). According to Asomah (2019) and Transparency International (2020), successive Ghanaian governments have claimed to be fighting corruption, but little success has been achieved so far. This points to a lack of accountability, transparency, and integrity in the environment in which Ghanaian banks operate, and this influences their risk culture.

The current research contributes to the implementation of the risk management directive of the BoG, and to the theory of risk culture and research in the area. The main argument of this research is that, for operational risk management to succeed, an appropriate risk culture in each of the banks involved is required. The purpose of this study

was, therefore, to investigate the risk culture perceptions of Ghanaian banking personnel and to provide recommendations to enhance the risk culture among Ghanaian banks to promote effective operational risk management practices. Any challenges faced regarding risk culture need to be addressed in order to enhance the successful implementation of operational risk management and ultimately ensure the financial stability and sustainability of banks in Ghana.

This research followed a positivist paradigm and utilised a survey to collect the data from risk management employees of Ghanaian banks to assess the role of risk culture in the enhancement of their operational risk management practices. This study used both descriptive and inferential statistics to analyse the collected data.

This article is structured as follows. Section 2 provides a review of the relevant literature, while Section 3 describes the methodology of the research. In Section 4, the analyses of the data and the empirical results are presented. Finally, Section 5 provides a summary, and Section 6 provides the conclusions of this study.

2. Literature Review

Since the financial crisis of 2007–2008, interest in governance, risk, and compliance (GRC), as well as the concept of risk culture, has grown significantly. Most banks now strive to re-align risk management and governance processes to a new moral narrative to achieve organisational success and sustainability (Deloitte 2012; Power et al. 2013). Research suggests that the arguments on risk culture in financial institutions are indicative of the aspiration to ensure that risk management becomes a more prominent component of organisational decision-making and governance processes (BIS 2021; Deloitte 2012; Power et al. 2013).

The BCBS has highlighted that robust risk culture is essential for a bank to achieve sound corporate governance and risk management practices (BIS 2011, 2021). A corporate risk culture, which supports professional and responsible behaviour and provides the appropriate norms and incentives, lays the necessary foundation for exercising good governance. In this regard, the board of directors should lead by establishing professional standards and corporate values that promote integrity for itself, for senior management, and for all other bank employees (BIS 2011, 2021).

Risk culture is fundamental to effective risk governance, organisational success, and value creation. The Committee of Sponsoring Organisations (COSO) updated its enterprise risk management framework in 2019 and acknowledged the vital role risk culture plays in enterprise-wide risk management (ERM). The board of directors is responsible for embedding risk culture into discussions concerning strategy and risk management. Implementing the 3LOD model to manage operational risk will not deliver optimal results if it is not supported by an organisational culture that enables and promotes effective risk management (Global Institute of Internal Auditors 2019).

The board of directors and senior management should provide the necessary leadership to build and maintain a strong risk culture for operational risk management. Banks with a robust risk culture and solid ethical business practices are unlikely to experience potentially damaging operational risk events, and they are also equipped to effectively deal with operational risk events when they do occur (BIS 2011; Pepi 2019; Stanciu 2010).

To embed an effective risk culture in a bank's operations, a bank should aim to achieve risk-intelligent culture status. This implies that every employee understands the way the bank approaches risks, takes personal responsibility to manage the risks related to their daily activities, and encourages fellow employees to follow their proactive example. Bank management systems and behavioural norms should encourage employees to make accurate risk-related decisions and exhibit appropriate risk awareness. To accomplish these objectives, the board of directors and senior management are responsible for setting the right tone and cultivating an enterprise-wide awareness of risks at all levels within the bank. Robust risk culture can give a bank a competitive advantage that would be difficult for competitors to emulate. A risk culture binds together crucial elements in a bank, such as

risk governance, risk management, and compliance, and ultimately makes a bank cohesive and resilient to internal and external disruptions (International Finance Corporation 2015; Institute of International Finance 2009; IRM 2012a; Sants 2010).

To enhance the risk culture of a bank and its interrelationship with risk governance, the bank should pay careful attention to its risk culture framework, as acknowledged by both practitioners and researchers. The views of risk practitioners are discussed first, followed by those of researchers.

Risk practitioners, such as Deloitte (2012) and the IRM (2012a), have contributed to the field of risk culture. According to Deloitte (2012), a risk culture comprises four risk culture drivers, namely, risk competency, organisation, relationships, and motivation. Although the risk culture framework of Deloitte highlights four significant practical considerations of risk culture, the IRM considers four dimensions and eight aspects of risk culture, including the so-called ‘soft issues’ (such as people, communication, and learning and development) and the ‘hard issues’ of risk culture (such as governance and the risk management framework). In their research, the IRM (2012a) invited 36 risk practitioners to formulate their guidelines for enhancing risk culture and summarised them in their risk culture model, indicated in Table 1 below.

Table 1. The IRM risk culture model.

Tone at the top	Risk leadership	Informed risk decisions	Decisions
	Dealing with bad news	Reward	
Governance	Accountability	Risk resources	Competency
	Transparency	Risk skills	

Source: IRM (2012a).

As indicated in Table 1, the IRM (2012a) identified four dimensions of risk culture, namely, the tone at the top, governance, decisions, and competency. Each of these has its own aspects requiring close attention. The tone at the top requires risk leadership by providing a clear vision and common approach to risk understood at all levels in the organisation. The leadership should lead by example and have an open mind to evaluate any criticism should strategic proposals be criticised, or when bad news surfaces; in other words, they need to practise what they preach. Governance requires transparency. Organisational structures need to support effective risk management by being accountable and by having access to the board of directors, authority, and management reporting capabilities, such as the prioritisation and escalation of decisions. The decision dimension emphasises the development of a set of policies and standards that provide confidence to individuals on the way to operate and manage risks. This includes the fact that objective setting should be aligned to risk management responsibilities and have a clear link to an individual’s performance and remuneration. The competency dimension requires that employees undergo the necessary learning and development to enable them to identify and assess risks and know what, when, and how rapidly to escalate risk matters. The IRM acknowledges that risk culture remains a developing area, and it anticipates more models, tools, and research in the future.

Several researchers have contributed to the field of risk culture, as reported by Kunz and Heitz (2021). These researchers performed a systematic literature review and developed a comprehensive model of risk culture within the context of the external environment and bank management control systems. The risk culture model of Kunz and Heitz (2021) is depicted in Figure 1 below.

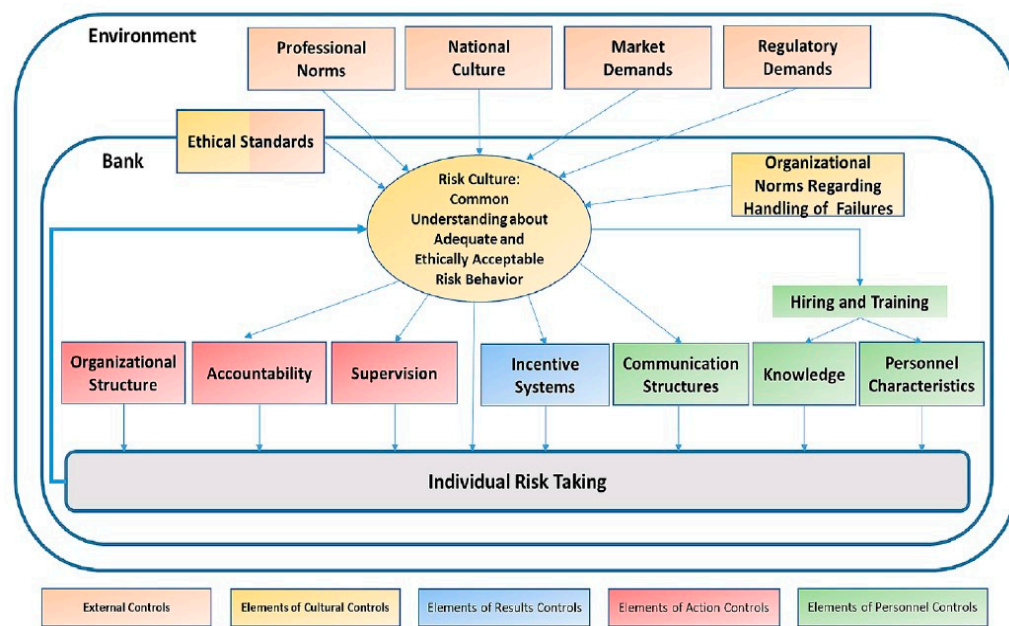


Figure 1. Risk culture and management control systems. Source: Kunz and Heitz (2021, p. 484).

As indicated in Figure 1, six factors are related to risk culture, namely, professional norms (see Cohn et al. 2017), national culture (see Illiashenko and Laidroo 2020; Kanagaretnam et al. 2014), market demands, regulatory demands (see Lim et al. 2017), ethical standards (see Awrey et al. 2013; Fichter 2018), and organisational norms regarding the handling of failure (see Gendron et al. 2016).

These factors affect the development of risk culture, in other words, the common understanding of adequate and ethically acceptable risk-taking (Drennan 2004). Risk culture in turn influences personnel controls, including hiring and training (see Drennan 2004), communication (see Dellaportas et al. 2007; Muñiz et al. 2020), knowledge (see Holland 2010), and personnel characteristics such as those of CEOs (see Buyl et al. 2019), and the flexibility of staff, which could entrench dysfunctional risk cultures in cases where there is an unwillingness to change (see Gendron et al. 2016).

Incentive systems influence individual risk-taking, especially variable and stock-based incentives for decision-makers in top management (Chen et al. 2006) as well as severance contracts (Brown et al. 2015). Individual risk-taking is also influenced by the organisational structure (Roy 2008), individual accountability (Cordery 2007), and a lack of supervision (Cordery 2007; Drummond 2002).

The limitations of the study by Kunz and Heitz (2021) were that they searched for English articles only and that they included only knowledge in their model instead of considering the broader concept of competencies. They concluded that further research is needed regarding the factors indicated in their model to gain deeper insight and measure the causal relationships. However, Marx and de Swardt (2019) determined that there is a relationship between competencies and successful risk management, and that such competencies comprise knowledge, skills, attitudes, values, and attributes, such as experience. The values required for successful risk management require upholding principles that ensure moral conduct, such as integrity, ethical conduct, respect, and accountability, which will influence risk culture positively. Njogu (2017) observed that, when employees have worked in an industry for many years, they have gained significant experience and knowledge about the culture, products, and services of their organisation. These employees have experienced many changes within their working environment and, as a result, have a good understanding of processes that work effectively in the organisation, compared to those with less experience. All the above-mentioned researchers nevertheless acknowledged that further research is required.

According to the BCBS, risk management should be embedded into a bank's culture (BIS 2011, 2021). Risk management should be a critical focus area of the chief executive officer (CEO), the chief risk officer (CRO), the chief operating officer (COO), senior management, and all business line managers. These officials should communicate risk management information in an appropriate manner to all staff members to make accurate strategic and day-to-day business decisions (BIS 2020).

The BoG directive (BoG 2021b) requires Ghanaian banks to adopt an adequate risk culture. Corporate firms in Ghana are increasingly also being induced by their Institute of Directors (IoD-GH), the Private Enterprise Foundation, and the State Enterprise Commission to enhance effective risk-culture and corporate-governance practices to compete effectively and efficiently internationally (Agyemang and Castellini 2015). The IoD-GH recommends that legal and regulatory frameworks should be reinforced and that governance roles and responsibilities should be clarified. Other measures recommended include strengthening enforcement mechanisms by providing training, logistics, and equipment, as well as an independent judiciary and more active reporting on issues of corporate governance by the media (Agyemang and Castellini 2015).

The research goal of the current study was to assess the perceived relationship between risk culture and monitoring and reporting procedures of Ghanaian banks, their three lines of defence, compliance, internal auditing, disclosure of operational risk information, and guidance from the Ghanaian banking regulator on their operational risk management practices. This study also aimed to determine the challenges that participating Ghanaian bank employees experience with the implementation of a risk culture at their respective banks.

3. Methods

This study investigated the relationship between the risk culture of Ghanaian banks and their operational risk management practices. This study aimed to make generalisations about risk culture and operational risk within the Ghanaian banking sector. The positivistic research paradigm was deemed most appropriate, based on the works of Saunders et al. (2012), Mutezo (2015), and Schindler (2019).

A non-experimental descriptive research design was selected to address the research questions and research objectives (see Creswell 2014; Saunders et al. 2012). A non-experimental research design describes the phenomenon and examines relationships between different phenomena without any direct manipulation of conditions that are experienced during the research process (Creswell 2014; Schindler 2019).

A quantitative research method was implemented, as this research approach involves collecting primary data from a representative sample with the objective of generalising the results to the target population. A further reason for implementing this research method is that it stems from empirical generalisations, which can then be utilised to determine future outcomes or be implemented to solve a specific research problem (Mutezo 2015; Schindler 2019; Tustin et al. 2010). As Newby (2010) explains, the ultimate objective of quantitative research is to produce theory, truths about behaviour, and relationships applicable in various circumstances.

From the literature review, it was evident that specific individuals equipped with specialised knowledge of operational risk management had to be targeted within the Ghanaian banking sector.

Purposive sampling was, therefore, best suited to address the research problem of this study. To ensure a homogeneous sample, respondents were carefully selected based on their relevant background and knowledge of the subject area. The sample included individuals specialising in operational risk management, risk governance and compliance, banking supervision, and risk analyses, as well as staff members involved in the implementation of the operational risk management requirements of the Basel regulatory framework. Unfortunately, no such information was available in the public domain. Consequently, a database comprising 126 Ghanaian bank personnel employed at the 23 Ghanaian banks with the relevant background, experience, and specialised knowledge of operational risk

management, risk culture, banking supervision, and the implementation of the Basel regulatory framework was developed. The Ghanaian banks selected to participate in the study comprised the 23 banks operating in Ghana, all of which were registered members of the Ghana Association of Banks at the time (BoG 2022). The database was developed by conducting web searches, liaising with the Ghana Association of Banks (GAB), and appointing a fieldworker employed at the Ministry of Finance in Ghana who was able to correspond and interact with each of the 23 selected Ghanaian banks to obtain the contact information of appropriate Ghanaian bank personnel to form part of this study's sample. A questionnaire was employed as the data-collection instrument, distributed via e-mail to the 126 identified respondents. The questionnaire was considered the optimal method for the collection of data due to geographical and financial constraints. An additional reason for making use of a questionnaire was that the respondents were able to complete the questionnaire in their own time, when it suited them best, to ensure a high response rate. The questionnaire comprised closed-ended and open-ended questions. For the closed-ended response categories, a four-point Likert scale was chosen to collect the data, which varied from "strongly agree" to "strongly disagree" and from "a very large extent" to "no extent". The open-ended questions were included to obtain additional information and equip the researchers with an improved perspective on the challenges the respondents experienced with the implementation of an appropriate risk culture that supports the effective management of operational risks.

For this study, two inferential statistical tests were conducted: the Mann–Whitney U test and multiple regression analysis. The Mann–Whitney U test, designed to compare the medians of two independent variables, was employed here to test whether a statistically significant relationship existed between specific constructs, which were closely associated with the research objectives of the current study. This non-parametric test was utilised since the measured data were on an ordinal scale. The chosen level of significance for this study was 0.05. For a statistical test to be considered statistically significant, the calculated p -value has to be lower than or equal to 0.05 ($p \leq 0.05$) (Anderson et al. 2018).

Multiple regression analysis was utilised for this study to model the relationship between a continuous dependent variable and a number of independent variables. The results of the multiple regression analysis provided an indication of the percentage of variance in the dependent variable that is explained by the independent variables, as well as the significance of each individual predictor (Cooper and Schindler 2014; Pallant 2020; Saunders et al. 2012; Williams et al. 2012).

This study adhered to all the required ethical procedures and considerations to ensure that it was conducted in an ethical manner.

4. Results

For this study, Statistical Package for Social Sciences (SPSS) version 25 was utilised to analyse the data that had been collected.

4.1. Descriptive Results

The respondents' experience and area of employment were analysed as part of the data exploration before any of the inferential statistical analyses were conducted.

4.1.1. Industry Experience of the Respondents

The industry experience of the respondents ranged from a minimum of 2 years to a maximum of 28 years. The mean value was calculated at 11.09 years, with a standard deviation of 5.320 years, as indicated in Figure 2 below.

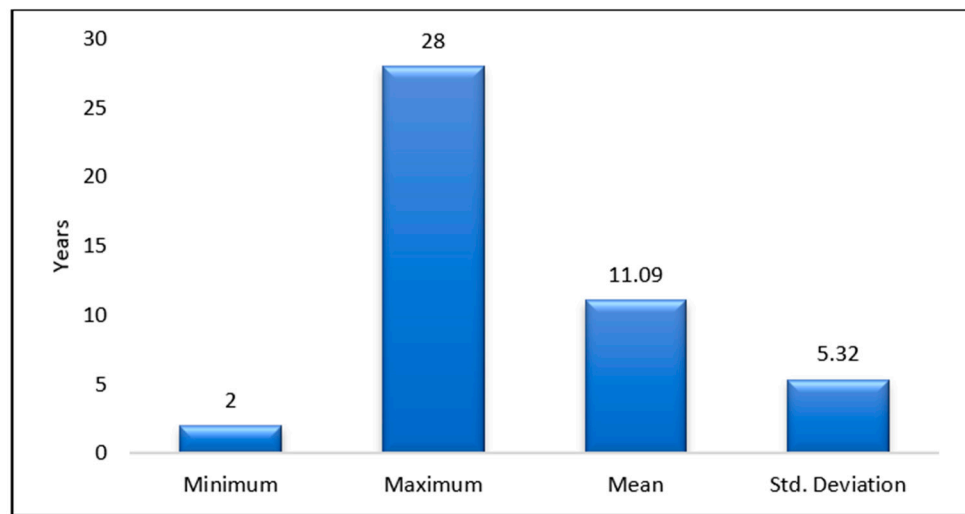


Figure 2. Industry experience.

4.1.2. Area of Employment of the Respondents

For this study, Figure 3 shows the different areas of employment of the respondents.

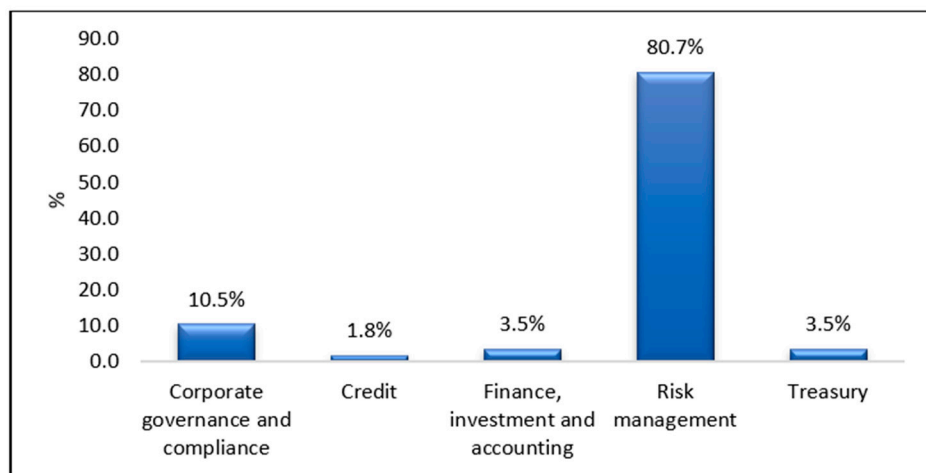


Figure 3. Area of banking employment.

The majority of the respondents were employed in the risk management function (80.7%) of their respective banks, followed by the departments of corporate governance and compliance (10.5%), finance, investment, and accounting (3.5%), treasury (3.5%), and credit (1.8%).

4.1.3. Respondents' Views on the Benefits of Operational Risk Management

Effective operational risk management has become a key component in achieving a competitive advantage for banks. Investors seek out indicators that demonstrate high-quality risk management practices that point to corporate quality and sustainable financial performance. The multiple benefits of successful operational risk management are improved access to capital, reduced volatility in cash flow, improved credit ratings, and growth in share prices (Falih et al. 2020; Gadzo et al. 2019; Koomson 2011; Radomska 2014).

Consequently, the management teams of banks should ensure that operational risk management functions effectively within banks to avert any unnecessary losses, maintain the sustainability of its operations, and ultimately serve as a competitive advantage (Koomson 2011; Radomska 2014).

The respondents' perspectives on the value of operational risk are presented in Figures 4–6.

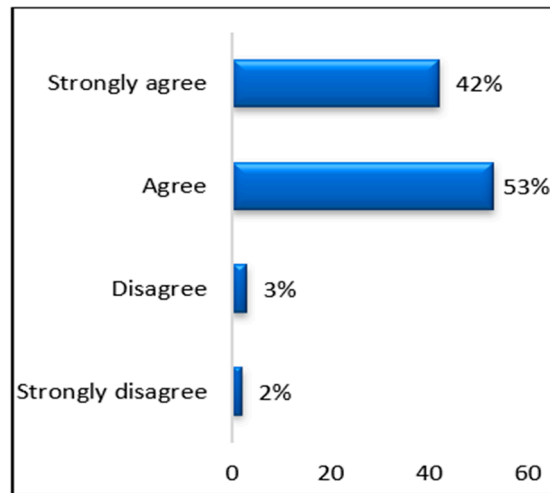


Figure 4. Freeing up capital.

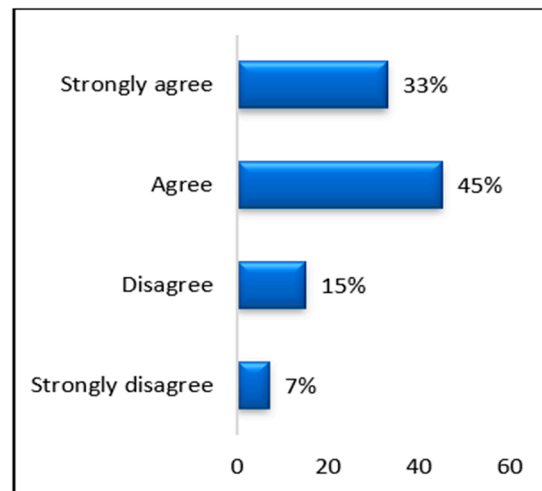


Figure 5. Lowers profit and loss volatility.

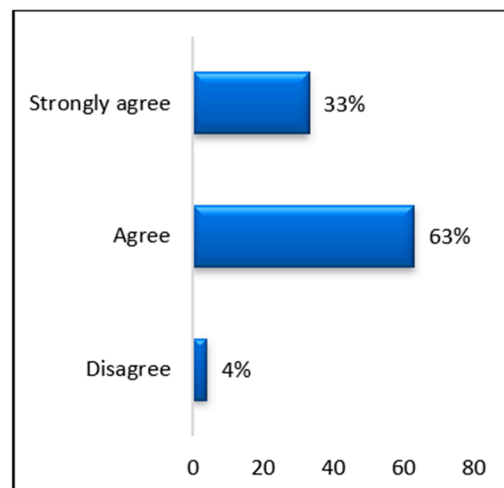


Figure 6. Competitive advantage.

Figure 4 shows that 42% of the respondents strongly agreed, 53% agreed, 3% disagreed, and only 2% strongly disagreed that the effective management of operational risk assists Ghanaian banks in freeing up capital, which can be utilised in other business units of the bank.

Figure 5 indicates that 33% of the respondents strongly agreed, 45% agreed, 15% disagreed, and 7% strongly disagreed that the effective management of operational risk lowers the profit and loss volatility of Ghanaian banks.

In Figure 6, it is shown that 33% of the respondents strongly agreed, 63% agreed, and 4% disagreed that the effective management of operational risk is regarded as a competitive advantage for Ghanaian banks. None of the respondents strongly disagreed.

4.1.4. Existence of and Responsibility for a Risk Culture

According to the BCBS, risk management must be embedded into the culture of a bank. Since risk management should be a critical focus area of the top management and all business line managers, these officials should communicate risk management information in an appropriate way to all staff members to make accurate strategic and day-to-day business decisions (BIS 2020). Figures 7 and 8 provide additional insight into the risk culture of Ghanaian banks.

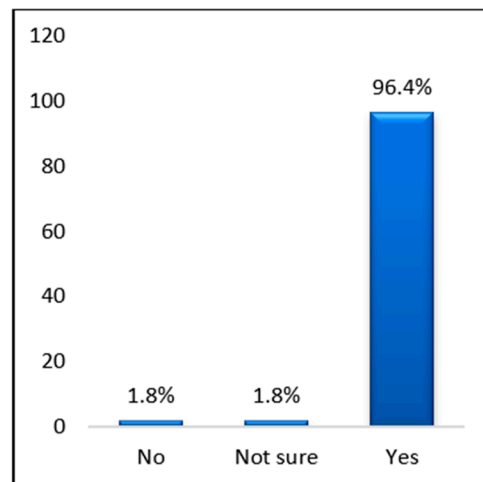


Figure 7. Existence of risk culture with regard to the management of operational risk.

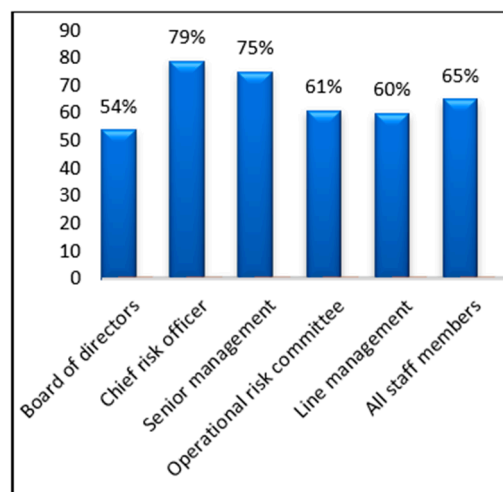


Figure 8. Responsibility for the existence of risk culture.

Figure 7 shows that 96.4% of the respondents indicated that, at the time, a risk culture existed in their respective banks, which encouraged communication, collaboration, and interaction between the 3LOD regarding the management of operational risk. A further 1.8% mentioned that such a risk culture did not exist in their bank, and 1.8% indicated that they were not sure what the risk culture of their respective banks was regarding the management of operational risk.

Figure 8 shows that establishing and maintaining a risk culture that supports the effective management of operational risk was regarded as a joint responsibility, shared by the CRO (79%), senior management (75%), all relevant staff members (65%), the operational risk committee (61%), line management (60%), and the boards of directors (54%) of the respective banks.

4.2. Inferential Statistical Analysis

In this section, the relationship between the perceived risk culture and the management of operational risk in Ghanaian banks is discussed.

4.2.1. Relationship between the Perceived Risk Culture and Operational Risk Management

Six research hypotheses tested the relationship between risk culture and aspects of operational risk management within Ghanaian banks. In each hypothesis, the relationship between the level of implementation of a risk culture that encourages and supports operational risk management was tested. These research hypotheses are summarised in Table 2 below.

Table 2. The research hypotheses used.

No.	Hypothesis
H _{1a}	There is a statistically significant difference in Ghanaian banks between their level of implementation of a risk culture that encourages and supports operational risk management and the extent to which these banks have monitoring and reporting procedures in place.
H _{2a}	There is a statistically significant difference in Ghanaian banks between their level of implementation of a risk culture that encourages and supports operational risk management and their level of agreement on the utilisation of the 3LOD approach for the management of operational risk.
H _{3a}	There is a statistically significant difference in Ghanaian banks between their level of implementation of a risk culture that encourages and supports operational risk management and their level of agreement on the compliance function advising the board and senior management about complying with regulations and standards on operational risk.
H _{4a}	There is a statistically significant difference in Ghanaian banks between their level of implementation of a risk culture that encourages and supports operational risk management and their level of agreement that the internal audit function independently assesses the effectiveness and efficiency of operational risk management.
H _{5a}	There is a statistically significant difference in Ghanaian banks between their level of implementation of a risk culture that encourages and supports operational risk management and their level of agreement on disclosing key points concerning their risk exposures and risk management strategies with regard to the management of operational risk.
H _{6a}	There is a statistically significant difference in Ghanaian banks between their level of implementation of a risk culture that encourages and supports operational risk management and their level of agreement on receiving regular guidance from the banking regulator with regard to the governance and management of operational risk.

The results of the Mann–Whitney U test are presented in Table 3 below, followed by a summary of the medians of each of the hypotheses in Table 4.

Table 3. Mann–Whitney U test results for the hypotheses.

Mann–Whitney U Test Results						
	H _{1a}	H _{2a}	H _{3a}	H _{4a}	H _{5a}	H _{6a}
Mann–Whitney U	449.50	482.00	452.00	589.50	463.00	574.50
Wilcoxon W	774.50	807.00	777.00	914.50	788.00	899.50
Z	1.54	2.39	1.64	4.40	2.09	3.72
Asymptotic sig. (2-sided test)	0.02	0.02	0.04	0.04	0.02	0.00

Table 4. Median results for the hypotheses.

Implementation Level of Risk Culture Medians						
	H _{1a}	H _{2a}	H _{3a}	H _{4a}	H _{5a}	H _{6a}
Partially implemented	3.20	3.50	3.33	3.00	3.00	2.50
Fully implemented	3.40	4.00	4.00	4.00	3.50	3.20

- Risk culture and monitoring and reporting procedures

The results show that a statistically significant difference existed at the 5% level of significance between Ghanaian banks that have fully implemented (*Mdn* = 3.40) and partially implemented (*Mdn* = 3.20) a risk culture that encouraged and supported the management of operational risk, regarding the extent to which monitoring and reporting procedures were in place, which promoted the proactive management of operational risk (*U* = 449.50, *z* = 1.54, *p* < 0.05).

After further examination of the median results, it was concluded at the time that Ghanaian banks that had a risk culture that was fully implemented to support their operational risk management practices also had more advanced monitoring and reporting procedures in place to enable proactive operational risk management than Ghanaian banks that only had partially implemented risk cultures. It can therefore be stated that the risk culture of Ghanaian banks is important for successful operational risk management as it encourages and promotes effective monitoring and reporting procedures.

- Risk culture and the three lines of defence (3LOD) approach

After further examination, a statistically significant difference was found at the 5% level of significance between Ghanaian banks that had fully implemented (*Mdn* = 4.00) or partially implemented (*Mdn* = 3.50) a risk culture that encouraged and supported the management of operational risk, regarding the utilisation of the 3LOD approach for the management of operational risk (*U* = 482.00, *z* = 2.39, *p* < 0.05).

Further examination of the median results revealed that Ghanaian banks that had fully implemented a risk culture to support their operational risk management practices tend to agree more strongly on utilising the 3LOD approach for the management of operational risk than Ghanaian banks that have a partially implemented risk culture. It can therefore be stated that the risk culture of Ghanaian banks plays a critical role in the effective utilisation of the 3LOD approach, which is essential to ensure effective operational risk management procedures.

- Risk culture and compliance

After further examination, a statistically significant difference was found to exist at the 5% level of significance, between Ghanaian banks that had fully implemented

(*Mdn* = 4.00) and partially implemented (*Mdn* = 3.33) a risk culture that encourages and supports the management of operational risk, and the extent to which the compliance function of these banks advised their board and senior management on compliance with applicable regulations and standards concerning operational risk management ($U = 452.00$, $z = 1.64$, $p < 0.05$).

The median results were further analysed, and it was determined that Ghanaian banks with a fully implemented risk culture to support operational risk management practices tend to agree more strongly on utilising the compliance function than Ghanaian banks with partially implemented risk cultures. The risk culture of Ghanaian banks therefore plays an important role in enabling the effective operation of the compliance function so that the board of directors and senior management of Ghanaian banks comply with all the required laws and regulations concerning operational risk management.

- Risk culture and internal audit

After further examination, it was determined that there was a statistically significant difference at the 5% level of significance, between Ghanaian banks that had fully implemented (*Mdn* = 4.00) and partially implemented (*Mdn* = 3.00) a risk culture that encouraged and supported the management of operational risk, regarding their level of agreement that the internal audit function independently assessed the effectiveness and efficiency of operational risk management ($U = 589.50$, $z = 4.40$, $p < 0.05$).

Based on further examination of the median results, it was concluded that Ghanaian banks with a fully implemented risk culture to support their operational risk management practices tend to agree more strongly that the internal audit function independently assesses the effectiveness and efficiency of operational risk management in comparison to the Ghanaian banks with a partially implemented risk culture. The risk culture of Ghanaian banks is consequently important in supporting the internal audit function to independently assess the effectiveness and efficiency of operational risk management.

- Risk culture and disclosure and transparency

The analysis of the results shows that there was a statistically significant difference at the 5% level of significance, between Ghanaian banks that had fully implemented (*Mdn* = 3.50) and partially implemented (*Mdn* = 3.00) a risk culture that encouraged and supported the management of operational risk, regarding the disclosure of important information concerning risk exposures and risk management strategies for the management of operational risk ($U = 463.00$, $z = 2.09$, $p < 0.05$).

After further examining the median results, it was concluded that Ghanaian banks with a fully implemented risk culture to support their operational risk management practices tend to agree more strongly that they should disclose their risk exposures and strategies with regard to the management of operational risk than banks that had partially implemented risk cultures. It can therefore be stated that the risk culture of Ghanaian banks is beneficial in promoting the disclosure of important information concerning the risk exposures and risk management strategies of Ghanaian banks when managing operational risks.

- Risk culture and banking supervision

The results indicate that a statistically significant difference existed at the 5% level of significance between Ghanaian banks that had fully implemented (*Mdn* = 3.20) and partially implemented (*Mdn* = 2.50) a risk culture that encouraged and supported the management of operational risk, and the extent to which Ghanaian banks received regular guidance from the banking regulator regarding the governance and management of operational risk ($U = 574.50$, $z = 3.72$, $p < 0.05$).

Further examination of the median results led to the conclusion that Ghanaian banks where a risk culture was fully implemented to support its operational risk management practices tend to agree more strongly that they received regular guidance from the banking regulator on the governance and management of operational risk than Ghanaian banks where a risk culture was only partially implemented. The banking regulator should

accordingly prioritise uniform and frequent interaction and communication with all the Ghanaian banks on the importance of establishing a sound risk culture that supports operational risk management, as there should exist discrepancies between Ghanaian banks on the guidance and support received from the banking regulator.

4.2.2. Multiple Regression Analysis

The multiple regression analysis investigated whether the level of implementation of the Basel III operational risk management requirements (BS) and the level of implementation of a risk culture that encourages and supports operational risk management could predict (RC) the level of agreement on the perceived value of operational risk management among the surveyed Ghanaian banks (PB):

$$PB = \beta_0 + \beta_1(RC) + \beta_2(BS)$$

The hypothesis was formulated as follows:

H₀: BS and RC do not significantly predict PB.

H_a: BS and RC significantly predict PB.

Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, homoscedasticity, independence of residuals, and multicollinearity. The assumption to test for normality of residuals is depicted in Figure 9 below. This indicates that residuals are normally distributed, with no influential outliers. The assumption relating to linearity was found to hold as illustrated in Figure 10 below, which indicates a straight-line relationship between the independent and dependent variables. The assumption relating to homoscedasticity is presented in Figure 11, which found that no distinct pattern exists between the data points in the scatter plot, with no distinct outliers detected. Multicollinearity between the independent variables does not exist as the multicollinearity diagnostics are within acceptable limits (VIF = 1.00; tolerance statistic = 0.99). Independence of residuals are within acceptable limits as the Durbin–Watson statistic was calculated at 1.52.

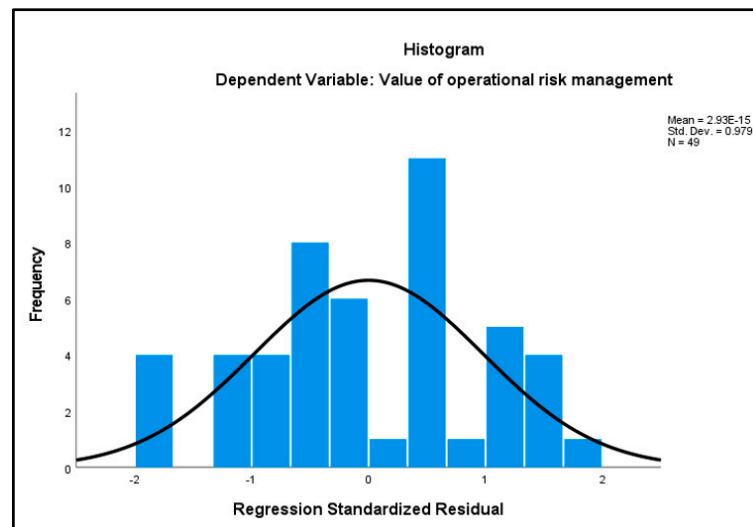


Figure 9. Normality of residuals.

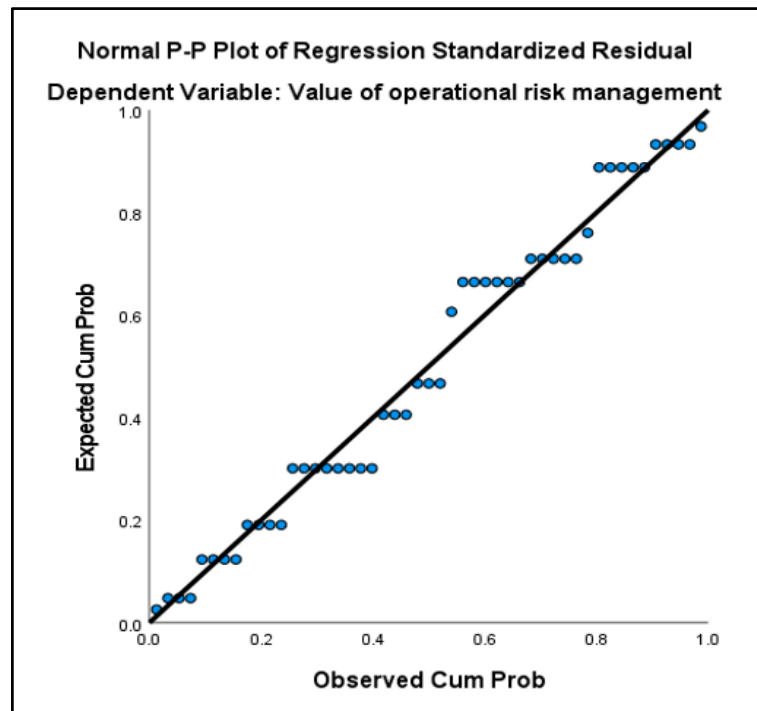


Figure 10. Linearity.

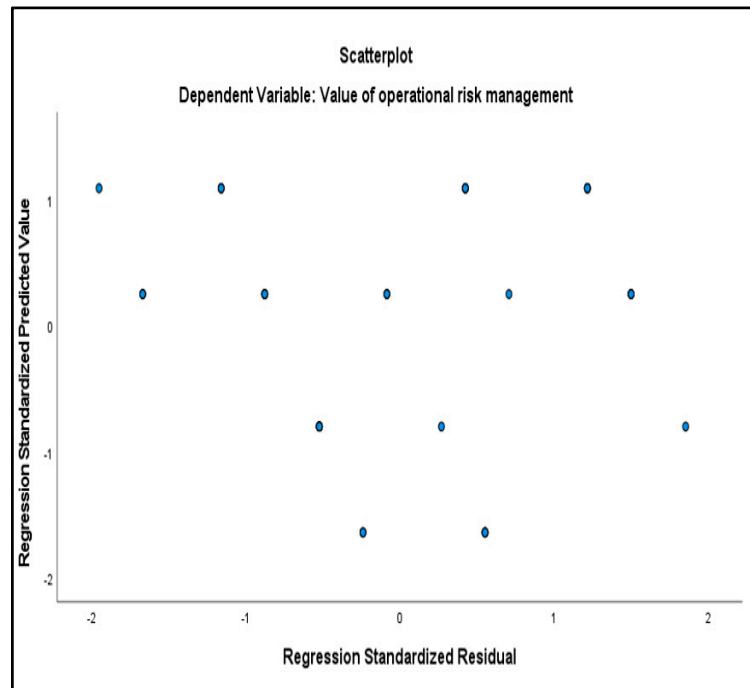


Figure 11. Homoscedasticity.

The results of the multiple regression analysis are shown in Tables 5–7.

Table 5. Model summary ^b.

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin–Watson
2	0.33 ^a	0.11	0.07	0.42	1.52

^a Predictors (constant): Risk culture, Basel III compliance. ^b Dependent variable: Value of operational risk management.

Table 6. ANOVA ^a.

Model		Sum of Squares	Df	Mean Square	F	Sig.
2	Regression	0.96	2	0.48	2.72	0.04 ^b
	Residual	8.15	46	0.18		
	Total	9.11	48			

^a Predictors (constant): Risk culture, Basel III compliance. ^b Dependent variable: Value of operational risk management.

Table 7. Coefficients ^a.

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
2	Constant	3.22	0.11		28.55	0.000
	Risk culture	0.27	0.13	0.300	2.15	0.04
	Basel compliance	−0.12	0.12	−0.14	−0.10	0.33

^a Dependent variable: Value of operational risk management.

The ANOVA table (see Table 6) shows that the model was statistically significant $F(2, 46) = 2.72, p = 0.04$. The combination of independent variables explains a total of 11% of the variance in the dependent variable. A review of the coefficients in Table 7 indicates that only the risk culture is a significant predictor of the value of operational risk management ($B = 0.27, p = 0.04$). In contrast, the Basel III compliance status ($B = -0.12, p = 0.33$) is not a significant indicator. The sign of the B coefficient further suggests that an increase in the establishment of a risk culture that supports the operational risk management practices of Ghanaian banks will result in a higher score in the value of operational risk management.

The final regression model is

$$Y = 3.220 + (0.268 \times X_1) + (-0.119 \times X_2) \tag{1}$$

This study, therefore, revealed that the participants from Ghanaian banks comprehend and acknowledge the critical importance of risk culture to ensure and promote effective operational risk management practices.

However, despite the confirmation of the significant role of risk culture in managing the operational risks of Ghanaian banks, at the time of this study, the respondents reported several challenges with the creation of a risk culture at the banks where they were employed. These challenges are discussed in Section 4.2.3 below.

4.2.3. Challenges with the Implementation of a Risk Culture

The responses suggested that implementing a robust risk culture that promotes and supports the effective management of operational risk in the Ghanaian banking sector remained a challenge.

Figure 12 summarises the most significant challenges that the respondents from Ghanaian banks faced in implementing a risk culture to support the effective management of operational risks.

Figure 12 indicates that the respondents regarded the most severe challenge with the implementation of risk culture to be the training and development of bank personnel. The second most severe challenge was effective communication of operational risk information to all the different business lines of a bank. The roles and responsibilities of bank employees and the reporting and disclosure of operational risk management information to all the relevant stakeholders of the bank were jointly ranked third. Performance appraisal was ranked fourth, and technological and environmental barriers were ranked fifth.

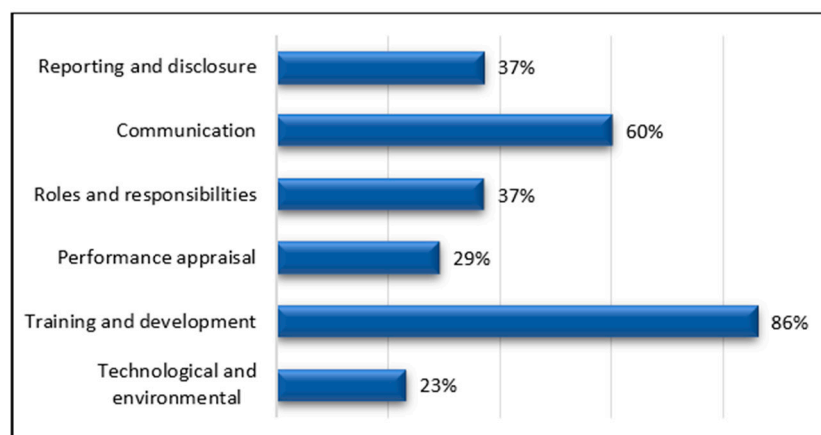


Figure 12. Challenges with the implementation of risk culture.

5. Discussion

The literature points to the complexity of creating an adequate risk culture appropriate to any bank, its business model, and the requirements of the regulator. The regulator (the BoG in the case of this study) requires an adequate risk culture, and it remains the responsibility of the individual banks in Ghana to create such a risk culture for themselves.

The implications for practice are therefore that Ghanaian banks need to incorporate risk culture into their control systems. The point of departure should be to pay attention to internal controls, such as ethical standards and formulating organisational norms regarding the handling of failures. In arriving at a common understanding about adequate and ethically acceptable risk behaviour, each bank will have to align its action controls (organisational structure, accountability, and supervision), results controls (incentive systems), and personnel controls (hiring and training, communication, knowledge, and personnel characteristics) with one another. Another implication is that changes to the external controls may also be needed, and that leadership and integrity need to be promoted by the Ghanaian government, the BoG, and the IoD-GH as part of enhancing a national culture of integrity.

The study found significant relationships (at the 5% level) between risk culture and monitoring and reporting procedures, the three lines of defence, compliance, internal auditing, disclosure of operational risk information, and guidance from the banking regulator in the Ghanaian banking sector. However, the respondents reported the following challenges with their risk culture (in order of priority): training and development, communication, reporting and disclosure, roles and responsibilities, performance appraisal, and technological and environmental barriers.

From the literature and the data collected, it was concluded that significant guidance and training need to be provided to Ghanaian banks to enhance a risk culture that supports and promotes the effective management of operational risk. Ghanaian banks will need to recruit, retain, and develop experienced and knowledgeable bank employees with the necessary knowledge, skills, attitudes, values, and attributes to manage operational risks successfully. Therefore, they must prioritise offering regular training opportunities to all staff members at different hierarchical levels on how to manage operational risk in accordance with the Basel III regulations and deal with operational risk in a dynamic manner. The training interventions could focus on the following key areas for Ghanaian banks:

- Creating awareness among bank employees of the importance of operational risk management to ensure the resilience and sustainability of Ghanaian banks.
- Fostering a stimulating environment where knowledge and competencies of operational risk management are cultivated, valued, and developed.

It is critical that Ghanaian banks recognise and appreciate that the communication of operational risk information between staff members should be a continuous, interactive

process of obtaining, providing, and sharing the required information. Pertinent, structured communication channels should be established throughout these banks to ensure that operational risks are identified in a timely manner, correctly understood, and managed appropriately. The board of directors and senior management of Ghanaian banks have a vital role in establishing and maintaining these communication channels so that operational risk information flows vertically and horizontally throughout the bank. The two communication lines that should receive top priority are, firstly, communication between the board of directors and senior management, and secondly, communication between the three lines of defence. With the successful establishment of these communication lines, operational risk information will be more accurately distributed across the business lines of Ghanaian banks.

For Ghanaian banks to foster effective operational risk management practices, it is recommended that an incentive system should be instituted to promote prudent risk-taking and accurate decision-making. Effective operational risk management practices exercised by bank employees should thus be appropriately acknowledged and rewarded. An incentive system will encourage bank employees and could be utilised to identify shortcomings in an employee's operational risk management competencies, capabilities, and behaviour. This will likely remove unethical careless behaviour, enhance the quality of operational risk management practices across the entire bank, and improve the risk culture.

Research on emerging operational risks, such as ICT risks for banks operating in Ghana, is necessary since all banks have become increasingly dependent on information technology. Ghanaian banks can advance their operational risk management practices and adapt to volatile banking environments by training risk management personnel to identify and manage ICT risks effectively. Furthermore, investment in artificial intelligence to assist Ghanaian banks to successfully manage ICT risks should be considered.

Additional challenges that Ghanaian banks should address are ensuring that their organisational structure, accountability, and banking supervision influence their risk culture positively and encouraging effective operational risk management practices.

The first limitation of this study was that the data-collection phase took place over 22 weeks. A longitudinal study spanning multiple years could be considered for future research purposes. Such an approach would allow the collection of additional information and observe how specific variables change over time, enabling the improvement of the findings presented in this study. The second limitation was that it was not possible to conduct face-to-face interviews with the sample group of respondents because of financial and technological constraints. The collection of primary data by means of face-to-face interviews and using a qualitative approach could be considered for future research purposes.

6. Conclusions

The implementation of the Basel regulatory framework in Ghana resumed in 2016 with the objective of positioning Ghana as an international financial services centre (BoG 2018, 2021; Jones 2022; Adjei 2018). However, the sector is still regarded as unstable, inefficient, and inexperienced (BoG 2020; Dwamena and Yusoff 2022; Torqu and Laryea 2021).

Arhenful et al. (2019) found that the ineffective management of operational risk has a negative impact on the financial performance and sustainability of commercial banks operating in Ghana. This was also confirmed by Gadzo et al. (2019), who stated that the risk culture, risk governance, and operational risk management practices of Ghanaian banks are not effective and need to be improved as they directly impact the financial performance and competitiveness of Ghanaian banks (Ozili 2019).

The purpose of this study was to investigate the risk culture perceptions of Ghanaian bank personnel and to provide recommendations to enhance the risk culture among Ghanaian banks to promote effective operational risk management practices. Any challenges faced regarding risk culture need to be addressed to enhance the successful implementation of operational risk management and ultimately ensure the financial stability and sustainability of banks in Ghana.

As indicated in Section 4.2.1, the participating Ghanaian banks valued the effective management of operational risk as a notable contributor to enhancing the financial stability and sustainability of banks and serving as a competitive advantage in their environment. However, the awareness among Ghanaian banks of the irrefutable value of risk culture could be further enhanced by improving the values, norms, and culture prevalent in the business environment and by improving the knowledge of risk culture among the staff members of banks in Ghana, as envisaged by Kunz and Heitz (2021).

The interrelationship between risk management, risk culture, and risk governance should be clearly understood and appreciated by banks to provide them with the required risk culture framework and management controls to manage operational risks effectively, in line with research findings by Evans and Selim (2015), the International Finance Corporation (2015), and the IRM (2012b). However, Ghanaian banks will only achieve risk-intelligent culture status once the challenges identified in Section 4.2.3 have been adequately addressed.

Risk culture is a continuous, dynamic process and can be improved significantly by strong leadership and commitment by top management. Top management needs to uphold principles that ensure moral conduct and demonstrate integrity, ethical conduct, respect, and accountability. A risk culture that encourages and sustains regular interaction among relevant parties has been found to enable and enhance the operational risk management practices of banking institutions. For this reason, all the employees of a bank should understand and acknowledge the importance of risk culture and the significant role it plays in the ability of a bank to identify and manage operational risk successfully.

Author Contributions: Conceptualisation, G.P.M.G. and J.M.; methodology, G.P.M.G.; software, G.P.M.G.; validation, G.P.M.G. and J.M.; formal analysis, G.P.M.G.; investigation, G.P.M.G.; writing—original draft preparation, G.P.M.G.; writing—review and editing, J.M.; visualisation, G.P.M.G.; supervision, J.M.; project administration, G.P.M.G.; funding acquisition, G.P.M.G. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by The University of South Africa, Masters and Doctoral Support Programme (MDSP).

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Addison, Ernest. 2021. Keynote Address at the 2021 Annual Bankers Week Dinner of the Chartered Institute of Bankers. Available online: https://www.bog.gov.gh/wpcontent/uploads/2021/12/2021-CIB-Annual-Dinner-Event_Governor_Speech_11_12_21.pdf (accessed on 8 March 2022).
- Adjei, Samuel. 2018. Implementing Basel II/III in Ghana. Published Online 20 February 2018. Available online: <https://www.linkedin.com/pulse/implementing-basel-ii-iii-ghanapt1-samuel-adjei/> (accessed on 22 June 2022).
- Agyemang, Otu Serebour, and Monia Castellini. 2015. Corporate governance in an emergent economy: A case of Ghana. *Corporate Governance* 15: 52–84. [CrossRef]
- Amenu-Tekaa, Kennedy Senyo. 2022. Financial sector regulatory and supervisory framework in Ghana—The pre- and post-2017 banking crisis. *International Journal of Economics, Commerce and Management* X: 1–29.
- Amponsah-Mensah, Afia Agyeman. 2021. Ponzi schemes in Ghana: The Menzgold saga. *African Journal of International and Comparative Law* 29: 463–76. [CrossRef]
- Anderson, David R., Dennis J. Sweeney, Thomas Y. Williams, and Jeffrey D. Camm. 2018. *Essentials of Modern Business Statistics with MS Office Excel*, 7th ed. Boston: Cengage.
- Arhenful, Peter, Augustine Kwadwo Yeboah, and Bernice Aba Tackie. 2019. Evaluation of operational risk management of commercial banks in Ghana. *Advances in Management and Applied Economics* 9: 25–40.
- Asomah, Joseph Yaw. 2019. What are the key drivers of persistent Ghanaian political corruption? *Journal of Asian and African Studies* 54: 638–55. [CrossRef]
- Awrey, Dan, William Blair, and David Kershaw. 2013. Between law and markets: Is there a role for culture and ethics in financial regulation. *Delaware Journal Corporate Law* 38: 191–246. [CrossRef]
- Bank for International Settlements. 2011. Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems. Available online: <https://www.bis.org/publ/bcbs189.htm> (accessed on 4 July 2020).

- Bank for International Settlements. 2014. A History of the Basel Committee. Available online: <https://www.bis.org/bcbs/history.htm> (accessed on 4 August 2021).
- Bank for International Settlements. 2020. Basel III: The Implementation Imperative. Available online: <https://www.bis.org/speeches/sp200130.html> (accessed on 2 March 2022).
- Bank for International Settlements. 2021. Revisions to the Principles for the Sound Management of Operational Risk. Available online: <https://www.bis.org/bcbs/publ/d515.pdf> (accessed on 14 July 2022).
- BoG. 2018. Capital Requirements Directive. Available online: <https://www.bog.gov.gh/wp-content/uploads/2022/05/Basel-II-BOG-CRD-Final-27-June-2018-Basel-Committee-BSD.pdf> (accessed on 14 July 2023).
- BoG. 2020. Financial Stability Review. Available online: https://www.bog.gov.gh/wp-content/uploads/2021/11/Financial_Stability_Review_2020-1.pdf (accessed on 9 July 2023).
- BoG. 2021. Risk Management Directive. Available online: <https://www.bog.gov.gh/wp-content/uploads/2022/05/BoG-Risk-Management-Directive-Final.pdf> (accessed on 14 July 2023).
- BoG. 2021a. Bank of Ghana Admitted as a Member of the Basel Consultative Group [Press release]. Available online: <https://www.bog.gov.gh/news/press-release-bank-of-ghana-admitted-as-a-member-of-the-basel-consultative-group> (accessed on 14 June 2023).
- BoG. 2021b. Risk Management Directive for Banks, Savings and Loans, Finance Houses and Financial Holding Companies. Available online: <https://www.bog.gov.gh/wp-content/uploads/2021/11/BoG-Risk-Management-Directive-26-11-2021.pdf> (accessed on 7 March 2023).
- BoG. 2022. 63 Years of Central Banking in Ghana: Anchoring Monetary and Financial Stability. Available online: <https://www.bog.gov.gh/news/63-years-of-central-banking-in-ghana-anchoring-monetary-and-financial-stability/> (accessed on 17 June 2023).
- BoG. 2023. Brief Historical Background. Available online: <https://www.bog.gov.gh/about-the-bank/> (accessed on 14 July 2023).
- Brown, Kareen, Ranjini Jha, and Parunchana Pacharn. 2015. Ex ante CEO severance pay and risk-taking in the financial services sector. *Journal of Banking and Finance* 59: 111–26. [CrossRef]
- Buyl, Tine, Christophe Boone, and James B. Wade. 2019. CEO narcissism, risk-taking, and resilience: An empirical analysis in US commercial banks. *Journal of Management* 45: 1372–400. [CrossRef]
- Chen, Carl R., Thomas L. Steiner, and Ann Marie Whyte. 2006. Does stock option-based executive compensation induce risk-taking? An analysis of the banking industry. *Journal of Banking and Finance* 30: 915–45. [CrossRef]
- Cohn, Alain, Ernst Fehr, and Michel André Maréchal. 2017. Do professional norms in the banking industry favor risk taking? *The Review of Financial Studies* 30: 3801–23. [CrossRef]
- Cooper, Donald R., and Pamela S. Schindler. 2014. *Business Research Methods*, 12th ed. New York: McGraw-Hill.
- Cordery, Carolyn. 2007. NAB's 'Annus Horribilis': Fraud and corporate governance. *Australian Accounting Review* 17: 62–70. [CrossRef]
- Creswell, John W. 2014. *Research Design: Qualitative, Quantitative and Mixed-Method Approaches*, 4th ed. Newcastle upon Tyne: Sage.
- Dellaportas, Steven, Barry J. Cooper, and Peter Braica. 2007. Leadership, culture and employee deceit: The case of the National Australia Bank. *Corporate Governance: An International Review* 15: 1442–52. [CrossRef]
- Deloitte. 2012. Cultivating a Risk Intelligent Culture: Understand, Measure, Strengthen and Report. Available online: <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/center-for-corporate-governance/us-ccg-cultivating-a-risk-intelligent-culture-050212.pdf> (accessed on 18 February 2020).
- Drennan, Lynn T. 2004. Ethics, governance and risk management: Lessons from Mirror Group Newspapers and Barings Bank. *Journal of Business Ethics* 52: 257–66. [CrossRef]
- Drummond, Helga. 2002. Living in a fool's paradise: The collapse of Barings Bank. *Management Decision* 40: 232–38. [CrossRef]
- Dwamena, Kwame Ofori, and Mohd Effandi Yusoff. 2022. Banking crisis in Ghana: Major causes. *International Journal of Academic Research in Accounting Finance and Management Sciences* 12: 406–18. [CrossRef]
- Evans, Cameron J., and Shundil Selim. 2015. *Risk Culture, Risk Governance, and Balanced Incentives: Recommendations for Strengthening Risk Management in Emerging Market Banks*. Washington, DC: International Finance Corporation.
- Falih, Falah Saleem, Rozilah Kasim, Maryam Hamid Yaseen, Mohammed Ihsan Ahmed Sabah, and Kadhim Ghaffar Kadhim. 2020. The relationship of operational risk management and competitive advantages in enhancing the Iraqi banking sector. *Solid State Technology* 63: 2426–38.
- Fichter, Rachel. 2018. Do the right thing! Developing ethical behavior in financial institutions. *Journal of Business Ethics* 151: 69–84. [CrossRef]
- Gadzo, Samuel Gameli, Holy Kwabla Kportorgbi, and John Gartchie Gatsi. 2019. Credit risk and operational risk on financial performance of universal banks in Ghana: A practical least squared structural equation model (PLS SEM) approach. *Cogent Economics and Finance* 7: 1589406. [CrossRef]
- Gendron, Yves, Marion Brivot, and Henri Guénin-Paracini. 2016. The construction of risk management credibility within corporate boardrooms. *European Accounting Review* 25: 549–78. [CrossRef]
- Global Institute of Internal Auditors. 2019. Risk Culture. Available online: <https://global.theiia.org/standards-guidance/memberdocuments/IG2120-2016-12.pdf> (accessed on 9 July 2021).
- Gomes, Tamara, and Natasha Khan. 2011. Strengthening bank management of liquidity risk: The Basel III liquidity standards. *Financial System Review* 5: 35–42.

- Holland, John. 2010. Banks, knowledge and crisis: A case of knowledge and learning failure. *Journal of Financial Regulation and Compliance* 18: 87–105. [CrossRef]
- Illiashenko, Pavlo, and Laivi Laidroo. 2020. National culture and bank risk-taking: Contradictory case of individualism. *Research in International Business and Finance* 51: 101069. [CrossRef]
- Institute of International Finance. 2009. Reform in the Financial Services Industry: Strengthening Practices for a More Stable System. Available online: <https://www.iif.com/DesktopModules/DnnSharp/SearchBoost/UrlFwd.ashx?url=%2fPublications%2fID%2f1057%2fIIF-Releases-Report-on-Reforms-in-the-Financial-Services-Industry&ukey=%2bBeh%2bxx2f32%2bLTZoDsrf2LgXvF%2f4IcOgE3%2fuNP3RvWA8I6WdBxRE1g%3d%3d&logid=129638-dvsleax1oiy1ix5f> (accessed on 9 April 2021).
- Institute of Risk Management. 2012a. Risk Culture: Resources for Practitioners. Available online: <https://www.theirm.org/media/7236/risk-culture-resources-for-practitioners.pdf> (accessed on 3 September 2021).
- Institute of Risk Management. 2012b. Risk Culture under the Microscope: Guidance for Boards. Available online: https://www.academia.edu/4679263/The%2%A0Institute%2%A0of%2%A0Risk%2%A0Management%2%A0Risk%2%A0culture_Under%2%A0the%2%A0Microscope%2%A0Guidance%2%A0for%2%A0Boards (accessed on 3 September 2021).
- International Finance Corporation. 2015. Risk Culture, Risk Governance, and Balanced Incentives: Recommendations for Strengthening Risk Management in Emerging Market Banks. Available online: <http://hdl.handle.net/10986/25790> (accessed on 11 April 2021).
- Jones, Emily. 2022. Ghana. Policy-Driven Convergence. Global Economic Governance Programme. Available online: <https://www.geg.ox.ac.uk/project/ghana> (accessed on 4 August 2022).
- Kanagaretnam, Kiridaran, Chee Yeow Lim, and Gerald J. Lobo. 2014. Influence of national culture on accounting conservatism and risk-taking in the banking industry. *The Accounting Review* 89: 1115–49. [CrossRef]
- Koomson, Agnes. 2011. Operational Risk Management and Competitive Advantage in the Ghanaian Banking Industry. Master's dissertation, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.
- Kunz, Jennifer, and Mathias Heitz. 2021. Banks' risk culture and management control systems: A systematic literature review. *Journal of Management Control* 32: 439–93. [CrossRef]
- Lim, Chu Y., Margaret Woods, Christopher Humphrey, and Jean L. Seow. 2017. The paradoxes of risk management in the banking sector. *The British Accounting Review* 49: 75–90. [CrossRef]
- Marx, Johan, and Cecilia Jacoba de Swardt. 2019. Towards a competency-based undergraduate qualification in risk management. *Qualitative Research in Financial Markets* 12: 96–117. [CrossRef]
- Muñiz, Beatriz F., José Manuel Montes Peón, and Camilo José Vázquez Ordás. 2020. Misconduct and risk climate in banking: Development of a multidimensional measurement scale. *Global Policy* 11: 73–83. [CrossRef]
- Mutezo, Ashley T. 2015. Small and Medium Enterprise Financing and Credit Rationing: The Role of Banks in South Africa. Ph.D. thesis, University of South Africa, Pretoria, South Africa. Available online: <https://core.ac.uk/download/pdf/141500419.pdf> (accessed on 26 June 2022).
- Newby, Peter. 2010. *Research Methods for Education*. London: Pearson.
- Njogu, Ida Wairimu. 2017. Effect of Employees' Work Experience on Performance within Hotel Industry: A Case of Amber Hotel, Kenya. MBA dissertation, United States International University Africa, Kenya, Africa. Available online: <http://erepo.usiu.ac.ke/11732/3464> (accessed on 23 June 2022).
- Ozili, Peterson K. 2019. Basel III in Africa: Making it work. *African Journal of Economic and Management Studies* 10: 401–7. [CrossRef]
- Pallant, Julie. 2020. *SPSS Survival Manual: A Step-by-Step Guide to Data Analysis Using SPSS for Windows*, 7th ed. Abingdon: Routledge. [CrossRef]
- Pepi, Mitică. 2019. Operational risk management in a financial Institution. *Ovidius University Annals, Economic Sciences Series* 19: 840–49.
- Power, Michael, Simon Ashby, and Tommaso Palermo. 2013. *Risk Culture in Financial Organisations: A Research Report*. CARR-Analysis of Risk and Regulation. London: London School of Economics. Available online: http://eprints.lse.ac.uk/67978/1/Palermo_Rsik%20culture%20research%20report_2016.pdf (accessed on 20 September 2021).
- Radomska, Joanna. 2014. Operational risk associated with the strategy implementation. *Management* 18: 31–43. [CrossRef]
- Roy, Anjan. 2008. Organization structure and risk taking in banking. *Risk Management* 10: 122–34. [CrossRef]
- Sants, Hector. 2010. *Can Culture Be Regulated?* Speech delivered at the Mansion House Conference on Values and Trust, Financial Services Authority, London. Available online: http://www.fsa.gov.uk/library/communication/speeches/2010/1004_hs.shtml (accessed on 10 October 2021).
- Saunders, Mark, Philip Lewis, and Adrian Thornhill. 2012. *Research Methods for Business Students*, 7th ed. Hoboken: Prentice-Hall.
- Schindler, Pamela S. 2019. *Business Research Methods*, 13th ed. New York: McGraw-Hill.
- Stanciu, Victoria. 2010. Managing operational risk in banks. *Analele Științifice ale Universității "Alexandru Ioan Cuza" din Iași. Științe Economice* 57: 245–59.
- Torku, King, and Esther Laryea. 2021. Corporate governance and bank failure: Ghana's 2018 banking sector crisis. *Journal of Sustainable Finance & Investment*. [CrossRef]
- Transparency International. 2020. Corruption Perception Index. Available online: <https://www.transparency.org/cpi2019> (accessed on 3 November 2021).
- Tsamenyi, Mathew, Elsie Enninful-Adu, and Joseph Onumah. 2007. Disclosure and corporate governance in developing countries: Evidence from Ghana. *Managerial Auditing Journal* 22: 319–34. [CrossRef]

Tustin, Deon H., André A. Ligthelm, Johan H. Martins, and Helgaard de J. van Wyk. 2010. *Marketing Research in Practice*. Hong Kong: Unisa Press.

Williams, Thomas A., David R. Anderson, and Dennis J. Sweeney. 2012. *Contemporary Business Statistics*, 4th ed. Hong Kong: South-Western.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.