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ASSESSMENT OF OPERATIONAL RISK AND PERFORMANCE: A FOCUS ON HUMAN ERRORS AMONG SMALL AND MEDIUM ENTERPRISES IN OYO STATE, NIGERIA.

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ABSTRACT

Small and Medium Enterprises (SMEs) experience performance challenges caused by operational risk, which include human errors. This study investigates the impact of these errors on SME performance. The study was carried out in Oyo North Senatorial District with agricultural SMEs as the target. Purposive sampling was used to selected 280 agricultural SMEs within the study area. Structured questionnaires were used to collect primary data and the data were analyzed using Pearson Product Moment Correlation Coefficient (PPMC). The results showed that human errors had a significant negative effect on SME performance with slips showing the strongest correlation ($r = .820$, $p < .001$), lapses ($r = .647$, $p < .001$) and mistakes ($r = .481$, $p < .001$). The findings show that routine task errors impede operations, reduce productivity, and disturb decision-making. Automated workflows and staff training with real time monitoring are the suggested ways of reducing human errors. Initiatives that support SMEs to be more operational efficient and long term resilient are called upon by policymakers.

Keywords: Human errors, SMEs performance, Operational risks, Slips and lapses, Mistakes, Risk management.

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Introduction

The risk is the possibility of encountering unexpected events that may result in negative outcomes, which is the basis of economic and business decisions. It is the probability of losing or failing to achieve the organizational goals and objectives (Hock-Doepgen et al., 2021). Risk is usually associated with uncertainty and negative outcomes in the business environment, and thus risk management is an important element for the performance and sustainability of the organization.

On the other hand, operational risk, a part of business risks, is the result of poor process, human error or external events that are out of an organization's control (Galletta et al., 2023). These risks have the potential to ruin primary business processes (operational efficiency, legal compliance, stability), which is neither good for the business nor its litigants. For example, operational risks such as the technical disruptions and system breakdowns can result in losses of high magnitude. Small and Medium Enterprises (SMEs) that are usually with constrained resources are the most vulnerable to such risks. As such, SMEs need to manage operational risks to remain viable and perform well in the long term.

However, performance in business is usually defined as the efficiency, effectiveness and profitability of an organization in achieving its goals. SMEs key performance metrics such as profitability, market share and customer satisfaction are vital indicators of success (Ravelomanantsoa et al., 2019). However, SMEs are prone to operational risks due to the fact that they face unique challenges such as economic fluctuations, regulatory inconsistencies and resource constraints. Consequently, for greater SME resilience and enabling sustainable growth in the competitive environments characterized by high and growing uncertainties, effective risk management becomes critical.

Statement of the Problem

Despite the Central Bank of Nigeria's efforts to support SMEs, many of them fail within five years (National Bureau of Statistics, 2023). Even though human errors are often a major source of inefficiencies and cost overruns (Starbuck, 2017), they are often overlooked due to operational risks. There is very little research on the role of human errors in SME performance

in Nigeria, especially with regards to external pressures such as political instability and economic downturns (Hudáková et al., 2023; Mejri, MacVaugh, & Tsagdis, 2018). This study is based on Oyo State, Nigeria, because of the diversity of SME landscape and its strategic economic importance. The objective of this study is to assess the effect of human errors on the performance of SMEs in Oyo State.

Research Hypothesis

Ho: There is No Significant Relationship between Human Errors and SMEs' Performance

Literature Review and Conceptual Underpinning

The Concept of Operational Risk

Operational risk significantly affects businesses globally, arising from internal failures or external events (East, 2022). It includes fraud, process failures, system breakdowns, and external disruptions (de Araújo Lima, Crema, & Verbano, 2020). Effective operational risk management (ORM) involves identifying, evaluating, and mitigating risks (Bouteille & Coogan-Pushner, 2021). Unlike financial risks, operational risks are harder to quantify and require robust frameworks (Spanò & Zagaria, 2022). Tools like scenario analysis and stress testing help address these uncertainties (Pakhchanyan, 2016).

Human errors are a major contributor to operational risks due to insufficient training or negligence (Rizwan & Karthikeyan, 2023). Ethical organizational cultures help mitigate such risks (Agarwal & Kallapur, 2018). Technological risks, such as cyber-attacks, have increased with digitalization (Tweneboah-Koduah & Prasad, 2020), necessitating regular updates and cybersecurity measures (Girling, 2022; Adam, 2023). Regulatory compliance, like adherence to Basel III standards, also enhances risk management (Basel Committee on Banking Supervision, 2011; Hofmann & Strobel, 2020). Moreover, external factors, including economic shocks and geopolitical events, further challenge businesses (Settembre-Blundo et al., 2021). The COVID-19 pandemic highlighted these vulnerabilities (Devi et al., 2023), emphasizing the need for flexible, adaptive risk management strategies (Boin & Lodge, 2016). Thus,

comprehensive ORM must address human, technological, and external factors for organizational resilience.

Human Errors in and Organization

Mistakes that hinder desired outcomes include simple data mistakes to safety protocol failures (Pettersen-Gould, 2021). High interdependency errors happen frequently in complex systems (Lepoitevin et al., 2017). These errors disrupt safety, productivity, and financial performance (Grabowski, Martelli & Roberts, 2023; Bonnefon & Rahwan, 2020). One can also argue for the presence of cognitive biases, such as heuristics, in strategic decision making (Tversky & Kahneman, 2015).

Furthermore, businesses are exposed to threats through inadequate risk management practices (Wang et al., 2021). Helmreich and Foushee (2019) have suggested ways to mitigate these errors in use of training and a safe culture. With automation, technological interventions reduce manual errors (Brauner et al., 2019), it does so however, such interventions can bring new risks (Tzelgov, 2014). Error reporting and correction should be supported by regulatory frameworks (Abrahams et al., 2024). Organizational performance, safety and compliance can be improved by training, technology, and supportive policy addressing human errors (Senders & Moray, 2020).

Theoretical Framework for the Study

In this study, the Dynamic Capabilities Framework by Teece, Pisano, and Shuen (1997) is adopted, focusing on a firm's ability to reconfigure resources to adapt to changing environments. This framework is relevant for SMEs that are exposed to the operational risk, as it emphasizes on responsiveness and adaptability because they are key factors for survival in an environment with uncertain market. Due to the limited resources, SMEs heavily rely on the dynamic capabilities to control risks and maintain competitiveness. According to Eisenhardt and Martin (2000), dynamic capabilities are beyond routine operations and address major challenges in the process of change. To develop these capabilities, learning, knowledge application, and innovative practices are essential (Kump et al., 2015). Opportunistic risk mitigation through the utilization of advanced technologies and fostering a culture of

continuous learning is within the reach of SMEs. It is thus a comprehensive framework for considering present threats and building resilience through the future challenges to foster long term sustainability and growth in a dynamic business environment. The Figure 1 depicts the relationship between human errors and SME performance. The independent variable is human errors, that is, slips, lapses and mistakes. Slips are incorrect inputs during routine tasks caused by distractions or misaligned processes. Caused by memory failures or insufficient tracking of tasks, lapses are forgotten tasks. Mistakes are poor decisions made from poor judgment or lack of information. Collectively, these errors disrupt operational efficiency as a dependent variable. Human errors are the reason of inefficiencies that slow down SMEs' performance and efficient processes are necessary to SMEs' productivity. It points out that these errors can be minimized by improving operational outcomes. Thus, the knowledge of the effect of each error type is useful for developing specific strategies to improve SME performance.

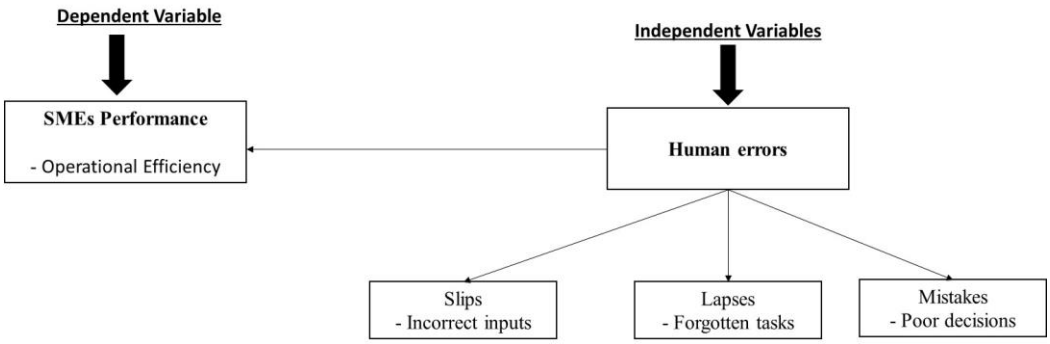

Figure 1: Conceptual Framework

Source: Author's conceptualization

Methodology

This study was conducted in Oyo North Senatorial District. The research design is quantitative in nature and assess the impact of human errors on SME performance. Primary data were collected using structured questionnaires distributed to 280 participants, specifically targeting agricultural SME owners and managers with 1 to 10 years of business experience.

The collected data were analyzed using Pearson Product Moment Correlation (PPMC). PPMC was chosen for its effectiveness in evaluating correlations between two distinct variables (Wilmking et al., 2020). The analysis sheds light on how human errors influence productivity, decision making and operational efficiency in agricultural SMEs. The study seeks to identify strategies for minimizing human related risks and improving SME performance in Oyo State by understanding these impacts.

Model Specification

The Pearson Product-Moment Correlation Coefficient (PPMC) model for analyzing the objective of the study is as follows:

$$r = \frac{\sum\left(X_i - \hat{X}\right)\left(Y_i - \hat{Y}\right)}{\sqrt{\sum\left(X_i - \hat{X}\right)^2}\sqrt{\sum\left(Y_i - \hat{Y}\right)^2}} \quad (1)$$

In this equation:

- r is the Pearson correlation coefficient.
- X_i represents the individual values of the independent variable (human errors).
- Y_i represents the individual values of the dependent variable (SME performance).
- $\hat{X}$ and $\hat{Y}$ are the means of the independent and dependent variables, respectively.

Results

The PPMC results that analyzed Correlations between Human Errors and SMEs' Performance as presented in Table 1. The result shows significant correlations between the human errors (mistakes, lapses, and slips) and the SME performance, and different levels of their influence. Slips have the largest correlation with performance ($r = .820$, $p < .001$), suggesting that errors in performing peripheral operations of a routine task are the most critical disruption to operational efficiency and to overall outcomes. That is also in line with Brauner et al. (2019) finding that slips-ultimately caused by distraction or mismatch of task environment-are consequential for organizational performance.

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Moreover, lapses are also found to be highly correlated with performance ($r = .647$, $p < .001$), meaning lapses or memory failures or oversights have an impact on operational consistency and making decisions. This is supported by Tzelgov (2014) findings that lapses are a common problem in SMEs due to the reliance on manual processes or the lack of support systems. However, these kinds of errors need to be addressed and task design improvements as well as systematic monitoring to improve performance.

Mistakes still have a significant effect, although they show a moderate correlation ($r = .481$, $p < .001$). Most often mistakes are based on flawed judgments or decision-making framework, and inefficiencies and opportunities lost. This works according to Otman (2021) who found that in SMEs, decision making errors usually occur due to the lack of access to accurate information and the lack of strategic foresight meaning that this has a negative impact on immediate operations and long-term goals.

These findings show that comprehensive error management strategies are important to avoid the negative consequences of human error properties in SME performance. Aswathy and Tyagi (2022) and Qiu, Cui and Wu (2020) suggest that improved structured workflows, although more decision-making processes, system error prevention mechanisms, can all greatly enhance resilience and operational efficiency. Human errors need to be addressed holistically if SMEs want to continue to grow and adapt to dynamic operational challenges.

Table 1: Correlations between Human Errors and SMEs' Performance

		Performance	Mistakes	Lapses	Slips
Performance	**Pearson Correlation**	1	.481**	.647**	.820**
	Sig. (2-tailed)		.000	.000	.000
	N	260	260	260	260
Mistakes	**Pearson Correlation**	.481**	1	.544**	.454**
	Sig. (2-tailed)	.000		.000	.000
	N	260	260	260	260
Lapses	**Pearson Correlation**	.647**	.544**	1	.603**
	Sig. (2-tailed)	.000	.000		.000
	N	260	260	260	260
Slips	**Pearson Correlation**	.820**	.454**	.603**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	260	260	260	260

**. Correlation is significant at the 0.01 level (2-tailed)

Source: Field Survey (2024)

Discussion of Findings

Overall, the results in Table 1 show strong correlation between human errors (slips, lapses and mistakes) and SME performance, consistent with the Dynamic Capabilities Framework (Teece, Pisano, & Shuen, 1997). This correlates well with slips and performance ($r = .820$, $p < .001$), highlighting the operational impact of distraction and task misalignment, in supporting Brauner et al. (2019) who highlighted that distraction and task misalignment are critical to routine task error impacts on operations. This finding is consistent with the framework's focus on adaptability, because SMEs must continuously adapt internal processes to avoid such errors. Also, there is a significant correlation ($r = .647$, $p < .001$) with lapses, as in Tzelgov (2014), who reported memory failures in manual systems. The framework suggests that SMEs can improve resilience by learning and process improvement (Kump et al., 2015). Mistakes, however, are moderately correlated ($r = .481$, $p < .001$), as is the case with Otman's (2021) findings on decision making errors. It strengthens the argument of the conceptual framework that continuous learning and resource reconfiguration are essential to sustaining SME performance under operational risk.

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Conclusion and Recommendations

Based on this study, it is concluded that human errors, e.g., slips, lapses, and mistakes, are very disruptive to SME performance by affecting decision making as well as productivity. Errors have shown there are the greatest slips, suggesting there is a high importance to structured work flows, task automation and employee training to minimize errors. The findings are consistent with the Dynamic Capabilities Framework, which would imply that SMEs require to adjust and remodel resources to alleviate these operational risks.

Based on the findings of the Study, the following recommendations are made:

- To decrease human errors, SMEs should do automated workflows and comprehensive trainings.
- A system of monitoring systems should be introduced to detect and correct errors as soon as possible, to maintain operational stability.

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