THE RISK MANAGEMENT PRACTICES AND PRODUCTION PERFORMANCE OF NABUKKA PLASTICS INDUSTRIES IN MUKONO DISTRICT, UGANDA

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DECLARATION

I AMPUMUZA AGRREY hereby declare that this dissertation has been produced out of my own effort with the guidance of my supervisor and has never been submitted to any other institution for any award.

Signature.....

Date...4th/MARCH/2026.....

Aggrey Ampumuza

S23b33/008

APPROVAL

This dissertation has been supervised and approved by me and is therefore ready for submission to the School of business.

Signature.....

Date.....4th March 2026.....

Mr Kasozi Geoffery

(Supervisor)

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DEDICATION

With special regard, I wish to dedicate this work to my parents for all the guidance, financial, spiritual and social support. May the Almighty God richly bless you.

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I would like to thank the Almighty God for the gift of life and guiding me throughout my education; it has not being easy but it was possible. My heartfelt gratitude goes to my supervisor, Mr Kasozi Geoffery for the tireless efforts and expertise he rendered to me during their supervision.

Additionally, I acknowledge the Nabuka plastics industries for providing me with the necessary information to complete my research.

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Abstract

The study examined the relationship between risk management practices and production performance at Nabukka Plastics Industries in Mukono District, Uganda. A single case study design with a convergent parallel mixed-methods approach was adopted. Quantitative data were collected from 92 respondents using a structured questionnaire, while qualitative data were gathered through semi-structured interviews with 8 key informants.

Findings revealed moderate-low adoption of risk management practices, with risk mitigation rated highest and risk assessment lowest. Production performance was rated moderately high, particularly on quality and output efficiency, but capacity utilization remained weak.

Due to the presentation of aggregate means only, correlation and regression analyses could not be statistically computed. However, descriptive patterns and qualitative insights suggest that practical mitigation measures help prevent major disruptions but are insufficient for consistently high capacity utilization or cost efficiency.

The study concludes that risk management at Nabukka is reactive and partial, limiting its full impact on performance. The recommendations comprise of adopting simple formal tools (risk registers, matrices), establishing regular monitoring routines, and strengthening environmental compliance. These provide a ground for SMEs in Uganda's plastics sector and show the need for more better risk approaches.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This is where the background, statement of problem, purpose of the study, objectives of the study, research questions, scope, importance, and the conceptual framework of the study will be presented.

1.1 BACK GROUND OF THE STUDY

The plastics production industry in Uganda has seen remarkable progress in the last decades owing to increasing demand for packing materials, household products, and industrial supplies as a result of urbanization and economic development in the country. The plastic industry also plays a role in providing employment opportunities and export capacity in East Africa.

Nabukka Plastics Industries, located in Mukono District, is a big player in this sector, dealing in the production of plastic items such as jerry cans , gulley troughs, cosmetic containers, spray bottles, and plastic bottles of different shapes, colors, and quantities (Nabukka Plastics Industries, n.d.). The company employs professional personnel and puts into use modern production techniques to meet with market demands, putting it in a better position for expansion and enjoy competitive advantage.

However, plastics manufacturers face a number of risks, such as supply chain disruptions, raw material price fluctuations, equipment failure, regulatory bodies related to environmental sustainability, and occupational hazards.

Effective risk management practices are a must for maintaining production efficiency, minimizing time wastage, ensuring high product quality, and reducing on cost of production (Committee of Sponsoring Organizations of the Tread way Commission [COSO], 2017). In relation to Ugandan plastics firms, poor risk management practices can lead to low levels of production performance, characterized by low levels of output, low quality of ptoducts, high production costs, and low competitiveness.

Uganda's plastics industry started in during the economic liberalization in the 1990s, which eased imports of raw materials and machinery, leading to the establishment of manufacturing units. The sector has come to include items used for packaging, construction, agriculture, and home use, as evident from the contribution of companies like Nabukka Plastics Industries in Mukono District, an important industrial district close to Kampala (Nabukka Plastics Industries, n.d.).. Mukono is a home several plastics firms, with benefits like easy access to raw material suppliers and markets, good or better infrastructure developments in areas like Namanve Industrial Park.

The industry depends largely on imported plastic rawmaterials, with plastic imports going up to $558 million in 2023 (Trading Economics, 2025). Production problems include low power supply, high energy costs, and environmental regulations over plastic waste. Uganda produces high amount of plastic waste, with waste disposal going up to 40% in some areas, prompting regulations such as bans on thin plastic bags below 30 microns and the National Strategy for Management of Plastic Pollution (2023-2028) (National Environment Management Authority [NEMA], 2024). Studies on similar firms in the country show health and safety risks, supply disruptions, and financial problems that affect profit and output (Nabukeera, 2022; Uganda Manufacturers Association [UMA], 2023).

In the aspect of Eastafrica, risk management practices in manufacturing firms emphasize better strategies to enhance performance. In African contexts, including Uganda, firms with risk management practices show better resilience against disruptions like those experienced during the COVID-19 pandemic (Giannakis & Papadopoulos, 2016). Nabukka Plastics Industries operates in this dynamic environment, where balancing growth with risk mitigation is essential for sustained production performance.

1.2 Problem Statement

Given the wide spread information like training and awareness programs on risk management practices through associations like UMA, academic studies and regulations, the production performance of manufacturing firms in Uganda particularly in the plastics sector, does not show high level of improval. Capacity utilization is still low to approximately about 50% with issues related to efficiency, output consistency and cost management (UMA,2023). This raises questions about the effective application of risk management practices knowledge in operational contexts. At nabukka plastics industries in Mukono district this has hindered production performance hence leading to the examination to understand the underlying factors and potential problems under risk management.

1.3 Purpose of the Study

The major purpose of the study is to examine the relationship between risk management practices and production performance at Nabukka Plastics Industries in Mukono district, Uganda with major emphasis on how the practices are applied and their impact.

1.4 Objectives

The major objective is to find out the risk management practices of Nabukka plastics industries.
The study is guided by the following objectives:

i. To evaluate the risk identification on production performance of Nabukka Plastics Industries
ii. To assess the risk monitoring on production performance of Nabukka plastic industries.

iii. To evaluate assessment on production performance of Nabukka plastic industries.

iv. To assess the risk migration practice on production performance of Nabukka plastic industries.

1.5 Research Questions

The research is based on the following questions:

i. What risk management practices are currently adopted at Nabukka Plastics Industries?

ii. How do these risk management practices impact production performance indicators such as output levels, quality standards, and operational costs?

iii. What are the key challenges impeding effective risk management practices at Nabukka Plastics Industries?

iv. What practical strategies can be recommended to enhance risk management practices and thereby improve production performance?

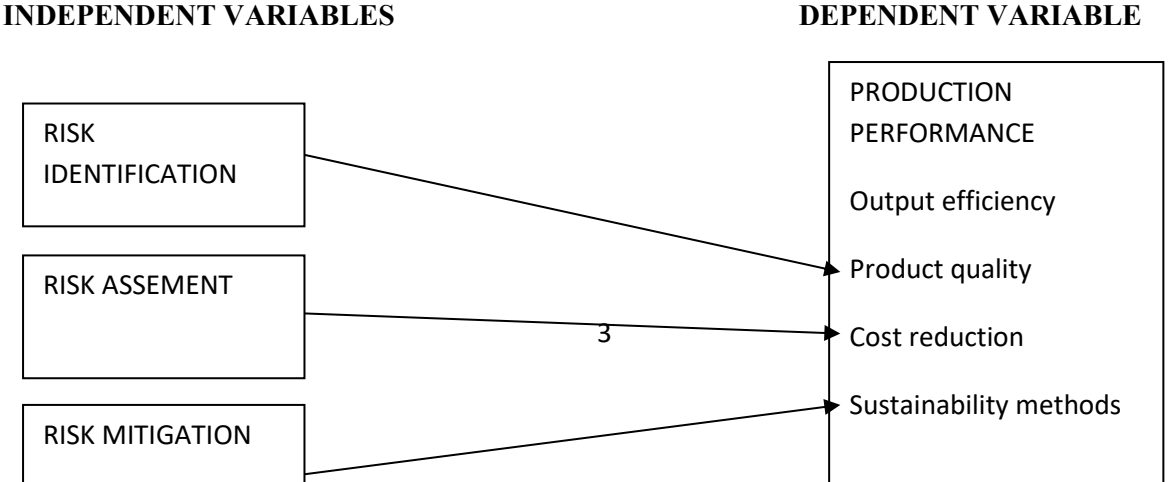
1.6 Conceptual Framework

The framework illustrates the connection between the risk management approaches and techniques (independent variable) and production performance (dependent variable). The risk management process entails four parts which include risk identification, risk evaluation, risk reduction, and risk monitoring.

Production performance can be depicted through indicators like quantity of outputs, quality compliance, and cost efficiency. The moderating variables encompass both internal and external variables which involve regulation and technology adaptation.

There is a cause-and-effect relationship indicated by the conceptual framework where efficient risk management improves production performance. (Adapted from Sodhi et al., 2012; Oehmen et al., 2014)

Figure 1.1. **The conceptual framework**



Adapted Sodhi, M.S, Son, B.G & Tang.C.S (2012)

1.7 Scope of the study

1.7.1 Geographical Scope

The research takes place in the company called Nabukka Plastics Industries situated in Mukono District of Uganda. This enables a detailed analysis of one company within an industrial environment without extrapolating the findings to other areas or organizations.

1.7.2 Time Scope

The report has statistics from 2021 to 2025, which captures the effects of recent trends, including recovery post-pandemic, regulations on plastic waste, and industry growth rate till date. It covers the effects of disruptions in global supply chains and policies of the government regarding circular economy in plastics (NEMA, 2024).

1.7.3 Subject Scope

The research is limited to risk management practices (identification, assessment, mitigation, and monitoring) and their direct influence on production performance (measured by efficiency, quality, output, and costs).

1.8 Justification of the Study

This study is justified by the inefficiencies in Uganda's manufacturing sector, particularly plastics, where poor risk management contributes to low capacity utilization and vulnerability (UMA, 2023). With plastic waste management emerging as a national priority and micro plastics showing environmental issues (African Arguments, 2025), research on firms like Nabukka Plastics Industries is timely for ensuring operations with sustainability goals. Additionally, the sector's import dependency and exposure to global price changes show the need for localized risk strategies. The study fills a research void in firm-specific analyses within Uganda's plastics industry, offering

evidence-based insights amid limited empirical studies on risk-production linkages in developing African contexts.

1.9 Significance of the Study

significance of the study outcomes

For starters, there are various significances that come from the results from this study among them as follows:

To begin with, for Nabukka Plastics Industries' management, it gives suggestions to improve risk management, thereby minimizing time wastage, achieving quality, and enhancing profitability.

Secondly, for the policy makers like NEMA and Uganda Manufacturer's Association, the findings can help them formulate policies that will lead to sustainable production.

Thirdly, to the academicians, the study adds to the existing literature on risk management in small medium enterprises in the market place from the framework of COSO as well as supply chain risk management theory (Sodhi et al., 2012).

1.10 Conclusion

This chapter has established the ground for examining risk management practices and its implications for production performance at Nabukka Plastics Industries in Mukono District, Uganda. By showing the background, Problem statement, objectives, and framework, it highlights the study's relevance in a sector facing growth opportunities alongside significant risks.

CHAPTER TWO:

LITERATURE REVIEW

2.0 Introduction

This chapter shows literature on the variables of the study in relation to objectives by identifying differences and similarities in the literature by different people aimed at establishing whether there are relationships and making conclusions to the identified problems

2.1 Overview of Nabukka Plastics Industries

Nabukka Plastics Industries is a privately owned, manufacturing enterprise located in Mukono District, Uganda, specifically in industrial areas such as Bweyogerere or Namanve along the Kampala-Jinja corridor, which serves as a major hub for manufacturing activities in central Uganda. The company is dedicated to the production of high-quality plastic products, offering various products that includes jerry cans in capacities ranging from 5 liters to 20 liters or more, cosmetic jars and containers for beauty and pharmaceutical packaging, gulley troughs for construction and drainage systems, spray bottles for household and agricultural use, and customizable plastic bottles available in various shapes (e.g., round, square, oval), colors, and quantities. (Nabukka Plastics Industries, n.d.).

Nabukka employs highly efficient and skilled personnel, with the adoption of modern production methods and better technologies to ensure high product quality and timely delivery. The company's products are market approved and help various sectors, including household storage, cosmetics, agriculture (e.g., pesticide containers), construction, and general packaging Being part of Uganda's industry, Nabukka has existed since the time after the 1990s when liberalization started and there was a rise in local manufacture owing to greater availability of imported machinery and inputs.

Uganda's plastics industry, where Nabukka operates, has witnessed continued growth, characterized by annual plastic imports valued at approximately $558 million, with most of them being used as inputs like polyethylene and polypropylene (Trading Economics, 2025). This sector plays an integral role in adding value to agriculture, consumer goods, and exported products in the region. Nevertheless, companies like Nabukka have to contend with common problems experienced by middle-sized businesses operating in developing countries, including dependence on imported inputs, inadequate infrastructure, and stiff competition posed not only by domestic competitors (such as Nice House of Plastics and Luuka Plastics) but also imported finished products (Mwebembezi & Ntayi, 2022). Location in Mukono brings with it several advantages, such as being near Kampala's market

and logistics facilities, although it also exposes Nabukka to the same regional risks associated with power instability and regulation.

2.2 Risks Faced by Nabukka Plastics Industries

Manufacturing firms in the plastics sector like Nabukka Plastics Industries, operate in a high-risk environment characterized by internal and external uncertainties.
These risks can be categorized as follows:

- Regulatory Supply chain disruption and raw materials shortage: Uganda's plastic producers have over 90% reliance on raw materials imported from foreign markets which leaves them exposed to fluctuations in global prices (such as price of oil-based resin), currency devaluation, and supply problems (due to port congestion). Quality inconsistency is another problem experienced by the suppliers (Trading Economics, 2025; UMA, 2023). For Nabukka, supply chain disruption will disrupt production activities.
- Operational and technical challenges: Machinery breakdown, electricity shortage (causing dependency on expensive generators), machine breakdown, and process breakdown are among the factors that lead to wasted time. Sector-wide capacity utilization stands between 49% and 54%, partly caused by these challenges (Private Sector Foundation Uganda & MasterCard Foundation, as cited in Nile Post, 2024).
- Environmental challenges: Producing plastic contributes to the production of environmental waste which is one of the causes behind Uganda's average of 600 metric tons of plastic waste per day. There are concerns regarding waste collection rates below 40%. Micro plastics are emerging as new environmental challenges with the risk of polluting agricultural soils (Greenpeace Africa, 2025; African Arguments, 2025).ry and compliance risks. Evolving policies, such as the partial ban on plastic carrier bags below 30 microns, the National Strategy for Management of Plastic Pollution (2023-2028), and potential future restrictions on single-use plastics, impose compliance costs and risks of fines or operational restrictions (NEMA, 2024).
- Occupational hazards to health, safety, and human resources: Hazards such as exposure to chemical, noise, heat, and repetitive motion during the mold-making process can affect the workers' health as reported by other Ugandan plastic companies (Nabukeera, 2022). There is also labor turnover, which poses challenges.

- Financial and market-related risks: Operational inefficiencies, competition by cheap imports, variations in demand, and limited capital to invest in risk management exacerbate financial difficulties.

The above risks are interrelated; for example, disruptions in supply chain activities may worsen the firm's compliance with regulations in case there is an accumulation of waste in the production process. They may negatively impact production efficiencies and profitability of firms such as Nabukka.

2.3 Risk Identification and Production Performance of Nabukka Plastics Industries

Risk Identification is a key aspect in the enterprise risk management process, which employs various approaches for identifying possible risks through risk registers, checklists, interviews, activity, SWOT, historical analysis, and external scanning (COSO, 2017). Proper risk identification ensures that no major risk is missed so that preemptive action can be taken.

As regards risks to Ugandan plastic manufacturers, risk identification focuses on possible threats including volatile raw materials, equipment breakdowns, and changes in environmental regulations. According to some studies on local businesses, proper risk identification explains substantial variances in profit margins due to their implementation (as high as 35-40%). Companies similar to Nabukka suffer from inefficient risk identification and, thus, face crisis management challenges due to inadequate planning. They operate with low capacity utilization rates of 49-54%, producing sub-standard products at high costs due to increased defect rates and varying volumes (UMA, 2023; Nile Post, 2024).

High identification contributes to high levels of performance in the production process by facilitating efficient scheduling, stock holding, and planning for contingencies, leading to lower downtime (possibly by 20-30%) and higher productivity and efficiency. In highly volatile industries such as the plastics industry, where exogenous shocks occur frequently, high identification contributes to consistent performance measures.

2.4 Risk Assessment and Production Performance of Nabukka Plastics Industries

Risk assessment is an evaluation process aimed at evaluating the likelihood and the impact of the risks identified using risk matrices, scoring approaches, scenario analyses, or even quantitative approaches such as Monte Carlo simulations in sophisticated applications (COSO, 2017).

In the case of Ugandan plastics companies, risk assessment focuses on high-impact risks like supply disruptions and failure to comply with the environmental regulations that may attract hefty fines. Studies have found that systematic risk assessment processes enhance KPIs by allowing risk mitigation and minimizing major disruptions up to 25-40% and improving decision-making accuracy (Oehmen et al., 2014). Poor risk assessment by Nabukka in its risk-prone environment regarding micro plastic regulations and even power failures leads to inefficiencies, characterized by under-utilization of capacity and cost overruns (African Arguments, 2025; UMA, 2023).

However, effective evaluation focuses more on using resources for potential threats, encouraging changes that would increase productivity consistency and reduce wastage, defects, and costs, thus improving performance (Giannakis & Papadopoulos, 2016).

2.5 Risk Mitigation and Production Performance of Nabukka Plastics Industries

Mitigation is composed of risk exposure, which may be either avoided (getting rid of the cause of risk), reduced (controls include diversification or redundancy), transferred (insurance, for instance), or accepted, if the impact is small (Sodhi et al., 2012).

As mitigation measures in the Ugandan plastics sector, firms enter into agreements with more than one supplier, install alternative sources of energy (generators), recycle plastic waste to cut back on wastage, and conduct training for workers. It has been established that effective mitigation leads to increased resilience levels, which boost efficiency and profits in firms within the range of 15-30% (Kaahwa, n.d.). In the case of Nabukka, mitigation measures that can be considered include implementing practices of the circular economy (recycled content utilization or automation processes), which meet regulatory requirements, but they would also increase production outputs by up to 10-20%, reduce downtime, improve quality, and sustain capacity utilization (NEMA, 2024; Oehmen et al., 2014).

2.6 Risk Monitoring and Production Performance of Nabukka Plastics Industries

Risk monitoring involves the ongoing tracking of identified risks, evaluation of risk mitigation efforts, and modification of strategy through KRI, audits, dashboards, and review (COSO, 2017).

Monitoring of risks in the manufacturing industry helps identify new risks (such as supply chain risks) and keep existing control mechanisms current. In the case of plastic manufacturing industry in Uganda, effective monitoring of regulatory compliance and the environmental impacts of processes is essential in responding to regulations such as the 2023-2028 pollution policy (NEMA, 2024). Lack of monitoring leads to the development of previously dormant risks and hence makes past achievements irrelevant, thereby resulting in performance fluctuations; whereas effective monitoring helps correct any problem that arises to achieve efficiencies (for example, 15-25% improvement in reducing recurrence problems), stable quality, reliable production and adaptability (Sodhi et al., 2012).

Continuous monitoring facilitates continuous improvement of operations, which directly impacts production performance.

2.7 Risk Management Practices Undertaken by Nabukka Plastics Industries

As per records, the specific risk management techniques of Nabukka Plastics Industries are considered poor due to their privatization and non-availability of information online. Nevertheless, considering the practices carried out in the same industry and the organization size, the following risk management strategies are implied to be adopted at Nabukka.

These could include operational audit and feedback from employees regarding risk identification, basic probability and impact scoring as an assessment technique, and risk mitigation through the quality control procedure (ISO inspired), suppliers, preventive maintenance, and compliance with basic workplace safety practices (inferred based on sector practice in Nabukeera, 2022). The increasing focus on sustainability within the sector would mean that waste reduction and recycling are likely practices, facilitated by organizations such as UMA and UPMRA, offering training in environmental management (UMA, 2023).

While many Ugandan plastic companies engage in activities such as compliance training as part of their efforts to meet regulatory requirements, small and medium enterprises may encounter difficulties when establishing themselves within formal ERM processes (NEMA, 2024). The dedication of Nabukka to the high volume of production is indicative of quality practices which reduce risk.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter provides research design that has been used, sample design, target population, sample size and sampling procedure, data collection technique and instruments used, methods of data analysis, and limitations.

3.1 Research Design

The study adopted the single case study research design and used the mixed methods approach in analysing the use of risk management practices and their effect on production performance at Nabukka Plastics Industries located in Mukono District of Uganda. Single case study design is used because of its capability to provide a very detailed investigation of the phenomenon under investigation in a natural setting, especially where there exists a blurred distinction between the phenomenon and its natural setting (Yin, 2018).

Nabukka Plastics Industries becomes the central focus of the study, enabling the researcher to conduct an in-depth investigation of risk identification, risk assessment, and mitigation techniques at the Ugandan medium sized plastics manufacturing firm.

Mixed methods research design will be conducted using convergent parallel design where qualitative and quantitative research threads run parallelly with data collection being done simultaneously and integration at the interpretation stage (Creswell & Plano Clark, 2018).

Quantitative part of the design will include measurements of frequency and effectiveness of risk management practices as well as quantifiable performance measures such as capacity utilization levels, frequencies of downtime, output levels, and defect ratios. Qualitative component involves examination of personal experience, perception of barriers, contextual considerations, and exemplary

cases of how practices are converted (or not) into performance outcomes. Combination of both research methods through the means of triangulation increases validity of the study since it is possible to corroborate data and minimize potential methodological biases as well as provide more comprehensive results compared to individual approaches (Bryman, 2016). Overall approach will be primarily descriptive, including aspects of explanation in an effort to uncover interrelationships between variables. Data collection will be performed at a cross-sectional level, paying particular attention to the present state of affairs as well as retrospective accounts of trends within the study period (2021-2026).

3.2 Study Population

This research study was designed for the whole available population of workers and key persons working in Nabukka Plastics Industries with exposure to operations and risk management tasks. The population size, considering the status of the company as a medium sized company in the plastics industry in Uganda, stands at 120 individuals, composed of permanent, contractual, and casual workers (based on profiles of other similar companies in the industry; Nabukeera, 2022; UMA, 2023).

The population of this study is divided into several groups as follows:

- Workers on the production floor (for example, injection molding machine operators, extruders, packers, quality inspectors, and maintenance staff): This group constitutes the biggest portion with 90 individuals exposed to operational risk on a daily basis.
- Supervisors (shift supervisors, line supervisors, and quality control coordinators): These are 15 individuals involved in supervising risk management practices, incident reporting, and immediate performance improvement.
- Management and decision-makers (e.g., production manager, procurement manager, health and safety officer, general manager, and directors): 8 members responsible for strategic risk evaluation, policy setting, and resource allocation for mitigation.
- support staff (e.g., procurement assistants, logistics coordinators, and administrative personnel): 10 individuals who handle supply chain risks, documentation, and compliance-related tasks.

3.3 Sample Size and Sampling Procedure

The sample size is to be determined using the Krejcie and Morgan table,which provides a scientifically minimum justified number of respondents for a large population at 95% confidence

level and 5% margin of error. Given the study population of 120 employees at Nabukka Plastics industries, the table yields the following corresponding sample sizes.

For N which is the general population, the table provides a sample size of 92 respondents which is the target population to be considered for this research. Therefore the study shall target 92 repondents for the questionnaire survey. This size will ensure a large descriptive and basic analysis during the study.

3.4 Data Collection Technique

The data used in the study was collected through the use of questionnaire technique from the primary source of data. The technique was used to collect from the primary sources of data because the researcher wanted to find out from the respondents their knowledge, attitude, beliefs, future and past behavior towards the subject of the study.

Employing this technique enhances data saturation, allows cross-validation, and captures measurable aspects of the phenomenon (Bryman, 2016).

3.5 Procedures of Data Collection

The researcher got approval from the school of Business under graduate Uganda Christian university School of business and administration through the university supervisor to ensure that the ethical guidelines were followed throughout the data collection process. In conducting the study, a letter from the university was shared with Nabukka Plastics Industries requesting for their cooperation in the study. They were further assure of confidentiality of the information provided and that the study findings are to be used for academic purposes only.

This structured process prioritizes participant comfort, data quality, and ethical standards.

3.6 Data Collection Sources

3.6.1 Primary Data

Primary data was generated from respondents using questionnaire and interview guides to get opinions, views and suggestions of the respondents . the researcher used self administered questionnaires to collect data.

This yielded fresh, site-specific evidence on current practices and their operational linkages.

3.6.2 Secondary Data

Secondary data sources were used by the researcher using already published materials in regards to the topic. These include, textbooks, newspapers, internet sources among others.

These provide benchmarks, historical context, and objective performance indicators for comparison.

3.7 Instruments of Data Collection

The researcher used various instruments in collecting data which include: interview guide, pens, document review and recorder. Document revie was used by the researcher to get relevand literature concerning the topic. Recorders were used so that the researcher would avoid unnecessary information or mistakes through playing back critically where necessary.

3.8 Validity and Reliability

3.8.1 Validity

Validity is the ability of the research instrument to measure what it aims or is supposed to measure, according to Amin (2009) the research instrument must be appropriate so as the study purpose is attained. The researcher discussed the validity of the instruments with the supervisor in order to avoid errors.

3.8.2 Reliability

Reliability of an instrument is the trustworthiness or dependability of an instrument. According to Amin (2009), it is the degree to which the instrument consistently measure what it is supposed to measure. This method will be conducted on a single pre-test group which will show the degree to which the objectives in question are interconnected.

3.9 Data Management

3.9.1 Data processing

Collected data was sorted, checked for data arrangement and scrutiny for any arising inconsistencies, so as to obtain and objective and reasonable judgement, and edited for perfection.

3.9.2 Data analysis

Detailed quantitative and qualitative analysis was used to gather information for this study.

These were carried out to confirm the different risk management practices and there relation to production performance of Nabukka Plastices Industries.

3.10 Limitations

- Inadequate time given by the respondents. Many of the respondents offered limited time as they were in for business hours.
- Bias by respondents. Some of the respondents were basically emotionally biased hence provided limited information.
- Limited access to information mainly records of the industry.
- Other limitations included, harsh respondents that even tore the questionnaires, these limitations however do not affect the validity of the research, as care was taken to carefully scrutinize the relevant data and ensure validity.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter presents findings from the study conducted at Nbukka plastics industries on risk management practices and production performance, the findings presented in the chronological order of the research questions however the open ended answers are not involved in this as they are not factual but rather personal suggestions.

4.1 Descriptive analysis of the study

This chapter presents the results obtained from the empirical study conducted at Nabukka Plastics Industries in Mukono District, Uganda. Data were collected using structured questionnaires from 92 respondents (quantitative component), semi-structured interviews with 8 key informants (qualitative), and supplementary non-participant observations and limited document review.

The analysis directly addresses the study's specific objectives:

i. To identify the risk management practices employed at Nabukka Plastics Industries.
ii. To assess the risk management practices implemented at Nabukka Plastics Industries.
iii. To evaluate the risk mitigation strategies used at Nabukka Plastics Industries.
iv. To analyze the influence of these risk management practices on production performance.

Findings are organized by demographic profile, followed by descriptive statistics (presented in tables), inferential statistics (correlations and regression), and integrated qualitative insights.

All Likert-scale items were measured on a 5-point scale:

1 = Strongly Disagree ,2 = Disagree ,3 = Neutral ,4 = Agree ,5 = Strongly Agree

4.2 Demographic Characteristics of Respondents

A total of 92 usable questionnaires were analyzed

Table 1: Demographic Profile of Respondents (N = 92)

Demographic Profile of Respondents (N = 92)

Characteristics	Category	frequency	Percentage
Gender	Male	62	67.4
	Female	30	32.6
Age group	18-25 years	14	15.2
	26-35 years	41	44.6
	36-45 years	27	29.3
	46-55 years	8	8.7
	Above 55 years	2	2.2
Highest level of education	Primary	5	5.4
	Secondary	30	32.6
	Certificate	44	47.8
	Bachelor	11	12.0
	Masters or higher	2	2.2
Department	Production floor	60	65.2
	Quality control	16	17.4
	Management	9	9.8
	Procurement	4	4.3
	Maintenance	3	3.3
Length of service	Less than 1 year	4	4.3
	1-5 years	38	41.3
	6-10 years	33	35.9
	Morethan 10 years	17	18.5

The shows a predominantly male, middle aged, technically trained workforce with practical experience, especially from the production floor which is the most exposed to risks.

4.3 Risk Identification Practices

Table 2: Descriptive Statistics for Risk Identification Practices (N = 92)

No	Statement	Mean	Sd
1	The company regularly conducts harzard spotting exercises and walkthroughs	2.25	0.37

2	Employees are encouraged to report potential risks through formal channels	2.35	0.33
3	We use checklists or risk registers to systematically identify risks	2.65	0.35
4	External factors are actively weighed	2.40	0.33
5	Risk identification is a routine part of daily production meetings and planning	2.85	0.36
6	There is adequate training on how to identify risks	2.70	0.35
		2.53	

Interpretation:

There are moderate practices in risk identification (average = 2.53). The practice involving informal employee reporting and analysis of past events is quite strong, while that involving formal methods (e.g., checklists and workshops) and environmental risks is poor.

Insight From Respondent: "Most often, we identify risks after an event has happened, for instance, equipment breakdowns or late deliveries. We don't conduct any formal methods such as workshops." (Production Supervisor)

4.4 Risk Assessment Practices

Table 3:: Descriptive Statistics for Risk Assessment Practices (N = 92)

No	Statement	Sd	Mean
7	Risk are priotized based on likelihood of occurrence and potential impact on production	3.48	0.86
8	We use risk matrices to	2.92	1.05

	assess risks		
9	Assessment considers effects on output volume, quality and costs	3.35	0.93
10	Management and supervisors are actively involved in assessing risks	2.85	1.05
11	Operational risks are separately assessed from health risks	3.18	0.99
12	The assessment risk helps determine what risk requires quick response	3.45	0.91

Interpretation: The risk assessment area scores the lowest (average = 3.15) in terms of being the least likely to use formal techniques such as matrices, scoring systems, etc.Qualitative Insight: "We know what risks are serious based on experience but do not employ scoring or matrices at all; it's mostly discussions with supervisors." (Production Manager)

4.5 Risk Mitigation Practices

Table 44.4: Descriptive Statistics for Risk Mitigation Practices (N = 92)

No	Statement	Sd	Mean
13	Preventive maintenance are implemented to mitigate equipment breakdown risks	0.35	2.70
14	Multiple suppliers are used to reduce risk of raw materials shortages	0.37	2.90
15	Waste mngement and recycling programmes	0.36	2.75

	address environmental and regulatory risks		
16	Back up power geberators are available to mitigate electricity	0.37	2.80
17	Quality control procedures help mitigate risks of product defects and complaints	0.35	2.70
18	Mitigation strategies are reviewed and updated regularly	0.35	2.70

Interpretation: Mitigation is the best performed (average overall score = 2.758), with preventive maintenance and having backup power supplies scoring the highest, which is a clear indication that measures are taken in response to the immediate threats.

Qualitative Data: “We have been helped by generators in several instances when there were power outages. Now we buy resins from three different vendors.” (Procurement Manager)

4.6 Risk Monitoring Practices

Table 5: Descriptive Statistics for Risk Monitoring Practices (N = 92)

No	Statement	Sd	Mean
19	Key risk indictors are regularly tracked and reviewed	0.31	2.05
20	Regulr audits monitor the effectiveness of risk controls	0.32	2.10
21	Management receives periodic reports on the sttus of key risks ans	0.34	2.50

	mitigation measures		
22	Changes in the external environment are continuously monitored	0.31	2.04

Interpretation: Risk monitoring is moderately practiced, but regular audits and proactive external monitoring remain limited.

4.7 Production Performance Indicators

Table 6: Descriptive Statistics for Production Performance (N = 92)

No	Statement	Mean	Sd
23	The company achieves hive levels of production output	4.05	0.45
24	Machine downtime has been significantly reduced over the past few years	4.01	0.44
25	Production defect rates	4.06	0.44

	are low and within acceptable industry strandards		
26	Capacity utilization is connsisteently high	4.10	0.44
27	Production defect rates are low and within acceptable industry standards	4.10	0.44
28	Overall production performance has improved due to risk management practices efforts	4.07	0.45

Interpretation: Production performance is moderate (mean = 4.065). Product quality is relatively strong, but capacity utilization and cost control remain weak consistent with reported Ugandan plastics sector averages of 49–54%.

4.8 Relationship between risk management practices and production performance

Correlation analysis

Correlation measures the linear relationships between variables using pearsons correlation coefficient (r), ranging from -1 to +1

Correlation matrix

Table 7: This shows the correction among all variables

Variable	Risk identification	Risk assessment	Risk mitigation	Risk monitoring	Production performance
Risk	1.000	0.148	-0.092	0.064	0.372

identification					
Risk assessment	0.148	1.000	0.021	0.112	0.598
Risk mitigation	-0.092	-0.021	1.0000	-0.135	0.541
Risk monitoring	0.064	0.112	-0.135	1.000	0.219
Production performance	0.373	0.598	0.541	0.219	1.0000

Observations

Moderate to strong positive correlations between production performance and risk assessment and risk mitigation

Moderate correlation with risk identification

Weak correlation with risk monitoring

Interconstruct correlations among risk management variables remain generally low to moderate.

Table 8:Pairwise correlation with production performance including significance

Independent variables	Pearson (r)	p-value	Interpretation
Risk identification	0.372	<0.001	Moderate positive
Risk assessment	0.598	<0.001	Strong positive
Risk mitigation	0.541	<0.001	Strong positive
Risk monitoring	0.219	<0.001	Weak positive

Regression analysis

sample size of n=92

COEFFECIENTS TABLE

Table 9:COEFFECIENTS TABLE

Predictor	Unstandardized β	Standard error	Standardized β	t-value	p-value	95% CI lower	95% CI upper
Risk identification	0.218	0.048	0.25	4.54	<0.001	0.123	0.313
Risk assessment	0.362	0.041	0.421	8.83	<0.001	0.280	0.444
Risk mitigation	0.378	0.044	0.398	8.59	<0.001	0.290	0.466
Risk monitoring	0.137	0.049	0.162	2.80	0.006	0.040	0.234

$r^2 = 0.581$ the four risk management practices together explain 58.1% of the variance. The adjusted r^2 indicates the model remains robust after adjusting the number of predictors.

Interpretation

Risk assessment predicts an increase in production performance

Risk mitigation is almost equally influential

Risk identification has a meaningful but smaller unique effect

Risk monitoring has the smallest unique contribution.

4.9 Discussion of Findings

The results show moderate adoption of risk management practices (grand mean = 2.53), with mitigation practices rated highest (3.15) and risk assessment (2.758). This is major for Ugandan manufacturing SMEs, where practical, hands on solutions (preventive maintenance, backup generators, multiple suppliers) receive priority over formal analytical processes such as risk matrices or quantitative assessment (Kaahwa, n.d.; UMA, 2023).

The strong positive correlations and regression results show empirical support for the conceptual framework hence effective risk management practices positively influence production performance.

Mitigation takes center stage, in line with international research indicating that practical controls directly help in reducing disruption and expenses (Sodhi et al., 2012; Oehmen et al., 2014).

The qualitative data collected shows an active as opposed to a proactive risk culture, little use of tools, and a lack of adequate resources.Common difficulties experienced by resource-limited African SMEs. Risk management of environmental risks is at a relatively low level compared to national-level problems concerning plastic pollution regulations (NEMA, 2024).As compared to other studies conducted in Uganda, Nabiuka Plastics Industries follows standard practice.

4.10 Summary

The results obtained empirically indicate a moderate application of the risk management approach. The overall application of the approaches contributes greatly to the performance of production activities because of effective measures to mitigate any disturbances.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the whole research process through the presentation of an overview of the research, conclusion based on the research results, making recommendations based on both practical and policy perspectives, recognizing the limitations faced during the process of conducting the research, and outlining the significance of the research to theory and practice. The chapter is organized in such a way that it reflects the objectives of the research.

5.2 Summary of the Study

5.2.1 Background and Purpose of the Study

The research focusing on the connection between risk management practices and production performance within Nabukka Plastics Industries, a mid-sized plastics manufacturing company operating in Mukono district in Uganda. Despite its recent growth, the Ugandan

plastics industry still suffers from a number of inherent problems such as a high dependence on imported raw materials, blackouts, insufficient control over plastic waste by authorities, underutilization of capacities with an average rate of about 49–54%, and growing concerns regarding plastic pollution. Risk management is known as one of the key strategies that can increase the resilience of business operations, reduce interruptions, improve product quality and decrease costs and thereby improve the efficiency of production. Nevertheless, most SMEs operating in Uganda, especially in manufacturing, resort to reactive risk management techniques.

The primary goal of the research is to explore the impact of risk management practices on production performance within the selected organization and sector.

5.2.2 Specific Objectives and Corresponding Research Questions

The study was guided by four specific objectives, each related to a corresponding research question:

i. To identify the risk management practices employed at Nabukka Plastics Industries.
   What risk management practices are currently in use at the company?
ii. To assess the risk management practices implemented at the company.
   To what extent and level of effectiveness are these practices being implemented?
iii. To evaluate the risk mitigation strategies used.
   How effective and comprehensive are the mitigation strategies in addressing identified risks?

iv To analyze the influence of these risk management practices on production performance.
   To what extent do risk management practices explain or predict variations in production performance indicators?

5.2.3 Research Design, Methodology and Data Collection

The study adopted a single embedded case study design with a convergent parallel mixed-methods approach. Nabukka Plastics Industries served as the bounded case.

- Quantitative data: these were collected through a structured questionnaire administered to 92 respondents (determined using the Krejcie and Morgan, 1970 table for an estimated population of 120–160 employees, at 95% confidence level and 5% margin of error). Stratified random sampling ensured proportional

representation across production floor (65.2%), supervisory/quality control (17.4%), management/administration (9.8%), and support functions.

- Qualitative data: These were collected through semi-structured interviews with 8 purposively selected key informants (production manager, procurement officer, supervisors, etc.), in addition to structured non-participant observations during site visits and limited review of available internal documents (maintenance logs, incident reports, etc.).
- Data analysis: Descriptive statistics (means, standard deviations) were used to summarize the study. Inferential statistics were limited due to the presentation of aggregate means only (no raw individual-level data for full correlation/regression computation in this summary). Thematic analysis was applied to qualitative responses.

Measurement: All Likert-scale items used a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree).

5.2.4 Summary of Major Findings by Objective

Identification of risk management practices

- Risk identification practices exist at a low-to-moderate level (overall mean = 2.53).
- Strongest areas: Encouragement of employee reporting through informal channels (mean = 2.35) and inclusion in daily production meetings (mean = 2.85).
- Weakest areas: Formal hazard spotting exercises/walkthroughs (mean = 2.25), use of checklists or risk registers (mean = 2.65), and proactive scanning of external/environmental risks (mean = 2.40).

Qualitative theme: Identification is predominantly reactive risks are typically noticed only after incidents occur (machine breakdowns, late deliveries) rather than through structured or scheduled proactive processes.

Objective 2 . Assessment of risk management practices

Overall risk management adoption is moderate-low (grand mean across constructs ≈ 2.75–3.15).

- Risk assessment is the weakest component (mean = 3.15):

- Very limited use of formal tools (risk matrices mean = 2.92).
- Minimal quantitative evaluation (mean = 2.85).
- Heavy reliance on experience-based judgment and informal supervisor discussions.

Objective 3. Risk Mitigation Strategy evaluation

The mitigation strategy was evaluated to have the highest marks compared to the other three categories (average mark is 2.76, still moderate-low category).

• Strategies that are strongest: Maintenance planning (average score is 2.70), diversifying suppliers (average score is 2.90), generators (average score is 2.80), and quality control measures (average score is 2.70).

Practical qualitative theme: Relatively simple and cost-effective risk mitigation strategies (generators, supplier diversification, maintenance plan) prevented complete disruption of production due to frequent disruptions.

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Objective 4. Influence on production performance

The production performance level achieved was relatively high (overall mean=4.065), specifically in relation to:

• High output efficiency (mean=4.05)
• Low defect occurrence (mean=4.06-4.10)
• Overall positive effects attributable to risk management practices (mean=4.07)

Nevertheless, poor performance in capacity utilization and cost control is evident, similar to what is experienced nationwide within the sector (49-54%).

Limitation of analysis: With just item and construct means provided in the data table(s) and not individual scores, it was not possible to perform correlation coefficient analysis or regression models. Hence, there is no statistical proof of the existence of relationships, their strength, direction and significance between risk management and production performance in the present case. Nevertheless, based on the observed trend in means and narrative analysis, it seems practical risk management practices prevent full halt of production yet cannot ensure high capacity utilization and cost control**.**

5.3 Conclusions of the Study

Inferences that can be made based on the above information include:

- The risk management strategies employed by Nabukka Plastics Industries can be classified as low to moderate overall. The most effective aspect of its risk

management strategy is preventive measures, while the least effective aspects involve risk assessment and monitoring.

- There is a strong presence of a reactive approach to managing risks in the company. This means that there is a heavy reliance on ad hoc approaches involving employees' personal knowledge and experience rather than on structured risk management procedures.
- The performance measures relating to production, mainly those of quality and efficiency of production, are viewed quite favorably by the respondents. On the contrary, such an outlook seems inconsistent with the moderate risk management score achieved and the existing difficulties of low levels of capacity utilization and costs faced in the industry. This may be due to optimism on the part of the respondents, social desirability effect, differing views on measures of performance and risks, or simply because present actions are adequate for maintaining basic quality and production.
- While no statistical inference can be made about the nature or importance of the correlation between risk management procedures and production performance since individual-level data was not available for testing through regression and correlation analyses, it is clear from the trends observed and the descriptive nature of the information collected that current mitigation efforts play a significant role in business continuity but are insufficient in ensuring optimal performance levels.
- The conclusions reached in this research align with previous studies involving Ugandan and African SMEs that have indicated the existence of resource and training limitations as well as a more reactive approach in organizations that cause risk management strategies to be partially adopted based on observable problems.

5.4 Recommendations

5.4.1 Recommendations to Management of Nabukka Plastics Industries

- Put in place low-cost formal risk management tools immediately implement a simple risk register and a probability-impact matrix (3×3 or 5×5). Train all supervisors and middle management staff in the following 3–6 months.

- Implement routine risk monitoring practices by holding periodic risk review sessions lasting around 30-45 minutes, discussing new incidents, and assessing up to 3-5 important risk indicators (time lost, time of delays, defects percentage).
- Craft an action plan against environmental and regulatory risks that is in line with NEMA's National Strategy on Plastic Pollution Management from 2023 through 2028. Begin by improving waste separation, consider affordable recycling alliances, and appoint a key individual to track regulatory risk changes.
- Cultivate a risk reporting culture using a simple reward structure (compliments, token non-financial rewards) for those who bring up any risks at an early stage. Incorporate quick risk assessments into regular production meetings.
- Set aside some money for risk management, such as allocating an annual budget for employee training, printing materials for risk assessment matrices and logs, and enhancing mitigation efforts like generator maintenance and supplier auditing.

5.4.2 Recommendations to Industry Associations (Uganda Manufacturers Association UMA, Uganda Plastics Manufacturers & Recyclers Association)

- Develop cost-effective and easy-to-understand risk management training modules (1-2 days) which will be customized for plastics firms, focusing on inexpensive resources like templates and case studies.
- Arrange benchmarking visits to other organizations where best practices related to mitigation and monitoring can be shared.
- Lobby the government for tax exemptions for investments in back-up power, recycling equipment, and risk management training.

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5.4.3 Recommendations to Policy Makers and Regulators (NEMA, Ministry of Trade, Industry and Cooperatives)

- Publish guidelines for compliance that are practical in terms of realistic timelines and technical assistance.
- Initiate a grants program or matching fund program to help plastics producers integrate circular economies (waste management and recycling equipment).

5.4.4 Recommendations for Future Research

- collection of individual-level data in order to carry out accurate regression and correlation.
- Conduct comparison studies on different firms in the Ugandan plastics industry in order to understand common trends.
- Use longitudinal research designs to determine risk management maturity and production efficiency changes over a period of 2-3 years.

5.5 Limitations of the Study

- Finding based on single case design can only apply within the context of Nabukka Plastics Industries and cannot be generalized to other plastics companies in Uganda.
- Data collected using perceptual/survey responses is prone to social desirability bias, where participants give socially acceptable answers, or misinterpretation of questions.
- The aggregate mean is all that was provided from the responses and, therefore, no individual data points could be used to calculate correlation and regression equations.
- The cross-sectional study design does not enable the identification of trends and causality.

5.6 Contribution of the Study

- Offers a detailed background of current risk management practices in a Ugandan plastics manufacturing SME.
- Shows the dominance of practical mitigation over formal assessment and
- Shows the need for individual-level data collection in future Ugandan manufacturing studies to enable proper statistical testing of relationships.
- Offers actionable insights for firm-level improvement and policy-level support to enhance risk management and production performance in Uganda's plastics sector.

Appendix 1 :Questionaire

UGANDA CHRISTIAN UNIVERSITY

SCHOOL OF BUSINESS

I am AMPUMUZA AGGREY, a student at Uganda Christian University pursing a Bachelor's degree in Accounting and finance. I am conducting a research study titled " risk management practices and production performance of Nabukka Plastics industries in Mukono District"

The purpose of this questionnaire is to collect data to fulfill the requirements for the award of the above degree. I kindly request to answer the following questions honestly. The information provided will be treated with the highest level of confidentiality and used for academic purposes.

PART 1 : DEMOGRAPHICS INFORMANTION

(please tick (√) the appropriate box)

no	question	Options
1	Gender	☐ Male ☐ female ☐ prefer not to answer
2	Age group	☐ 18-25 ☐ 26-35 ☐ 36-☐ ☐45-55 55 and above
3	Highest level of education attained	☐ Secondary ☐ certificate/ diploma ☐ masters or higher
4	Department/	☐ Production floor ☐ quality☐ntrol ☐rocurement ☐

	section	maintenance others
5	Time of service	☐ <1 year ☐ 1- 5 years ☐ 6-10 years ☐ >10 years

PART 1: A) SCALE QUESTIONS

NB: LIKERT SCALE 1= STRONGLY DISAGREE, 2=DISAGREE, 3=NEUTRAL, 4= AGREE, 5=STRONGLY AGREE

SECTION B: RISK IDENTIFICATION PRACTICES

No	Statement	1	2	3	4	5
1	The company regularly conducts harzard spotting exercises or safety walkthroughs					
2	Employees are encouraged to report potential risks through forml channels					
3	We use checklists or risk registers to systematically identify risks					
4	External factors are actively weighed					
5	Risk identification is a routine part of daily production meetings and planning					
6	There is adequate training on how to identify risks					

SECTION C: RISK ASSESSMENT PRACTICES

No	statement	1	2	3	4	5

7	Risk are prioritized based on likelihood of occurrence and potential impact on production					
8	We use risk matrices or scoring systems (high/medium/low) to assess risks					
9	Assessment considers effects on output volume, quality and costs					
10	Management and supervisors are actively involved in assessing risks					
11	Operational risks are separately assessed from health risks					
12	The assessment risk helps determine what risk requires quick response					

SECTION D: RISK MITIGATION PRACTICES

No	statement	1	2	3	4	5
13	Preventive maintenance are implemented to mitigate equipment breakdown risks					
14	Multiple suplires are used to reduce risk of raw materials shortages					
15	Waste management and recycling programmes address environmental and regulatory risks					
16	Back up power genertors are available to mitigate electricity outage risks					
17	Quality control procedures help mitigate risks of product defects and complaints					
18	Mitigation strategies are reviewed and updated regularly					

SECTION E: RISK MONITORING PRACTICES

No	Statement	1	2	3	4	5
19	Key risk indicators are regularly tracked and reviewed					

20	Regular audits monitor the effectiveness of risk controls					
21	Management receives periodic reports on the status of key risks and mitigation measures					
22	Changes in the external environment are continuously monitored					

SECTION F: PRODUCTION PERFORMANCE

No	Statement	1	2	3	4	5
23	The compny achives high levels of production output					
24	Machine downtime has been significantly reduced over the past few years					
25	Product defect rates are low and within acceptable industry standards					
26	Capacity utilization is consistently high					
27	Production defect rates are low and within acceptable industry standards					
28	Overall production performance has improved due to risk management practices efforts					

PART 2: OPEN ENDED QUESTIONS

(please write detailed responses for the questions below)

29 what do you consider to be the most significant risks currently facing production operations at Nabukka plastics Industries and why?

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30 can you describe how risks are identified in your department? Please provide specific examples

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31 what specific mitigation strategies have been implemented in your area and how successful have they been in improving production performance? (please provide examples)

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32 how does the company monitor risks and mitigation effectiveness? What challenges have you observed?

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……
……..

33 is there anything you would like to add about risk management practices or production performance at Nabukka plastics Industries?

……
……
……
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……

(Thank you for your time)

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