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Setting the Rules: Risk Governance and Employee Efficiency in Manufacturing Firms in South-South Nigeria

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Abstract—Risk management does not end once threats are identified and treated; it depends on continuous oversight. This study examined the effect of risk monitoring and risk governance on employee efficiency among selected manufacturing firms in South-South Nigeria. A descriptive survey design was adopted. A structured questionnaire was administered to the entire population of 385 employees of four manufacturing firms (Brightway Glove, Life Flour Mill, Glosa Roofing and Senalux Paint), and 380 usable responses (98.7%) were analysed. Cronbach's alpha ranged from 0.857 to 0.950. Means, standard deviations and simple linear regression were applied at the 5% level of significance using SPSS version 25. Risk monitoring had a positive and significant effect on employee efficiency ($B = 0.163$, $\beta = 0.386$, $t = 4.539$, $p < 0.001$) and explained 14.9% of its variance ($F = 20.605$). Risk governance also had a positive and significant effect ($B = 0.160$, $\beta = 0.330$, $t = 3.793$, $p < 0.001$) but explained only 10.9% of the variance ($F = 14.390$). Both null hypotheses were rejected. Respondents' mean ratings of governance practices (2.08 for male and 2.46 for female staff) were below the 2.50 criterion, which indicates that governance arrangements are weakly felt on the shop floor even though they matter for efficiency. The study recommends continuous, employee-involving monitoring and clearer, better-communicated governance structures.

***Index Terms*—Employee efficiency, Manufacturing firms, Risk governance, Risk monitoring, South-South Nigeria.**

1. Introduction

Risk management does not end once threats have been identified and treated. Risks change as processes, markets and the environment change, and controls decay with time. Two oversight functions keep a framework alive. Risk monitoring is the continuous tracking of risks and of the effectiveness of the responses to them. Risk governance is the set of leadership roles, accountability mechanisms and policies that align risk activity with organisational goals. Research on risk governance has expanded rapidly: a systematic review of 151 papers has mapped its dimensions, relationships and outcomes (Addae et al., 2023; Eruvwe et al., 2024), and empirical work shows that features of risk governance, such as the expertise and effectiveness of risk committees, the presence of a chief risk officer and the existence of an enterprise risk management framework, shape outcomes like risk disclosure quality (Erin et al., 2023; Israel & Josephine, 2026).

Whether such oversight reaches the people who do the work is a different question. Rosdi and Kasim (2025) found that the effectiveness of risk management committees in Malaysian higher education institutions significantly influenced employee satisfaction and performance, and Rahim et al. (2024) linked risk culture to employee performance in banks and insurers. These studies come from services and education. Evidence from factory settings, and from developing economies in particular, is scarce, and monitoring and governance are rarely examined separately from the rest of the risk management cycle.

The question is pressing in South-South Nigeria, where manufacturers face operational, environmental and security-related uncertainties. If monitoring is weak and governance arrangements are unclear, employees may face ambiguity about responsibilities, late discovery of new risks and repeated disruptions, all of which erode efficiency. The study therefore tests two null hypotheses:

H_{01}: Risk monitoring has no significant effect on employee efficiency among selected manufacturing firms in South-South Nigeria.

H_{02}: Risk governance has no significant effect on employee efficiency among selected manufacturing firms in South-South Nigeria.

The article contributes employee-level evidence on the two oversight components of a risk governance framework, and it shows how employees themselves rate these components. The sections that follow review the literature and present the conceptual framework, describe the method, report and discuss the results, and conclude.

2. Literature Review and Conceptual Framework

A. Risk Monitoring

Risk monitoring and review ensure that risk responses remain effective as conditions change. It involves tracking known risks, detecting new ones, checking whether controls work and adjusting plans in good time. For employees, monitoring means faster discovery of problems, fewer repeated incidents and greater awareness of what is happening around them. Horvey and Odei-Mensah (2023), reviewing the

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measurement and performance of enterprise risk management, concluded that firms should strengthen their systems because a higher level of implementation improves performance. Manas et al. (2024) stress employee behaviour, compliance with risk protocols and organisational culture in manufacturing SMEs, which are exactly the behaviours that monitoring is meant to observe and reinforce. In manufacturing, Abeje and Luo (2023) studied how safety climate affected safety performance through employee engagement, suggesting that workers respond when attention to hazards is continuous and visible.

B. Risk Governance

Risk governance covers the structures, policies, roles and reporting lines through which an organisation decides who owns which risks and how they are reported. Rehman et al. (2021) examined risk management within corporate governance frameworks, and Addae et al. (2023) describe risk governance as a line of defence. Erin et al. (2023) show that governance features matter through their quality, not just their existence: committee expertise and effectiveness and the presence of a chief risk officer influenced disclosure quality. At the employee level, Rosdi and Kasim (2025) found that effective risk management committees raised employee satisfaction and performance, with satisfaction as the link. Weak governance, by contrast, leaves responsibilities ambiguous and undermines both risk outcomes and employee efficiency.

C. Employee Efficiency

Employee efficiency is the ability to complete tasks effectively with minimal waste of time and resources. It is reflected here in motivation to work, freedom from interruptions, access to resources and support, a manageable workload and the ability to adapt quickly to change. These aspects are shaped by the organisational environment, including how clearly risks are watched and owned (Rosdi & Kasim, 2025; Akpomiemie et al., 2026).

D. Conceptual Framework

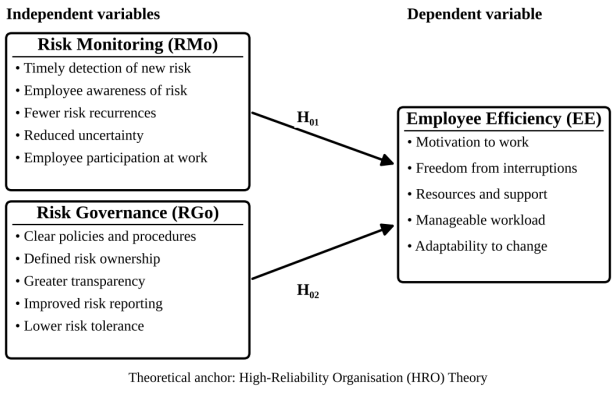


Fig. 1. Conceptual framework of the study.

Source: Researcher's Conceptualisation, 2026.

Fig. 1 presents the conceptual framework. Risk monitoring (RMo) and risk governance (RGo) are the independent variables, each represented by the five indicators measured in the questionnaire, and employee efficiency (EE) is the dependent variable. The arrows labelled H_{01} and H_{02} show the two relationships tested, each in a separate simple regression.

E. Theoretical Anchor

The study draws on High-Reliability Organisation (HRO) Theory, which grew out of studies of organisations that operate in hazardous conditions with remarkably few failures. HRO theory stresses continuous attention to small signs of failure, sensitivity to frontline operations, clear lines of responsibility and deference to expertise. Risk monitoring corresponds to the continuous attention to weak signals, and risk governance to the clear allocation of responsibility and deference to expertise. The theory predicts that employees in firms where risks are watched closely and owned clearly will work more reliably and efficiently, because surprises are fewer and responses are faster.

3. Methodology

A. Research Design, Population and Sample

A descriptive survey design was adopted because it allows data to be collected from many respondents at one point in time and reported without manipulation. The population comprised the 385 employees of four manufacturing firms in South-South Nigeria: Brightway Glove, Port Harcourt, Rivers State (145); Life Flour Mill, Sapele, Delta State (59); Glosa Roofing, Benin City, Edo State (96); and Senalux Paint, Yenagoa, Bayelsa State (85). The firms were purposively selected on grounds of proximity, cost and the security situation in the region. Because the population was small, all 385 employees were included (total enumeration), and 380 questionnaires were returned in usable form, a response rate of 98.7%.

B. Instrument, Validity and Reliability

Data were collected with a structured, self-designed questionnaire developed from the literature. Section A captured respondents' biodata, and Section B contained five items on each construct, rated on an agreement scale. Face and content validity were established through scrutiny by the supervisors and subject experts in the Department of Business Administration, Delta State University, Abraka. Reliability was assessed with Cronbach's alpha on a pilot of 30 employees in Akwa Ibom State, a state with comparable characteristics that lay outside the study sample. Table 1 shows that the three constructs used in this article exceeded the 0.70 threshold.

Table 1
Reliability of the research instrument (Cronbach's alpha)

Construct	No. of items	Alpha	Remark
Risk monitoring	5	0.950	Excellent
Risk governance	5	0.857	Good
Employee efficiency	5	0.860	Good

(Sources: Researcher's Computation, 2026)

Table 1 shows that risk monitoring ($\alpha = 0.950$) is excellent, while risk governance ($\alpha = 0.857$) and employee efficiency ($\alpha = 0.860$) are good. The items in each construct therefore measure the same underlying concept consistently. The

Table 2
Demographic characteristics of the respondents

Characteristics	Frequency	Percent
Gender		
Male	210	55.26
Female	170	44.74
Age		
Below 30 years	50	13.16
31 - 40 years	90	23.68
41 years and above	240	63.16
Educational qualification		
OND/NCE	110	28.95
B.Sc/HND	178	46.84
M.Sc/MBA	90	23.68
Ph.D	2	0.53
Total	**380**	**100.00**

(Sources: Researcher's Computation, 2026)

Table 3
Risk monitoring and employee efficiency: means and standard deviations

S.No.	Items	Male staff (n = 210)			Female staff (n = 170)		
		Mean	SD	Decision	Mean	SD	Decision
1	Leads to timely identification of new risk	3.60	0.49	Agree	3.63	0.48	Agree
2	Improves employee awareness of potential risk	3.31	0.56	Agree	2.97	0.56	Agree
3	Reduces risk recurrences	3.68	0.47	Agree	3.26	0.57	Agree
4	Reduces the level of uncertainty	2.14	0.94	Disagree	2.15	0.99	Disagree
5	Increases employee participation at work	2.99	0.62	Agree	3.21	0.57	Agree
	Cluster mean	**3.14**	**0.62**	**Agree**	**3.04**	**0.63**	**Agree**

Criterion mean = 2.50: means at or above 2.50 are read as agreement and means below 2.50 as disagreement.
(Sources: Researcher's Computation, 2026)

aggregate alpha for all six constructs in the wider study was 0.880.

C. *Method of Analysis and Model Specification*

Means and standard deviations were used to describe the responses, with 2.50 as the criterion mean. Items at or above 2.50 were read as agreement and items below it as disagreement. The hypotheses were tested with simple linear regression in SPSS version 25 at the 5% level of significance (critical t = 1.960). The two models are:

$$EE = \beta_0 + \beta_1 RMo + \mu \quad (1) \qquad (1)$$
$$EE = \beta_0 + \beta_1 RGo + \mu \quad (2) \qquad (2)$$

where EE is employee efficiency, RMo is risk monitoring, RGo is risk governance, β_0 is the intercept, β_1 is the slope coefficient and μ is the error term. A null hypothesis was rejected where the p-value was below 0.05.

4. Results

A. *Profile of Respondents*

Table 2 shows that 55.26% of the respondents were male and 44.74% were female, so both genders are well represented. Most respondents (63.16%) were aged 41 years and above, 23.68% were aged 31 to 40 years and 13.16% were below 30 years. This age profile points to an experienced workforce that has watched the firms' practices over a long period. In terms of education, the largest group held B.Sc or HND qualifications (46.84%), followed by OND/NCE (28.95%), M.Sc/MBA (23.68%) and Ph.D (0.53%). The respondents were therefore mature, literate and well placed to judge the risk practices in their firms and their own efficiency at work.

B. *Descriptive Results*

Table 3 shows agreement on four of the five risk monitoring statements, with cluster means of 3.14 for male and 3.04 for female staff, both above the 2.50 criterion. Monitoring was credited most with reducing risk recurrences (3.68 for male staff) and with timely identification of new risks (3.60 and 3.63). Awareness of potential risk was higher among male staff (3.31) than female staff (2.97). One statement fell below the criterion: respondents did not agree that monitoring reduces the level of uncertainty (2.14 and 2.15). Employees thus see monitoring as a tool for catching and preventing problems but not yet as a source of certainty about their work.

Table 4 shows a different picture for risk governance. The cluster means of 2.08 (male) and 2.46 (female) are both below the 2.50 criterion, so respondents on the whole did not agree that governance arrangements deliver clear policies, defined ownership and transparency. Only improved risk reporting (2.66 and 2.99) was rated above the criterion by both groups, and reduced risk tolerance was rated above it by female staff alone (2.54). The lowest ratings were for defined risk ownership (1.59, male) and clear policies and procedures (1.82, male). Female staff were more favourable than male staff on every item. Governance arrangements are therefore only weakly visible to employees in the sampled firms.

Table 5 gives a mixed picture of efficiency. Motivation to

Table 4
Risk governance and employee efficiency: means and standard deviations

S/N	Items	Male staff (n = 210)			Female staff (n = 170)		
		Mean	SD	Decision	Mean	SD	Decision
1	Ensures clear policies and procedures	1.82	1.14	Disagree	2.19	1.13	Disagree
2	Defines risk ownership and responsibility	1.59	0.64	Disagree	2.18	0.92	Disagree
3	Increases transparency	1.94	0.63	Disagree	2.40	0.69	Disagree
4	Improves risk reporting	2.66	0.53	Agree	2.99	0.68	Agree
5	Reduces risk tolerance	2.38	0.84	Disagree	2.54	0.82	Agree
	Cluster mean	**2.08**	**0.76**	**Disagree**	**2.46**	**0.85**	**Disagree**

Criterion mean = 2.50: means at or above 2.50 are read as agreement and means below 2.50 as disagreement.
(Sources: Researcher's Computation, 2026)

Table 5
Employee efficiency: means and standard deviations

S.No.	Items	Male staff (n = 210)			Female staff (n = 170)		
		Mean	SD	Decision	Mean	SD	Decision
1	I am always motivated to work	3.28	0.49	Agree	3.38	0.61	Agree
2	I do not experience interruptions or distractions while working	1.89	0.87	Disagree	2.39	0.82	Disagree
3	I have the necessary resources and support to complete tasks	3.01	0.96	Agree	3.10	0.80	Agree
4	My workload is manageable and achievable	2.50	0.97	Agree	2.50	1.04	Agree
5	I quickly adapt to changes at work	1.12	0.44	Disagree	1.85	0.87	Disagree
	Cluster mean	**2.36**	**0.75**	**Disagree**	**2.64**	**0.83**	**Agree**

Criterion mean = 2.50: means at or above 2.50 are read as agreement and means below 2.50 as disagreement.
(Sources: Researcher's Computation, 2026)

Table 6
Simple regression of risk monitoring on employee efficiency

$R = 0.386; R^2 = 0.149;$ Adjusted $R^2 = 0.141; F = 20.605;$ Sig. = 0.000					
Variable	**B**	**Std. error**	**Beta (β)**	**t**	**Sig.**
(Constant)	3.622	0.162	-	22.413	0.000
Risk monitoring (RMo)	0.163	0.036	0.386	4.539	0.000

Dependent variable: Employee Efficiency (EE); critical t = 1.960.
(Sources: Researcher's Computation, 2026)

Table 7
Simple regression of risk governance on employee efficiency

$R = 0.330; R^2 = 0.109;$ Adjusted $R^2 = 0.101; F = 14.390;$ Sig. = 0.000					
Variable	**B**	**Std. error**	**Beta (β)**	**t**	**Sig.**
(Constant)	3.668	0.181	-	20.263	0.000
Risk governance (RGo)	0.160	0.042	0.330	3.793	0.000

Dependent variable: Employee Efficiency (EE); critical t = 1.960.
(Sources: Researcher's Computation, 2026)

work (3.28 for male and 3.38 for female staff) and access to resources and support (3.01 and 3.10) were rated above the criterion, and workload manageability sat exactly on it (2.50) for both groups. By contrast, freedom from interruptions (1.89 and 2.39) and quick adaptation to change (1.12 and 1.85) fell below the criterion. The cluster mean was 2.36 for male staff, which is below the criterion, and 2.64 for female staff, which is above it. Employee efficiency in the sampled firms is therefore moderate: employees are motivated and reasonably resourced, but they are frequently interrupted and slow to adapt, which are weaknesses that sound risk practices could plausibly address.

C. Test of Hypotheses

H_{01}: Risk monitoring has no significant effect on employee efficiency among selected manufacturing firms in South-South Nigeria.

Table 6 shows a moderate positive relationship between risk monitoring and employee efficiency (R = 0.386). Risk monitoring explains 14.9% of the variation in efficiency (R^2 = 0.149; adjusted R^2 = 0.141), and the model is significant (F = 20.605, $p < 0.001$). A one-unit improvement in monitoring is associated with a 0.163-unit increase in efficiency (B = 0.163, β = 0.386), and the t-value of 4.539 exceeds the critical value of 1.960. H_{01} is rejected and the alternative accepted: risk monitoring has a significant positive effect on employee efficiency.

H_{02}: Risk governance has no significant effect on employee efficiency among selected manufacturing firms in South-South Nigeria.

Table 7 shows a positive relationship of moderate strength between risk governance and employee efficiency (R = 0.330). Risk governance explains 10.9% of the variation in efficiency (R^2 = 0.109; adjusted R^2 = 0.101), and the model is significant (F = 14.390, $p < 0.001$). A one-unit improvement in governance is associated with a 0.160-unit increase in efficiency (B = 0.160, β = 0.330), and the t-value of 3.793 exceeds 1.960. H_{02} is

Table 8
Summary of hypothesis tests

Hypothesis	Predictor	β	t	R^2	F	p	Decision
H01	Risk monitoring	0.386	4.539	0.149	20.605	< 0.001	Rejected
H02	Risk governance	0.330	3.793	0.109	14.390	< 0.001	Rejected

(Sources: Researcher's Computation, 2026)

rejected and the alternative accepted: risk governance has a significant positive effect on employee efficiency. The explanatory power is modest, with almost 89% of the variation left to other factors.

Table 8 shows that both null hypotheses were rejected at the 5% level. Monitoring has the larger standardised effect (β = 0.386 against 0.330) and the larger explanatory power (14.9% against 10.9%). Both effects are significant, but neither practice alone explains most of the variation in efficiency.

D. Discussion of Findings

Risk monitoring had a significant positive effect on employee efficiency (B = 0.163, p < 0.001). The result fits the HRO view that continuous attention to emerging problems keeps operations reliable, and it agrees with the evidence that stronger enterprise risk management implementation improves performance (Horvey & Odei-Mensah, 2023). Respondents credited monitoring with preventing recurrences and detecting new risks, the two outcomes that most directly protect working time. Their refusal to agree that monitoring reduces uncertainty suggests that monitoring information may not be reaching employees in a form that clarifies their own work. This is consistent with the emphasis of Manas et al. (2024) on employee behaviour and organisational culture in making risk practices effective. Monitoring that is shared with employees, for example through shift briefings and visible risk dashboards, may convert detection into certainty.

Risk governance also had a significant positive effect (B = 0.160, p < 0.001), in line with Rosdi and Kasim (2025), who linked effective risk management committees to employee satisfaction and performance, and with the literature that treats governance as a line of defence (Addae et al., 2023; Rehman et al., 2021). The descriptive results, however, show a gap between structure and experience. Employees rated clear policies, defined ownership and transparency below the criterion, and governance explained the smallest share of efficiency (10.9%). Erin et al. (2023) found that the quality of governance features, not their mere existence, drives outcomes. The pattern here suggests that governance in the sampled firms exists but is weakly institutionalised or poorly communicated. The significant coefficient means that where employees do perceive stronger governance, they tend to be more efficient, which implies that raising the visibility and quality of governance could yield gains.

The higher ratings by female staff on governance and by male staff on awareness of risk deserve attention. They may reflect different roles, different exposure to governance communication or different expectations, and they suggest that risk communication should be designed for all groups of employees. The low efficiency ratings for interruptions and adaptation to change also indicate that oversight alone does not guarantee efficient work.

5. Conclusion, Recommendations and Limitations

The study examined the effect of risk monitoring and risk governance on employee efficiency in selected manufacturing firms in South-South Nigeria. Both had positive and significant effects, and both null hypotheses were rejected. Monitoring showed the larger effect, while governance was the weakest-rated practice and had the smallest explanatory power.

Three recommendations follow. First, managers should make monitoring continuous and participatory by sharing monitoring results with employees through regular briefings, so that detected risks are translated into clearer expectations at work. Second, firms should make governance concrete at the shop-floor level by publishing risk policies in plain language, naming owners for each major risk and reporting on risk status openly. Third, boards and industry bodies should assess the quality, not just the existence, of risk committees and governance structures.

The study has limitations. It is cross-sectional, covers four firms and relies on employees' self-reported perceptions. Each practice was tested in a separate simple regression, so the estimates do not control for other practices, and because monitoring and governance are conceptually interrelated they may overstate each other's unique effects. Future research should test the practices jointly with diagnostic checks, use larger samples and examine mediators such as satisfaction and engagement.

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