

## The Effect of Internal Controls on The Profitability of Nepalese Commercial Banks

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### Abstract

The study examines the effect of internal controls on the profitability of Nepalese commercial banks. Profitability is dependent variables. The selected independent variables are control environment, risk assessment, control activities, information and technology and monitoring. The primary source of data is used to assess the opinions of respondents regarding control environment, risk assessment, control activities, information and technology, monitoring and profitability of Nepalese commercial banks. The study is based on primary data of 127 respondents. To achieve the purpose of the study, structured questionnaire is prepared. The correlation and multiple regression models are estimated to test the significance and importance of internal controls on the profitability of Nepalese commercial banks.

The study demonstrated a positive impact of control environment on the profitability of Nepalese commercial bank. It indicates that when commercial bank increase the focus on control environment, they earn maximum profit. Similarly, the study revealed a positive impact of risk assessment on the profitability of nepalese commercial bank. It indicates that better risk assessment in internal controls boost the profitability of nepalese commercial bank. Likewise, the study showed a positive impact of control activities on the profitability of nepalese commercial bank. It indicates that the control activities are useful to lead the profitability of nepalese commercial bank. Further, the study observed a positive impact of information and technology on the profitability of Nepalese commercial bank. Use of advanced information and technology is useful to lead the profitability of commercial bank. It indicates that the optimum utilization of information and technology are useful to lead the profitability of nepalese commercial bank. In addition, the study found a positive effect of monitoring on the profitability of Nepalese commercial bank. It indicates that higher level of the monitoring in internal control activities helps to enhance the profitability of Nepalese commercial bank. Overall, these findings underscore the significant role of control environment, risk assessment, control activities, information and technology and monitoring to increase the profitability of Nepalese commercial bank.

*Keywords:* control environment, risk assessment, control activities, information and technology, monitoring, profitability

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### 1. Introduction

Internal controls in the banking sector refer to the processes, procedures, and systems implemented within a bank to ensure the integrity of operations, safeguard assets, and achieve compliance with regulations. internal controls activities include the activities such as control environment, risk assessment, control activities, information and technology and monitoring. Internal control can be seen as agroup of policies and procedure that are embedded to form control on firm's activities to ensure the entity followed objectives set by management and board of directors (Yousef, 2017).

Internal control system allows banks to foresee potential problems which may cause

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financial losses and thereby prevent or minimize any future losses. The study concluded that an efficient and effective internal control system might prevent financial cost (Hayali *et al.*, 2012). Internal control has been recognized as a tool for every type of organization to obtain security for the fulfillment of its institutional objectives and to be able to report on its management to the people interested in them (Mendoza-Zamora *et al.*, 2018). Goh (2009) found that the proportion of audit committee members with financial expertise is positively associated with firms' timeliness in the remediation of material weaknesses. Second, firms with larger audit committees are more likely to remediate material weaknesses in a timely manner. Third, that a more independent board is less susceptible to the undue influence of management and more likely to exert pressure on management to remediate material weaknesses.

Akwaa and Moreno (2016) concluded that there is significant effect of internal controls on credit risk especially the control environment, risk management, control activities and monitoring. The non-disclosure of material internal control weakness is a contributory factor to the ineffective internal control systems. There is however a perceived board ineffectiveness which does not augur well for effective internal control systems. Board characteristics for Spanish banks confirm the agency theory. Tuan and Hung (2015) found that the theoretical relationship between IC and performance effectiveness, as well as between IC and commercial banks' risks.

Umar and Umar-Dikko (2018) addressed that the research deficit and proposes a conceptual framework for measuring internal control effectiveness and bank performance, which could be used by banks and other regulatory bodies. The study found that internal control has a relationship with bank performance. Wokeh (2024) concluded that there is positive relationship between perceptions on internal control system and financial performance.

Rapani and Malim (2020) concluded that most studies on the two variables i.e. internal control and financial performance had indicated a significant and positive relationship between both. In addition, the researchers also found that none of the previous studies had addressed the abovementioned correlation in the context of the Iraqi banking sector. Chowdhury (2021) observed that the monitoring system and the information and communication process have positive impact while the environment, risk measurement and control activities have negative impact on the financial performance of commercial banks. It has further been noticed that regulatory authority has less control over the commercial banks in following the prevailing rules and regulations.

Wokeh (2024) revealed that a negative and insignificant effect of control environment on net profit margin of listed deposit money banks in Nigeria and the existence of a positive but insignificant effect of risk assessment on net profit margin of listed deposit money banks in Nigeria. Dagane (2024) revealed that the Internal Control, risk assessment, control activities, information and communication, and monitoring all positively and significantly influence fraud detection in manufacturing firms in Kenya. The study concluded that top management in manufacturing firms should establish clear lines of authority and allocate duties effectively, making each employee accountable for their actions. Additionally, the management should adopt effective fraud detection and prevention methods, motivate employees to report fraudulent activities by offering rewards, and formulate clear duties and responsibilities for all staff members.

Hamed (2023) showed that the control activities, information and communication, and monitoring components of ICSs are key drivers of bank performance. These findings have important implications for policymakers and regulators who aim to enhance the effectiveness of ICSs in banks and foster economic growth in the region. As sustainability becomes a vital issue in the banking sector, understanding how ICS compliance relates to financial sustainability is essential for ensuring long-term viability. Okharedia *et al.* (2023) showed that the positive effects of the control environment and risk assessment were statistically insignificant.

Statovci *et al.* (2021) concluded that, there is a positive effect of banking internal controls on reducing non-performing loans in commercial banks. Castaneda *et al.* (2022) showed that there is a positive impact of internal controls on labor productivity in public educational institutions. Ogbomo *et al.* (2022) concluded that there is not a significant relationship between Internal Control and the Public Sector. Brennan and Solomon (2008) encouraged that the broader approaches to corporate governance and accountability research beyond the traditional and primarily quantitative approaches. Broader theoretical perspectives, methodological approaches, accountability mechanism, sectors/contexts, globalisation and time horizons are identified. Schneider and Church (2008) concluded that an adverse internal control opinion can underpin the assurance provided by unqualified opinion on financial statements taken as a whole and have a negative effect on lenders assessment. Gamage *et al.* (2014) identified factors that affect control environment; integrity and ethical values, human resource policies and practices, assignment of authority and responsibility, a commitment to the competence, organizational structure, and management's philosophy and operating style, and board of directors or audit committee.

In the context of Nepal, Pardhan *et al.* (2016) found that the correlation between capital ratio and return on equity found to be positive indicating higher the capital ratio higher would be the return on equity. However, the correlation between return on equity and liquidity ratio is found to be negative indicating higher the liquidity in the bank lower would be the return on equity. Further, the correlation is found to be negative for quick ratio with return on equity. Bhattarai (2016) revealed that 'non-performing loan ratio' has negative effect on bank performance whereas 'cost per loan assets' has positive effect on bank performance. In addition to credit risk indicators, bank size has positive effect on bank performance. Capital adequacy ratio and cash reserve are not considered as the influencing variables on bank performance. This study concluded that there is significant relationship between bank performance and credit risk indicators.

Paudel (2018) confirmed that credit risk has the significant negative impact on profitability of commercial banks in Nepal. In addition, solvency ratio, interest spread rate, and inflation have the insignificant negative impact on profitability. In contrast, capital adequacy ratio, total assets, and GDP growth have the significant positive impact on profitability of commercial banks in Nepal. Finally, inter-bank interest rate has insignificant positive impact on profitability. Neupane (2020) revealed that the bank profitability measured by ROA of Nepalese commercial banks is significantly affected by concentration ratio, banking sector development, GDP growth, inflation and exchange rate significantly in opposite direction rather it is not significantly affected by the internal factors like bank size, capital base, deposit, loan, off-balance sheet activities and number of branches.

The above discussion shows that the empirical evidence varies greatly across the studies on the effect of internal control on the profitability of commercial bank. Though there are above mentioned empirical evidence in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The major objective of the study is to examine the effect of internal control on the profitability of Nepalese commercial bank. Specifically, it examines the relationship of control environment, risk assessment, control activities, information and technology with the profitability of Nepalese commercial bank.

The remainder of this study is organized as follows: Section two describes the sample, data and methodology. Section three presents the empirical results and final section draws the conclusion.

## 2. Methodological aspects

The study is based on primary data of 127 respondents. To achieve the purpose of the study, structured questionnaire is prepared. The respondents' views were collected on control environment, risk assessment, control activities, information and technology and monitoring. This study is based on descriptive as well as causal comparative research designs.

### *The model*

The model estimated in this study assumes that profitability depends on internal control. The dependent variables selected for the study is profitability. Similarly, the selected independent variables are control environment, risk assessment, control activities, information and technology and monitoring. Therefore, the model takes the following form:

$$PRO = \beta_0 + \beta_1 CE + \beta_2 RA + \beta_3 CA + \beta_4 IT + \beta_5 MT + e$$

Where,

PRO = Profitability

CE = Control environment

RA = Risk assessment

CA = Control activities

IT = Information and technology

MT = Monitoring

Control environment was measured using a 5-point Likert scale where respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 8 items and sample items include "Our bank has an accounting and financial management system", "Management is committed to the operation of the system." and so on. The reliability of the items was measured by computing the Cronbach's alpha ( $\alpha = 0.858$ ).

Risk assessment was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree.

There are 5 items and sample items include “Management has defined appropriate objectives for the bank”, “Management identifies risks that affect achievement of the objectives.” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ( $\alpha = 0.858$ ).

Control activities were measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 7 items and sample items include “There is adequate segregation of duties in the banks finance and accounts departments”, “Staff are trained to implement the accounting and financial management system”, and so on. The reliability of the items was measured by computing the Cronbach’s alpha ( $\alpha = 0.858$ ).

Information and technology was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “Management has identified individuals who are responsible for coordinating the various activities within the entity”, “Communication helps to evaluate how well guidelines and policies of the organization are working and being implemented” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ( $\alpha = 0.858$ ).

Monitoring was measured using a 5-point Likert scale where the respondents were asked to indicate the responses using 1 for strongly disagree and 5 for strongly agree. There are 5 items and sample items include “There are independent process checks and evaluations of controls activities on ongoing basis”, “Monitoring has helped in assessing the quality of performance of the organization over time”, and so on. The reliability of the items was measured by computing the Cronbach’s alpha ( $\alpha = 0.858$ ).

The following section describes the independent variables used in this study along with the hypothesis formulation.

### *Control environment*

The control environment includes the attitudes, awareness, and actions of management and directors, management and those charged with governance concerning the entity’s internal control and their importance in the entity (Gamage *et al.*, 2014). Control environment refers to all factors which are effective in determining, increasing or decreasing the effectiveness of policies, procedures, and methods specific to a process. Control environment stands out with the basic understanding adopted by the senior management of the corporation to control the organization, its attitude toward problems and approach to solving problems and their perspective of the importance of moral values (Hayali *et al.*, 2013). Environment of an organization is controlled by philosophy and operating cycle, authority and responsibility, organization and development, intention and direction governed by the top management along with their values and competencies (Hevesi, 2005). Amudo and Inanga (2009) revealed that control environment is the control consciousness and attitude toward internal control build and maintained by the management and the employees of an organization. Based on it, this study develops the following hypothesis:

H<sub>1</sub>: There is a positive relationship between control environment and profitability.

### *Risk assessment*

Risk assessment is among the component of internal control. Risks threaten the achievement of objectives. An entity's risk assessment process is the process of identifying and responding to business risks and the results thereof (Mary *et al.*, 2014). Risk Assessment is also defined as identification of potential errors and implements procedures, policies, and control to detect those errors and prevent them. Risk assessment can also be the identification and analysis of risks relevant to the achievement of objectives (Frazer, 2012). organization established an early warning system to determine risks with low-probability, and take the necessary steps to minimize or remove such risks (Hayali *et al.*, 2013). Dubihlela and Lisa (2017) stated that risk management activities protect the organization, its people, assets, and profits, against the physical and adverse consequences, by planning, coordinating and directing the internal risk control and the risk mitigation. Based on it, this study develops the following hypothesis:

H<sub>2</sub>: There is positive relationship between risk assessment and profitability.

### *Control activities*

Amudo and Inanga (2009) viewed that authorisation, segregation of duties, and verification before making the payments, control over access to resources, reconciliation, review operations and supervision as the control activities in any organisation. Control activities included a range of activities as diverse as approvals, authorizations, verifications, reconciliations, reviews of operating performance, security of assets and segregation of duties (Hayali *et al.*, 2013). Control activities involved a policy establishing what should be done and procedures to affect the policy, all policies must be implemented thoughtfully, conscientiously and consistently (Ofori, 2011). Based on it, this study develops the following hypothesis:

H<sub>3</sub>: There is positive relationship between control activities and profitability.

### *Information and technology*

Information systems produce reports of operational, financial, and compliance related information that make it possible to run and control the business. Management information system and its information subsystems are arranged in a disciplined and responsive manner (Hayali *et al.*, 2013). Organizations need information at all levels to assist the management in meeting its objectives (Douglas, 2011). Secondly, an effective and open communication adopted in an organization helps to detect and prevent the possibility of fraud in advance (Hayali *et al.*, 2013). The organization obtains or generates and uses relevant, quality information to support the functioning of other components of internal control. Attributes: Identify information requirements; capture internal and external courses of data; process relevant data into information; maintain quality throughout processing; consider costs and benefits (Janvri *et al.*, 2012). Based on it, this study develops the following hypothesis:

H<sub>4</sub>: There is positive relationship between information and technology and profitability.

### *Monitoring*

Such monitoring is most effective when the system of internal control is integrated into the operating environment and produces regular reports for review. Internal control

system and application of controls change over time, this can be due to the arrival of new personnel, varying effectiveness of implementing the procedures or supervision, time and resource constraints or changes in the circumstances for which the internal control system originally was designed (Gamage *et al.*, 2014). Internal control is adequately designed and properly executed if all five internal control components (control environment, risk assessment, control activities, information and communication, and monitoring) are present and functioning as designed (Ofori, 2011). The ability to identify risks that may occur due to some changes within the organisation and among employees and the ability to provide continuity of internal control need to be monitored in the course of time (Hayali *et al.*, 2013). Continuous monitoring of the internal control system and discovery of deviations is required to achieve organisational objectives (Hayali *et al.*, 2013). Based on it, this study develops the following hypothesis:

H<sub>5</sub>: There is positive relationship between monitoring and profitability.

### 3. Results and discussion

#### *Correlation analysis*

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall's Tau correlation coefficients along with mean and standard deviation has been computed and the results are presented in Table 1.

Table 1

#### **Kendall's Tau correlation coefficients matrix**

This table presents Kendall's Tau coefficients between dependent and independent variables. The correlation coefficients are based on 127 observations. The dependent variable is PRO (Profitability). The independent variables are CE (control environment), RA (risk assessment), CA (control activities), IT (information and technology), and MT (monitoring).

Variables	Mean	S.D.	PRO	CE	RA	CA	IT	MT
<b>PRO</b>	4.182	0.745	1					
<b>CE</b>	4.020	0.665	0.409**	1				
<b>RA</b>	3.916	0.693	0.431**	0.589**	1			
<b>CA</b>	5.549	1.045	0.476**	0.552**	0.574**	1		
<b>IT</b>	4.017	0.726	0.476**	0.477**	0.525**	0.624**	1	
<b>MT</b>	3.963	0.745	0.493**	0.564**	0.543**	0.684**	0.616**	1

Notes: The asterisk signs (\*\*) and (\*) indicate that the results are significant at one percent and five percent level respectively.

Table 1 shows the Kendall's Tau correlation coefficients of dependent and independent variables. The study shows that control environment is positively correlated to profitability. It indicates that better control environments leads to increase in profitability. Similarly, risk assessment is positively correlated to profitability. It indicates that better risk assessment lead to increase in profitability. Likewise, control activities is positively correlated to profitability. It indicates that appropriate control activities leads to increase in profitability. Further, information and technology is also positively correlated profitability. It indicates that improved information and technology leads to increase in profitability. In addition, monitoring is positively correlated to profitability. It indicates that the better monitoring lead to increase in profitability.



### Regression analysis

Having indicated Kendall's Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it presents the regression results of control environment, risk assessment, control activities, information and technology and monitoring on the profitability of Nepalese commercial bank.

Table 2

#### Estimated regression results of control environment, risk assessment, control activities, information and technology and monitoring on the profitability of Nepalese commercial bank

The results are based on 127 observations using linear regression model. The model is  $PRO = \beta_0 + \beta_1 C + \beta_2 R + \beta_3 CA + \beta_4 I + \beta_5 M + e$  where the dependent variable is PRO (Profitability). The independent variables are CE (control environment), RA (Risk assessment), CA (Control activities), IT (information and technology) and MT (monitoring)

Model	Intercept	Regression coefficients of					Adj. R_bar <sup>2</sup>	SEE	F-value
		CE	RA	CA	IT	MT			
1	0.555 (2.290)**	0.902 (15.163)**					0.645	0.444	229.930
2	1.074 (4.161)**		0.794 (12.230)**				0.541	0.505	149.562
3	1.179 (5.025)**			0.541 (13.030)**			0.573	0.487	169.788
4	0.924 (4.026)**				0.881 (14.436)**		0.622	0.458	208.392
5	1.110 (5.175)**					0.775 (14.592)**	0.627	0.455	212.928
6	0.037 (1.807)**	0.686 (6.698)**	0.253 (2.574)**				0.627	0.455	212.928
7	0.417 (1.766)**	0.534 (4.620)**	0.163 (1.594)**	0.177 (2.605)**			0.675	0.424	88.405
8	0.309 (1.360)*	0.458 (4.077)	0.069 (0.683)**	0.059 (0.815)**	0.358 (3.636)**		0.705	0.405	76.195
9	0.350 (1.526)	0.434 (3.818)	0.040 (0.390)*	0.019 (0.241)	0.300 (2.755)**	0.156 (1.223)**	0.706	0.404	61.502

Note:

- Figures in parenthesis are t-values.
- The asterisk signs (\*\*) and (\*) indicate that the results are significant at one percent and five percent level respectively.
- Profitability is the dependent variable.

The regression results show that the beta coefficients for control environments are positive with profitability. It indicates that control environment has a positive impact on profitability. This finding is consistent with the findings of Hanoon *et al.* (2021). Similarly, the beta coefficients for risk assessments are positive with profitability. It indicates that risk assessment have positive impact on profitability. This finding is consistent with the findings of Umar and Umar-Dikko (2018). In addition, the beta coefficients for control activities are positive with profitability. It indicates that control activities have a positive impact on profitability. This finding is consistent with the findings of Nguyen *et al.* (2023). Further, the beta coefficients for information and technology are positive with profitability. It indicates that information and technology have a positive impact on profitability. This finding is consistent with the findings of Olumbe (2012). In addition, the beta coefficients for monitoring are positive with profitability. It indicates that monitoring has a positive impact on profitability. This finding is similar to the findings of Akwaa and Moreno (2016).



#### 4. Summary and conclusion

Internal controls in the banking sector are basically like the rules and systems that banks have in place to keep everything running smoothly and securely. They help prevent mistakes, fraud, and make sure the bank follows all the necessary rules and regulations. It's like having a set of checks and balances to ensure everything is in order. Internal control includes the activities such as control environment, risk assessment, control activities, information and technology and monitoring. The study attempts to examine the effect of internal controls on the profitability of nepalese commercial bank.

This study attempts to examine the effect of internal control on the profitability of Nepalese commercial bank. The study is based on primary data with 127 observations.

The major conclusion of the study is that control environment, risk assessment, control activities, information and technology and monitoring have a positive relationship with profitability. It indicates that control environment, risk assessment, control activities, information and technology and monitoring have positive impact on profitability. The study also concluded that the most influencing factor is control environment followed by monitoring that explains the profitability of Nepalese commercial bank

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