

Contribution of Internal Control Systems to the Performance of Manufacturing Companies in Rwanda, Inyange Industries

Juvenal Mahire

Masters of Science in Finance, University of Kigali, Kigali-Rwanda.

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ABSTRACT

Purpose – The general objective of this study was to find out the contribution of internal control system to the performance of manufacturing companies in Rwanda. Almost all business decision is based at least in part upon reliable, complete and verifiable accounting information. An effective internal control system requires a successful control procedures and control environment, hence there is a need to have planning implementation and monitoring of organization activities for the well general performance. It is from the mentioned issue researcher intended to examine the functionality of internal control systems in Inyange industries Ltd, assess the performance of Inyange industries Ltd during the period of the study and find out the relationship between internal control system and performance of Inyange industries Ltd.

Design/methodology/approach – For the case of this study, the population of the study was board of directors, internal auditors, Operating staffs, audit committee members, finance officers, managers and accountants of Inyange Industries equal to 103. The technique was purposive since the researcher only selected the individuals that were deemed to have the required information where the levels that used are mainly closed questions and also documentary was applied by using Inyange industries reports and SPSS was used to analyze collected data.

Findings – From findings in Table 4.5, it was observed that Inyange industries carried out regular risk assessment procedures. It was also established that the management of Inyange Industries had put in place mechanisms for mitigation of critical risks that may result from fraud. These results are clear indication that Inyange industries observed risk assessment procedures as functionality of internal control of the manufacturing company. The results in table 4.12 shows that INYANGE Industries is profitable during the covered period because the standard ratio of return on asset is 1%, many factors are the causes of that performance but the internal control system has play s strong role through its recommendations. Table 4.13 reveals that there is relationship between internal control system and performance since the Pearson Correlation value was 0.808 and it is significant, the researcher proved that there is very strong and positive relationship between internal control system and performance.

Originality/value – All research objectives were achieved, Researcher suggests that the management of Inyange Industries should promote involvement of all level management in objectives setting of the company, so as to attract excellent internal control system.

Key words: Internal control system, performance and manufacturing companies.

Paper type: Research paper

INTRODUCTION

Internal control as comprising the plan of an organization and all the co-ordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, prorate

operational efficiency and adherence to prescribed managerial policies.” The definition of internal control is divided into financial internal control and non-financial (administrative) internal control. Financial internal control pertains to financial activities and may be exemplified by controls over company’s cash receipts and payments financing operations and company’s management of receipts and payments. Non- financial internal control on the other hand deals with activities that are indirectly financial in nature i.e. controls over company’s personnel section and its operations, fixed assets controls and even controls over laid down procedures (Reid & Ashelby, 2002).

A sound internal control system helps an organization to prevent frauds, errors and minimize wastage. Custody of assets is strengthened; it provides assurance to the management on the dependability of accounting data eliminates unnecessary suspicion and helps in maintenance of adequate and reliable accounting records. Despite the fact that internal control system is expensive to install and maintain, it gradually evolved over the years with the greatest development occurring at the beginning of 1940’s. Not only have the complexities of the business techniques contributed to this development but also the increased size of business units which have encouraged the adoption of methods which while increasing efficiency of business, acts as a safeguard against errors and frauds.

Mawanda (2008), states that “there is a general perception that institution and enforcement of proper internal control systems will always lead to improved financial performance”. It is also a general belief that properly instituted systems of internal control improve the reporting process and also give rise to reliable reports which enhances the accountability function of management of an entity. Preparing reliable financial information is a key responsibility of the management of every public company. The ability to effectively manage the firm’s business requires access to timely and accurate information.

Management’s ability to fulfil its financial reporting responsibilities depends in part on the design and effectiveness of the processes and safeguards it has put in place over accounting and financial reporting. Without such controls, it would be extremely difficult for most business organizations especially those with numerous locations, operations, and processes to prepare timely and reliable financial reports for management, investors, lenders, and other users. While no practical control system can absolutely assure that financial reports will never contain material errors or misstatements, an effective system of internal control over financial reporting can substantially reduce the risk of such misstatements and inaccuracies in a company’s financial statements (Kaplan, *et al*, 2008).

Rwanda’s manufacturing sector has been experiencing a steady growth. But every success always has its mothers and fathers, which in case of Rwanda manufacturing sector can be brought around one common denominator: National Policies. According to the report from the Ministry of Finance and Economic Planning (MINECOFIN, 2015), the industrial sector grew by 6% during 2013/2014, compared to 12% in the 2012/2013. The construction and manufacturing sector with 5% growth, and beverages which grew at a rate of 3%. The Manufacturing sector was weakened by border issues with DRC which hindered trade in beverages in particular.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Yusuf & Kanj (2020), for some time now, the success of manufacturing industries has attracted the attention of academicians and other professionals. The identifying the key success factors of manufacturing firms’ performance allows for designing of tailored policies and strategies that will improve the overall performance of the sector, Ali, Farhanah, Ayop, Ghani & Hasnan (2020). Despite the increased attention in the running of the manufacturing sector in Rwanda today, performance in some areas have appeared to be below expectations,

According to J Jones, M. J. (2008) there are 2 types of internal controls. Preventive Controls are designed to discourage errors or irregularities from occurring. They are proactive controls that help to ensure

departmental objectives are being met. Examples of preventive controls are: Segregation of Duties: Duties are segregated among different people to reduce the risk of error or inappropriate action. Normally, responsibilities for authorizing transactions (approval), recording transactions (accounting) and handling the related asset (custody) are divided. Frigo & Mark L. (2002) Approvals, Authorizations, and Verifications: Management authorizes employees to perform certain activities and to execute certain transactions within limited parameters. In addition, management specifies those activities or transactions that need supervisory approval before they are performed or executed by employees. A supervisor's approval (manual or electronic) implies that he or she has verified and validated that the activity or transaction conforms to established policies and procedures. Security of Assets (Preventive and Detective): Access to equipment, inventories, securities, cash and other assets is restricted; assets are periodically counted and compared to amounts shown on control records, Khan, Zhang & Salik (2020).

The internal control system must be monitored. This element of an internal control system is associated with internal audit, as well as general supervision. It is important that deficiencies in the internal control system should be identified and reported up to senior management and the board of directors (Treba. L. M. 2003).

Monitoring Activities: Ongoing evaluations, separate evaluations, or some combination of the two are used to ascertain whether each of the five components of internal control, including controls to affect the principles within each component, is present and functioning. Ongoing evaluations, built into business processes at different levels of the entity, provide timely information. Separate evaluations, conducted periodically, will vary in scope and frequency depending on assessment of risks, effectiveness of ongoing evaluations, and other management considerations. Findings are evaluated against criteria established by regulators, standard-setting bodies, or management and the board of directors, and deficiencies are communicated to management and the board of directors as appropriate (Hayes R. 2005).

The organization selects, develops, and performs ongoing and or separate evaluations to ascertain whether the components of internal control are present and functioning:

The management of an entity needs to evaluate the internal control of the firm to determine whether the components are not only present but also functioning. It can achieve this end by taking the following approaches; Periodically Reviewing the Mix of Monitoring Activities, establishing a Baseline, Identifying and Using Metrics, Designing and Implementing a Dashboard, Using Technology to Support Monitoring Activities, Conducting Separate Evaluations, Using Internal Audit to Conduct Separate Evaluations and Understanding Controls at an Outsourced Service Provider

H01: Control environment does not significantly affect the financial performance of Inyange limited

This is sometimes referred to as the 'tone at the top' of the organization. It describes the ethics and culture of the organization, which provide a framework within which other aspects of internal control operate. The control environment is set by the tone of management, its philosophy and management style, the way in which authority is delegated, the way in which staff are organized and developed, and the commitment of the board of directors, Anyim, (2020).

Reid, K., & Ashelby, T. (2002). The control environment has been defined by the Institute of Internal Auditors as: 'The attitude and actions of the board and management regarding the significance of control within the organization. The control environment provides the discipline and structure for the achievement of the primary objectives of the system of internal control.

The control environment, as established by the organization's administration, sets the tone of an institution and influences the control consciousness of its people. Leaders of each department, area or activity establish a local control environment. This is the foundation for all other components of internal control, providing

discipline and structure. Control environment factors include: Integrity and ethical values; the commitment to competence; Leadership philosophy and operating style and the way management assigns authority and responsibility, and organizes and develops its people.

According to Amudo, A., & Inanga, E. L. (2009), The following are the seven elements of the control environment: Communication and enforcement of integrity and ethical values: management's actions in communicating the organization's ethical standards to its employees. This involves management actions to remove any incentive or temptation that may induce employees to engage in dishonest, illegal or unethical acts. The communication of company policies on integrity and ethical values includes the communication of behavioral standards to employees through policy statements, codes of conduct, etc. Strengths: There is a code of ethical conduct (except in the case of small companies in which the manager closely monitors operations), and management has high integrity. Weaknesses: Management suffers from a poor reputation due to a lack of integrity (Hayes R. 2005).

Commitment to competence: management's consideration of the competence levels for particular jobs. The commitment is reflected in the consideration of how to translate those levels into requisite knowledge and skills. Strengths: Management hires competent staff who possess the knowledge and skills needed to perform the job duties. Weaknesses: Management employs incompetent or inexperienced staff for senior or inappropriate positions, Anh, Thi, Quang & Thi (2020).

Participation by those charged with governance: a company's control consciousness is significantly influenced by those charged with governance (board of directors and/or audit committee). However, the effectiveness of those charged with governance depends on their level of independence and experience and the extent of their scrutiny over activities. The status and recognition of governance bodies is also important. Strengths: There is an active board of directors with an audit committee taking the highest level of responsibilities charged with governance. Members of the audit committee are independent non-executive directors. Weaknesses: A company does not have an internal audit department (Manasseh, P. N., 2007).

Management's philosophy and operating style: management's awareness of and response to risks, financial reporting, information processing, accounting functions and personnel. Strengths: A conservative management will more likely be prudent in preparing the financial reports, thus enhancing the truth and fairness of the financial statements. Weaknesses: An aggressive (risk-taking) management attitude will tend to achieve window dressing and manipulation of profits by selecting inappropriate accounting principle (Hayes R. 2005).

Organizational structure: establishes key areas of authority and responsibility and sets appropriate lines of reporting.

This is a framework within which a company's activities needed to achieve its objectives are planned, executed, controlled and monitored. Strengths: A client in a high-technology industry operates an agile organizational structure. Weaknesses: A company's divisions may operate as autonomous units with little monitoring.

Assignment of authority and responsibility: formal communication of authority and responsibility and making these clearly known to all personnel. This can be done through formal organizational and operating plans and employee job descriptions. Strengths: Clear job descriptions are provided. Weaknesses: There is a lack of policies and communication about job responsibilities among personnel (Mukopi, C. M. & Iravo, A. M. 2015).

Human resources policies and practices: human resource policies and practices demonstrate important matters in relation to the control consciousness, for example, a company's policies and practices of

recruiting the most qualified individuals, training, evaluating, promoting and compensating employees. Strengths: A company has sound human resources policies. Weaknesses: Inadequate human resources policies lead to incompetent people being hired to fit incompatible positions, inefficiencies in task accomplishment and errors in the provision of information, etc.

H02: Risk assessment does not significantly affect the financial performance of Inyange limited

There is a connection between the objectives of an organization and the risks to which it is exposed. In order to make an assessment of risks, objectives for the organization must be established. Having established the objectives, the risks involved in achieving those objectives should be identified and assessed, and this assessment should form the basis for deciding how the risks should be managed (Reid, K., & Ashelby, T. 2002).

Ejoh, N. O. & Ejom, P. E. (2014) Proper risk management and internal control help organizations understand the risks they are exposed to, put controls in place to counter threats, and effectively pursue their objectives. They are therefore an important aspect of an organization's governance, management, and operations. Professional accountants can and should play a leading role in helping their organizations achieve an integrated, organization-wide approach to risk management and internal control which ultimately helps create, enhance, and protect stakeholder value.

Organizations face a wide range of uncertain internal and external factors that may affect achievement of their objectives whether they are strategic, operational, or financial. The effect of this uncertainty on their objectives can be a positive risk (opportunities) or a negative risk (threats). *Risk management* focuses on identifying threats and opportunities, while *internal control* helps counter threats and take advantage of opportunities.

Proper risk management and internal control assist organizations in making informed decisions about the level of risk that they want to take and implementing the necessary controls to effectively pursue their objectives. Risk management and internal control are therefore important aspects of an organization's governance, management, and operations. Successful organizations integrate effective governance structures and processes with performance-focused risk management and internal control at every level of an organization and across all operations. However, risk management and internal control are not objectives in themselves. They should always be considered when setting and achieving organizational objectives and creating, enhancing, and protecting stakeholder value (Hayes R. 2005).

Evaluating and improving risk management and internal control is among the core competencies of many professional accountants and, within organizations, many are partnering with other functions to design, plan, implement, execute, and monitor. In addition, professional accountants are often responsible for providing objective, accurate, and timely information and analyses to support all of these activities. They can also organize risk management and internal control training sessions and establishing an understandable, common risk and control language that meets professional and technical standards. Professional accountants

play a leading role in ensuring that risk management and internal control form an integral part of an organization's governance system. With an integrated, organization-wide approach, professional accountants can also encourage treating risks in a more holistic, comprehensive way, ensuring that all business decisions are based on proper risk assessment and management that defines the overall effect of uncertainties on the organization's objectives.

H03: Control activities do not significantly affect the financial performance of Inyange limited

These are policies and procedures that ensure that the decisions and instructions of management are carried out. Control

activities occur at all levels within an organization, and include authorizations, verifications, reconciliations, approvals, segregation of duties, performance reviews and asset security measures. These control activities are commonly referred to as internal controls (Abdi, A. D. 2015).

Control activities are the policies, procedures, techniques, and mechanisms that help ensure that management's response to reduce risks identified during the risk assessment process is carried out. In other words, control activities are actions taken to minimize risk. The need for a control activity is established in the risk assessment process. When the assessment identifies a significant risk to the achievement of an agency's objective, a corresponding control activity or activities is determined and implemented (Manasseh, P. N., 2007).

Control activities can be preventive or detective: Preventive activities are designed to deter the occurrence of an undesirable event. The development of these controls involves predicting potential problems before they occur and implementing procedures to avoid them.

Detective activities are designed to identify undesirable events that do occur and alert management about what has happened. This enables management to take corrective action promptly. Internal control activities can be incorporated into the following: Policies, Procedures, Sequences or combinations of procedures, Assignments of duties, responsibilities, and authorities, Physical arrangements or processes and combinations of the above (Hayes R. 2005).

Control activities occur at all levels and functions of the agency. Management should establish control activities that are effective and efficient. The cost of the control activity should not exceed the cost that would be incurred by the agency if the undesirable event occurred. Management should build control activities into business processes and systems as the processes and systems are being designed. Adding control activities after the development of a process or system is generally more costly. The allocation of resources among control activities should be based on the likelihood and impact of the risk. For any given risk, there may be multiple appropriate control activities that can be put into place, either individually or in combination with other control activities and excessive use of controls could impede productivity.

Davidson, R. *et al* (2015). The following are descriptions of some commonly used control activities. This is not an exhaustive listing of the alternatives available to management.

Authorization: Control activities in this category are designed to provide reasonable assurance that all transactions are within the limits set by policy or that exceptions to policy have been granted by the appropriate officials. **Review and approval:** Control activities in this category are designed to provide reasonable assurance that transactions have been reviewed for accuracy and completeness by appropriate personnel. **Verification:** Control activities in this category include a variety of computer and manual controls designed to provide reasonable assurance that all accounting information has been correctly captured.

Reconciliation: Control activities in this category are designed to provide reasonable assurance of the accuracy of financial records through the periodic comparison of source documents to data recorded in accounting information systems. **Physical security over assets:** Control activities in this category are designed to provide reasonable assurance that assets are safeguarded and protected from loss or damage due to accident, natural disaster, negligence or intentional acts of fraud, theft or abuse. **Segregation of duties:** Control activities in this category reduce the risk of error and fraud by requiring that more than one person is involved in completing a particular fiscal process.

Education, training and coaching: Control activities in this category reduce the risk of error and inefficiency in operations by ensuring that personnel have the proper education and training to perform their duties effectively. Education and training programs should be periodically reviewed and updated to conform to any changes in the agency environment or fiscal processing procedures.

Performance planning and evaluation: Control activities in this category establish key performance indicators for the agency that may be used to identify unexpected results or unusual trends in data which could indicate situations that require further investigation and/or corrective actions. Evaluations may be done at multiple levels within the agency, as appropriate: the agency as a whole; major initiatives; specific functions; or specific activities.

Performance reviews may focus on compliance, financial or operational issues. For example, financial reviews should be made of actual performance versus budgets, forecasts and performance in prior periods (Manasseh, P. N., 2007).

Although control activity procedures are not intended to increase staffing levels, acceptable procedures are to be established and followed which may require changes in existing workloads and/or additional staff position(s). However, a periodic thorough internal review of control activities may identify policies and procedures that are no longer required. It is recognized that some small to medium size operations may not be able to institute internal control procedures on the same level as larger, more complex agencies. In those cases, where staffing may prohibit or restrict the appropriate segregation of duties, management must either have more active oversight of operations or utilize personnel from other units to the extent possible as compensating controls.

METHODOLOGY

The study adopted descriptive analysis. The analysis used the frequency, proportion and percentage that computed on each variable under the study. Further, for the variables measured on Likert scale the analysis used means and standard deviation that were computed for each item and for the total scores. The results for Likert scale questions interpreted as suggested by Agresti and Franklin (2008). In the same way without contradicting Agresti and Franklin (2008), Freanckel & Wallen (2006) propose that if the variables are measured on Likert scale, the analysis should be performed with means and standard deviation as such. The results for Likert scale questions interpreted as mean and standard deviation.

Where Mean (\bar{x}): is the average value calculated by adding up the values of each case for a variable and dividing by the total number of cases.

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n x_i$$

Where, \bar{x} = mean; n = number of total of respondents;

x_i = scale value of respondents

Interpretation of the mean: mean as descriptive statistical for measuring central tendency of distributions was evaluated based on the following intervals and equivalences:

$1.0 \leq \mu \leq 1.8$: Very low mean i.e. the fact is not apparent

$1.9 \leq \mu \leq 2.6$: Low mean i.e. the fact is it appears less

$2.7 \leq \mu \leq 3.4$: Neutrality

$3.5 \leq \mu \leq 4.2$: High mean i.e. the fact appears more

$4.3 \leq \mu \leq 5$: Very high mean

Standard deviation (SD): is a value which indicates the degree of variability of data. It indicates how close the data is to the mean. The formula of standard deviation is:

Where,

$$(S) = \sqrt{S^2} \quad \text{Where, } S^2 = \frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{X})^2$$

Further, if the standard deviation is great than 0.5 it is concluded that responses were heterogeneity and if standard deviation is less than or equal to 0.5 the responses are homogeneity (Agresti and Franklin and Agresti, 2008).

$\sigma \leq 0.5$ Homogeneity of responses

$\sigma > 0.5$ Heterogeneity of responses

Bi -Variate analysis

Deborah J. Rumsey (2016) To assess the relationship between two numerical variables, the correlation analysis performed. Indeed, the *correlation* analysis consists of computing the correlation coefficient r that is used to measure the strength and direction of a linear relationship between two variables. A correlation can only indicate the presence or absence of a relationship, not the nature of the relationship since **correlation is not causation**. With bi-variate analysis, the researcher performed Pearson's correlation coefficient. Pearson's correlation coefficient is a statistical measure of the strength of a monotonic relationship between paired data. In a sample it is denoted by r_s and is by design constrained as follows: $-1 \leq r_s \leq 1$. Correlation is an effect size and so it helps to describe the strength of the correlation using the following guide as shown.

Interpretation of Correlation Coefficient

$r_s = 1$: Perfect correlation

$0.9 \leq r_s < 1$: Very strong correlation (or very high correlation)

$0.7 \leq r_s < 0.9$: Strong correlation (or High correlation)

$0.5 \leq r_s < 0.7$: Moderate correlation

$r_s < 0.5$: Weak (low) correlation

$r_s = 0$: Absence of correlation

Inferential statistics

The inferential statistics were used to analyse the relationship between the study variable and to approve the study hypothesis. A multi-regression model was used to analyse the relationship study variable. The relationship was considered strong if the Pearson correlation coefficient is above 50% and the variables were considered significant if the P-value is below 5%.

FINDINGS

This section presents analyses and interprets the data collected from both primary and secondary sources.

Control environment practice in Inyange limited

The results in the table below show the control environment management practices in Inyange limited

Table 4.4: Univariate analysis on control environment

Control Environment	Mean	Std. Deviation
Organization has an accounting and financial management system	4.5490	0.50254
Management is committed to the operation of the system	4.4118	0.57189
Management closely monitors implementation of Internal control systems in our institution	4.5098	0.57871
Management provides feedback to the junior officers about the operation of the system	4.5294	0.50410
Appropriate measures are taken to correct misfeasance in operation of Accounting & Finance Management System	4.7255	0.45071
Management acts with a great degree of integrity in execution of their roles	4.7647	0.42840
Ethical values are upheld in all management decisions	4.5686	0.64047
Organization has an objective, independent and active audit committee	4.4902	0.64413
Board of directors and its committees are independent of Management	4.8824	0.32540

Source: Primary data, 2022

Control Environment is the set of standards, processes, and structures that provide the basis for carrying out internal control across the organization. The board of directors and senior management establish the tone at the top regarding the importance of internal control including expected standards of conduct.

From the above findings, it was observed that Inyange industries carried out control environment. From the results, Inyange Industries organization has an accounting and financial management system (M=4.5490, S.D=0.50254) means there is very high mean and heterogeneity of responses, Management is committed to the operation of the system(M=4.4118, S.D=0.57189) means there is very high mean and heterogeneity of responses, Management closely monitors implementation of Internal control systems in our institution(M=4.5098, S.D=0.57871) means there is very high mean and heterogeneity of responses, Management provides feedback to the junior officers about the operation of the system(M=4.5294, S.D=0.50410) means there is very high mean and heterogeneity of responses, Appropriate measures are taken to correct the problem in operation of Accounting & Finance Management System(M=4.7255, S.D=0.45071) means there is very high mean and homogeneity of responses, Management acts with a great degree of integrity in execution of their roles(M=4.7647, S.D=0.42840) means there is very high mean and homogeneity of responses, Ethical values are upheld in all management decisions(M=4.5686, S.D=0.64047) means there is very high mean and heterogeneity of responses, Organization has an objective, independent and active audit committee(M=4.4902, S.D=0.64413) means there is very high mean and heterogeneity of responses, Board of directors and its committees are independent of Management(M=4.8824, S.D=0.32540) means there is very high mean and homogeneity of responses.

Inyange industries mitigate control difficulties relating to new employees by implementing sound hiring and training policies for employees. In Inyange Industries, control environment is assigned to separate employees with the proper level of authority. It is important to ensure that the responsibilities align with the employee's position and any one employee does not have too much power. It was concluded that manufacturing firms carried out control activities as a functionality of internal control of the manufacturing companies.

Risk assessment practices in of Inyange industries

In an effective internal control system, the following work to support the achievement of an entity's mission, strategies and related business objectives with regard to the risk assessment within Inyange industries.

Table 4.5: Univariate analysis on risk assessment

Risk Assessment	Mean	Std. Deviation
Management has defined appropriate objectives for the organization	4.8431	0.36729
Management identifies risks that affect achievement of the objectives	4.8039	0.40098
Management has a criterion for ascertainment of which fraud-related	4.5882	0.49705
Management has put in place mechanisms for mitigation of critical risks that may result from fraud	4.9216	0.27152

Source: Primary data, 2022

Risk assessment issues include the quality of linkages between risk assessment and response; need to demonstrate and document how professional judgement was applied; and definition, determination and understanding of ‘significant risk’ under the International Standards on Auditing.

From the above findings, it was observed that Inyange industries carried out regular risk assessment procedures. From the results, Management has defined appropriate objectives for the organization (M=4.8431, S.D=0.36729) means there is very high mean and homogeneity of responses, Management identifies risks that affect achievement of the objectives (M=4.8039, S.D=0.40098) means there is very high mean and homogeneity of responses, Management has a criteria for ascertainment of which fraud-related (M=4.5882, S.D=0.49705) means there is very high mean and homogeneity of responses, Management has put in place mechanisms for mitigation of critical risks that may result from fraud (M=4.9216, S.D=0.27152) means there is very high mean and homogeneity of responses.

It was also established that the management of Inyange Industries had put in place mechanisms for mitigation of critical risks that may result from fraud. These results are clear indication that Inyange industries observed risk assessment procedures as functionality of internal control of the manufacturing company.

Control activities practices in Inyange industries

In an effective internal control system, the following work to support the achievement of an entity’s mission, strategies and related business objectives with regard to the risk assessment within Inyange industries.

Table 4.6: Univariate analysis on control activities

Control Activities	Mean	Std. Deviation
Organization has clear separation of roles	4.7843	0.50254
Every employee’s work check on the others	4.8235	0.38501
Corrective action is taken to address weaknesses	4.5686	0.60844
Staff are trained to implement the accounting and financial management system	4.7255	0.60261
Organization has a well-developed Chart of Accounts	4.7451	0.44014
It is impossible for one staff to have access to all valuable information without the consent of senior staff	4.6667	0.62183
Controls are in place to exclude incurring expenditure in excess allocated funds	4.4902	0.50488
Departments have budget reviews where actual expenditure is compared with budgeted expenditure and explanations for the variances given	4.5686	0.50020
Security system identifies and safeguard organizational Assets	4.5882	0.49705

Source: Primary data, 2022

Control activities occur at all levels and functions of Inyange industries. Control activities can be preventive or detective: Preventive activities are designed to deter the occurrence of an undesirable event. The development of these controls involves predicting potential problems before they occur and implementing procedures to avoid them. Detective activities are designed to identify undesirable events that do occur and alert management about what has happened. This enables management to take corrective action promptly.

From the above findings, it was revealed that control activities were carried out regularly by Inyange industries. The findings showed that organization has clear separation of roles(M=4.7843, S.D=0.50254) means there is very high mean and heterogeneity of responses, Every employee’s work check on the others(M=4.8235, S.D=0.38501) means there is very high mean and homogeneity of responses, Corrective action is taken to address weaknesses(M=4.5686, S.D=0.60844) means there is very high mean and heterogeneity of responses ,Staff are trained to implement the accounting and financial management system(M=4.7255, S.D=0.60261) means there is very high mean and heterogeneity of responses, Organization has a well-developed Chart of Accounts(M=4.7451, S.D=0.44014) means there is very high mean and homogeneity of responses, It is impossible for one staff to have access to all valuable information without the consent of senior staff(M=4.6667, S.D=0.62183) means there is very high mean and heterogeneity of responses, Controls are in place to exclude incurring expenditure in excess allocated funds(M=4.4902, S.D=0.50488) means there is very high mean and heterogeneity of responses, Departments have budget reviews where actual expenditure is compared with budgeted expenditure and explanations for the variances given(M=4.5686, S.D=0.50020) means there is very high mean and heterogeneity of responses, Security system identifies and safeguard organizational Assets(M=4.5882, S.D=0.49705) means there is very high mean and homogeneity of responses.

It was concluded that Inyange industries carried out control activities as a functionality of internal control of the manufacturing companies.

Performance of Inyange industries Ltd during the period of the study

Trend of net income

In the analysis of financial information, trend analysis is the presentation of amounts as a percentage of a base year. Using the restated amounts from trend analysis makes it much easier to see how effective and efficient the company has been during the recent years.

Table 4.7: Trend of net income

Years	Net income	Change	Percentage
2018	711,628,175	–	–
2019	835,465,419	123,837,244	17.4
2020	864,503,873	29,038,454	3.4
2021	995,425,486	36,858,689	4.2

Source: Financial statements of INYANGE industries 2018-2021

According to the table above the net income of INYANGE industries increased during the period 2018 to 2021. The increase of income in 2018 was 17.4% to 2017, in 2019 there is an increase of 3.4% to 2020 and in 2021 net income increased of 4.2% to 2021. The net income shows how INYANGE industries minimize the expenses. Because the net income of the company necessitates the level of cost engaged. Internal control involved in minimizing expenses by reducing level of errors and frauds because errors and frauds reduce net income of company and also in safeguarding of assets as those are used to generate income that is why level of income had increase during the period of the study due to effective internal control system.

Net Profit Margin

Net margin ratio is a profitability ratio that compares the net margin of a business to the net sales. This ratio measures how profitable a company sells its inventory or merchandise. In other words, the net profit ratio is essentially the percentage mark up on merchandise from its cost.

Table 4.8: Net Profit Margin

Years	Net income	Turnover	Net Profit Margin Ratio
2018	711,628,175	2,928,567,547	24.2
2019	835,465,419	2,945,547,498	28.3
2020	864,503,873	2,970,039,504	29.1
2021	995,425,486	3,203,251,603	31

Source: Financial statements of Inyange industries 2018-2021

The table 4.8 shows that net profit margin ratio from 2018 up to 2021 the ratio is 24.4%, 28.3% 29.1% and 31% respectively 2018, 2019, 2020 and 2021. This means that 2018 for 100rwf of sales it has got 24.2rwf, in 2019 for 100rwf of sales it has gotten 28.3 rwf , 2020 for 100rwf of sales has got 29.1 Rwf and in 2021 for 100 rwf of sales has got 31 rwf. Many factors are origin of that performance is the main quality of products and the recommendation given by internal control are the main cause of the increase of its performance.

Return on Assets

The return on assets ratio, often called the return on total assets, is a performance ratio that measures the net income produced by total assets during a period by comparing net income to the average total assets. In other words, the return on assets ratio or ROA measures how efficiently a company can manage its assets to produce profits during a period.

Table 4.9: Return on Assets

Years	Net Income	Total Asset	ROA
2018	711,628,175	10,872,506,313	6.54
2019	835,465,419	12,934,867,082	6.45
2020	864,503,873	13,086,497,318	6.6
2021	995,425,486	13,256,562,632	7.5

Source: Financial statements of INYANGE industries 2018-2021

The table 4.9 shows the return on assets ratio during the covered period. From 2018 up to 2021 the ratio is 6.54%, 6.45%, 6.6% and 7.5% respectively. This means that, in 2018 for 100 rwf of investment, INYANGE industries will get 6.54 rwf of benefit, in 2019 for 100 rwf of investment, INYANGE industries will get 6.45 rwf of benefit, in 2020 for 100 rwf invested it has got 6.6 rwf and in 2021 INYANGE industry has got rwf from 100 rwf invested. The above results show that INYANGE Industries is profitable during the covered period because the standard ratio of return on asset in 1% many factors are the causes of that performance but the internal control system has play s strong role through its recommendations.

Return on Equity

The return on equity ratio or ROE is a profitability ratio that measures the ability of a firm to generate profits from its shareholder’s investments in the company. In other words, the return on equity ratio shows how much profit each dollar of common stockholders’ equity generates.

Table 4.10: Return on Equity

Years	Net Income	Total Equity	ROE
2018	711,628,175	4,823,467,951	14.7
2019	835,465,419	5,709,384,673	14.6
2020	864,503,873	7,280,469,211	18
2021	995,425,486	7,300,325,125	13.6

Source: Financial statements of INYANGE industries 2018-2021

The table 4.10 shows the return on equity ratio is most important of the entire financial ratio to investors in the company. It measures the return on the money that the investors have put into the company. This is the ratio potential investors look at when deciding whether or not to invest in the company. From 2018 up to 2021 the ratio of return on equity was 14.7%, 14.6%, 18% and 13.6% respectively. This means that in 2018 for 100 rwf investors has put into business brought 14.7 rwf, in 2019 for 100 rwf investors has put into the business has got 14.6 rwf , in 2020 for 100 rwf investors has put into the business has got 18 rwf and in2021 the investors has got 13.6 rwf from 100 rwf invest in Inyange Industries.

Inferential statistics

This section shows the relationship between the study variable which are internal control system and financial performance of Inyange limited.

Table 4.11 Correlations between internal control system and financial performance

		ROA	ROE	NPM	Control environment	Risk assessment	Control activities
ROA	Pearson Correlation	1	.184	.036	.710	.621	.519
	Sig. (2-tailed)		.062	.019	.024	.022	.032
	N	103	103	103	103	103	103
ROE	Pearson Correlation	.804	1	.716	.693	-.659	.644
	Sig. (2-tailed)	.062		.028	.050	.055	.060
	N	103	103	103	103	103	103
NPM	Pearson Correlation	.736	.616*	1	-.534	.463	-.738
	Sig. (2-tailed)	.719	.028		.031	.025	.001
	N	103	103	103	103	103	103
Control environment	Pearson Correlation	.710	.693	-.534	1	-.017	.139
	Sig. (2-tailed)	.004	.050	.031		.863	.160
	N	103	103	103	104	104	104
Risk assessment	Pearson Correlation	.621	-.659	.463	-.017	1	.014
	Sig. (2-tailed)	.022	.055	.025	.063		.089
	N	103	103	103	104	104	104
Control activities	Pearson Correlation	.519	.644	-.738	.139	.014	1
	Sig. (2-tailed)	.032	.060	.001	.000	.009	
	N	103	103	103	103	103	103

. Correlation is significant at the 0.05 level (2-tailed).

Source: Survey data 2022

Table 4.11 shows the correlation between the study variables. The dependent variable was measured using return on assets (ROA), return on equity (ROE), and the net profit margin (NPM).

The findings from the survey show there is a positive and significant correlation between control environments, risk assessment, control activities and the return on assets since the P-value is below 5% and the Pearson correlation coefficient for control environment, control activities and risk assessment is above 50%. Furthermore, the results indicated that control environment and control activities are positively correlated with the return on equity but risk assessment is negatively correlated with the return on equity.

Thus, the results show significant positive correlation between control environment, control activities with the return on equity as indicated by the Pearson coefficient of 69.3 and 64.4 with a P-value less than 5%. The results further indicated a negative and significant correlation between control environment and control activities with the net profit margin as indicated by Pearson coefficient of 53.4% and 73.1 % respectively and positive correlation between risk assessment and net profit margin was observed with a P-value of 0.001 and Pearson coefficient of 46.3%.

Contribution of control environment on financial performance of Inyange limited

The first objective of the study analysed the contribution of control environment and financial performance

of Inyange limited. The determinants of control environment were feedback system, existence of financial accounting system, monitoring the internal control system, existence of the internal control system and committeemen to the system. On the other hand, the financial performance was measured using the return on equity. The findings are presented in the tables below:

Table 4.12 Model Summary contribution of control environment and financial performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.760 ^a	.578	.520	0.91599

a. Predictors: (Constant), Feedback system, Existence of financial accounting system , Monitoring the internal control , Existence of internal control, Committeemen to the system

Table 4.12 shows the relationship between the study variables. Findings show that there is a strong relationship between control environment and financial performance of Inyange limited as indicated by R- square of 0.578 and adjusted R-square of 52.0%. This means that of the variation in the financial performance of Inyange limited, 57.8% is caused by control environment and only 42.2% is caused by other factors which were not tested in the model.

Therefore, the researcher rejected the null hypothesis and accepted the alternative hypothesis.

Tale 4.13 ANOVA^a : Internal control environment and financial performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.912	2	12.596	6.412	.000 ^b
	Residual	356.088	100	3.561		
	Total	382.000	102			

a. Dependent Variable: ROE

b. Predictors: (Constant), Feedback system, Existence of financial accounting system , Monitoring the internal control , Existence of internal control, Committeemen to the system

In the table 4.13, the researcher tested the significance of the model to test the relationship between the study variables. The from the survey show a P-value of 0.000 which implies that the model is significant to predict the relationship between the study variables.

Table 4.14: Coefficients^a of control environment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.302	5.424		2.821	.006
	Existence of financial accounting system	-.597	.287	-.227	-2.081	.040
	Committeemen to the system	1.261	.301	.273	4.189	.000
	Monitoring the internal control	.839	.396	.310	2.121	.036
	Existence of internal control	.280	.072	.053	3.888	.001
	Feedback system	.386	.277	.162	1.395	.166

a. Dependent Variable: ROE

Table 4.14 shows the significance of the determinants of control environment in predicting the relationship between the study variables. The findings from the survey show that existence of financial accounting system; committeemen to the system, monitoring the internal control system and existence of internalcontrol system are statistically significant as indicated by a P-value which is less than 5%. The results

further indicated a positive correlation between existence of financial accounting system, commitment to the system, monitoring the internal control system and existence of internal control system and financial performance of Inyange limited. The results further indicated that feedback of the system is not statically significant at 5%.

Contribution of risk assessment on financial performance of Inyange limited

The second objective examined the contribution of risk assessment on the financial performance of Inyange limited. Risk assessment which is the independent variable was measured using Identification of risks, Measurement of risks, Monitoring risks and controlling risks while financial performance was measured using the return on assets (ROA).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.747 ^a	.558	.518	.75298

a. Predictors: (Constant), Controlling risks , Measurement of risks, Identification of risks , Monitoring risks

Table 4.15 shows the relationship between risk analysis and financial performance of Inyange limited. Findings show that there is a strong and positive relationship between risk assessment and financial performance of Inyange limited as indicated by R-square of 0.558 and adjusted R-square of 51.8.0%. This means that of the variation in the financial performance of Inyange limited 55.8% is caused by riskassessment only 44.2% is caused by other factors which were not tested in the model. Therefore, the researcher rejected the null hypothesis and accepted the alternative hypothesis.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.216	4	14.54	8.539	.000 ^b
	Residual	273.784	98	2.794		
	Total	332.000	102			

a. Dependent Variable: ROA
b. Predictors: (Constant), Controlling risks , Measurement of risks, Identification of risks , Monitoring risks

In the table 4.19 the researcher tested the significance of the model to test the relationship between risk assessment and financial performance. The results from the survey show a P-value of 0.000 which implies that the model is significant to predict the relationship between the study variables.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.910	4.339		5.281	.000
	Identification of risks	.163	.014	.142	11.643	.000
	Measurement of risks	.717	.057	.175	12.579	.000
	Monitoring risks	-.427	.016	-.103	-2.669	.012
	Controlling risks	-.038	.08	-.119	-4.750	.002

a. Dependent Variable: ROE

In table 4.20 the researcher tested the significance of the determinants of risk assessment in predicting the relationship between the study variables. The findings from the survey show that Identification of risks, Measurement of risks, Monitoring risks and controlling risks are statistically significant as indicated by a P-value which is less than 5%. The results further indicated a positive correlation between risk identification, measurement of risks and financial performance of Inyange limited. The results further indicated negative and significant relationship between monitoring risks, controlling risks and financial performance

Contribution of control activities on the financial performance of inyange limited

The third objective of the study aimed at analyzing the contribution of control activities on the financial performance of Inyange limited. The findings are presented in the tables below:

Table 4.21 Model Summary: contribution of control activities on financial performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.841 ^a	.707	.610	.54481

a. Predictors: (Constant), Authorization , Separation of roles , Recording

In the table 4.21 the researcher tested the contribution of control activities on the financial performance of Inyange limited. The findings from the survey show that there is a strong relationship between control activities and financial performance of Inyange limited as indicated by R-square of 0.707 and adjusted R- square of 61.0%. This means that of the variation in the financial performance of Inyange limited, 70.7% is caused by control activities and only 29.3% is caused by other factors which were not tested in the model. Therefore, the researcher rejected the null hypothesis and accepted the alternative hypothesis

Table 4.22 ANOVA^a Control activities model fitness

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.554	3	9.185	7.666	.000 ^b
	Residual	354.446	99	3.782		
	Total	382.000	102			

In the table 4.22, the researcher tested the significance of the model to test the relationship between control activities and financial performance. The findings from the survey show a P-value of 0.000 which implies that the model is significant to predict the relationship between the study variables

Table 4.23 Coefficients^a of determinants of control activities

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	20.695	3.117		6.639	.000
	Separation of roles	-.113	.015	-.059	-7.533	.000
	Recording	.775	.113	.181	6.858	.000
	Authorization	.270	.247	.130	1.093	.277

a. Dependent Variable: ROE

In table 4.23 the researcher tested the significance of the determinants of control activities in predicting the relationship between the study variables. The findings from the survey show that there is a positive and significant relationship between recording of transaction and financial performance as indicated by a p-value of 0.000. The results further indicated a negative and significant relationship between separation of roles and financial performance as evidenced by a P-value of 0.000.

The results further indicated a positive correlation between authorization and financial performance but the correlation is not statistically significant as indicated by a P-value which is greater than 5%.

General model

The general objective of the study was to determine the contribution of internal control system on the financial performance of Inyange limited. The findings are presented in the table below:

Table 4.24 Model Summary: Contribution of internal control system on financial performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.803 ^a	.645	.612	.72332

a. Predictors: (Constant), Control activities, Risk assessment, Control environment

In the table 4.24 the researcher tested the contribution of internal control system on the financial performance of Inyange limited. The findings from the survey show that there is a strong relationship between internal control system and financial performance of Inyange limited as indicated by R-square of 0.645 and adjusted R-square of 61.2%. This implies that of the variation in the financial performance of Inyange limited, 64.5% is caused by internal control system and only 34.5% is caused by other factors which were not tested in the model.

Table 4.24 ANOVA^a Fitness of model of internal control system

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.785	3	18.617	11.422	.000 ^b
	Residual	326.215	99	3.295		
	Total	382.000	102			

a. Dependent Variable: ROE
b. Predictors: (Constant), Control activities, Risk assessment, Control environment

In the table 4.24, the researcher tested the fitness of the model to test the relationship between internal control system and financial performance of Inyange limited. The findings from the survey show a P-value of 0.000 which implies that the model is significant to predict the relationship between the study variables

Table 4.25 Coefficients^a : Determinants of internal control environment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	23.135	2.519		9.184	.000
	Control environment	.162	.044	.191	3.682	.001
	Risk assessment	-.056	.012	-.060	-4.667	.000
	Control activities	.045	.019	.021	2.368	.031

a. Dependent Variable: ROE

In table 4.25 the researcher tested the significance of the determinants of internal control system in predicting the relationship between the study variables. The findings from the survey show that there is a positive and significant relationship between control environment, control activities and financial performance as indicated by a p-value of 0.001 and 0.031 respectively. The results further indicated a negative and significant relationship between risk assessment and financial performance as evidenced by a P-value of 0.000.

CONCLUSION AND RECOMMENDATION

It was observed that Inyange industries carried out control environment. From the results, Inyange Industries organization has an accounting and financial management system (M=4.5490, S.D=0.50254) means there is very high mean and heterogeneity of responses, Management is committed to the operation. It was observed that Inyange industries carried out regular risk assessment procedures. From the results, Management has defined appropriate objectives for the organization (M=4.8431, S.D=0.36729) means there is very high mean and homogeneity of responses, Management identifies risks that affect achievement of the objectives (M=4.8039, S.D=0.40098) means there is very high mean and homogeneity of responses. The findings showed that organization has clear separation of roles (M=4.7843, S.D=0.50254) means there is very high mean and heterogeneity of responses, Every employee's work check on the others (M=4.8235, S.D=0.38501) means there is very high mean and homogeneity of responses.

Internal auditing department should be regarded as a good place to develop employees' careers, because internal auditors can understand the whole operation in organization. Management should establish a system of quality control designed to provide reasonable assurance that Inyange industries management and its personnel comply with regulatory and legal requirements. The study also suggest that Inyange industries establishes and manages knowledge/information management system within the institution so as to enable all parties within company to freely access and utilize the official information.

Area of further research

Due to time and financial constraints the researcher could not cover the whole contribution of internal control system to the performance of manufacturing companies in Rwanda. Therefore, future researchers recommend further study in areas like: The contribution of internal control system to total quality management in manufacturing companies in Rwanda. The impact of internal control system to brand image of manufacturing companies in Rwanda.

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