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Original Article

Mapping of Risks and Firm Performance: Insights from Small Scale Garment Enterprises in Eldoret Town, Uasin Gishu County, Kenya

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Small-scale garment enterprise projects are pivotal in Kenya's economic

Keywords:

Small Scale, Enterprises Garment, Risks,

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development, contributing significantly to employment and poverty alleviation. These projects often face challenges that impede their growth and performance. The paper seeks to establish the effect of mapping risks on the performance of small-scale garment enterprise projects in Eldoret town. An explanatory research design was used and the target population consisted of 386 small-scale garment enterprise owners. A sample size of 196 small-scale garment enterprise projects in Eldoret town was selected using Yarmane formula. The respondents were selected using stratified sampling method and data was collected using questionnaires. The analysis was done using both descriptive and inferential statistics. Result showed that scheduling milestones had statistically positive effect on the performance of garment enterprise projects (β 0.947, p<0.05). The paper concludes that mapping of risks is critical processes of ensuring that garment enterprises attain performance targets. It is therefore recommended that comprehensive risk mapping practices need to be regularly undertaken by SMEs in the garment sector in Eldoret town.

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INTRODUCTION

Small and Medium Scale Enterprises (SMEs) are the foundations of economic growth in many countries because of their immense contribution to social-economic growth and development (Apaloo & Bright, 2022). Despite the role that the SMEs have been playing towards economic development, most of them end up closing down before five years. Ahmed et al. (2019) indicated that five years of SMEs establishment are important stage as it is where most failure rate happens. One of the reasons for this failure rate is inability of small enterprises to address risks that they face in their business operations. Ntare et al. (2022) mentioned that risk is directly attached to the business operation cycle beginning from setting up of business strategies to the maturity of the business. Hence, small enterprises need to adopt risks management practices to enable them perform and remain sustainable in the long-term (Greenberg & Karen, 2014). Risk management is highly strategic in nature and is essential to a firm (Ahmed et al., 2019). Risk-management techniques by the SMEs are relevant in the sense that they are able to add value. Risks management activities may reduce total risk and diversified investors have already done so by eliminating all of the specific risk. Therefore, risk management activities will increase the performance of the enterprise. The first stage of risk management is risk mapping.

Ekwere (2016) indicated that mapping risks is a crucial aspect of enterprise project performance since it identifies the potential risks and their possible mitigation measures which in turn leads to better performance of the enterprise. When mapping risks, one should determine: "What can go wrong?" through field observations, "What is the likelihood?" through scope and documentation, and "What are the consequences?" through listing the

associated risks (Aven, 2020). A risk map is a data visualization tool for communicating specific risks an organisation faces, the goal of risk mapping is to improve an organisation's understanding of its risk profile and appetite, clarify thinking on the nature and impact of risks, and improve the organisation's risk assessment model. (Ekwere, 2016). Making frequent field observations helps the organisation to identify the potential risks. The goal of a risk map is to improve a project's understanding of its risk profile and appetite, clarify thinking on the nature and impact of risks, and improve the organisation's risk assessment model. A risk map is often presented as a matrix (Pascarella et al., 2021). The likelihood a risk will occur may be plotted on the Yaxis while the impact of the same risk is plotted on the X-axis.

Events identified as potentially impeding the achievement of objectives are deemed to be risks and should be evaluated based on the likelihood of occurrence and the significance of their impact on the objectives. It is important to first evaluate such risks on an inherent basis-that is, without consideration of existing risk responses and control activities. For example, in an organization, the headquarters on the banks of a river may seek to assess its exposure to the risk of flooding (Ekwere, 2016). On an inherent basis, it would consider the likelihood and impact of a flood by considering external data (such as the historical and projected frequency of floods) and internal data (such as the estimated damage to its physical assets if a flood were to occur). An impact and probability rating should then be assigned using defined risk rating scales. These individual risk ratings should then be brought together in the form of an inherent risk map which enables an analysis of risks not only on an individual level (high, medium, low) but also about one another (a concentration of certain risks that potentially creates a greater overall risk exposure-

for example, reputational damage-than the sum of the individual risk exposures). additionally, Trzeciak (2021) noted that as risk assessments are refreshed over time, a risk map can allow analysis over time (upward or downward trend of risks, and extent of positive or negative correlations between certain risks). This paper examines the linkage between risk mapping activities conducted by SMEs and their impact on performance.

Problem Situation

Risk management regularly hits small business in the garment sector in Eldoret town resulting to many of them failing to realize their goals. When faced with various forms of risks, SMEs appear to spend a lot of financial resources for risk solution rather than re-directing those resources to business expansion. Considering the failure rate of SMEs in the country is high as many cannot reach five years, it is not adequately known the degree to which risk mapping is undertaken by these enterprises and especially those in the garment sector. Hence, this paper seeks to establish the effect of risk mapping on the performance of small Scale Garment Enterprise in Eldoret town, Uasin Gishu County, Kenya.

LITERATURE REVIEW

At the initial step of mapping risks, the enterprise identifies the scope of all the borders of the organisation as well as the obtainable solutions and documentation and therefore the level of gross and residual risk examined. Mapping risks positively impact both operational efficiency and customer satisfaction within the project (Mbogo, 2021). Identifying and mitigating risks early is essential for maintaining project stability and avoiding potential disruptions (Gachie, 2017). According to Gazzawi and Hammarberg, (2022) proactive mapping of risks leads to improved outcomes in SMEs. According to Machina (2022), the mapping risks process accounts for basic elements of the internal environment which includes field observations and a list of risks, the board, and the job responsibilities.

Mensah and Gottwald (2016) conducted a study on factors related to enterprise risk implementation. Non-experimental correlational approach was used in exploring how top management (TM) support, an audit committee (AC), and the availability of a chief risk officer (CRO) relate to implementing enterprise risk mapping. The study established that the risk mapping deployment level, TM support, and AC presence are related significantly. Further, it was evident that AC, CRO, and support level of enterprise performance significantly correlate. According to Gachie (2017), mapping risks is essential for maintaining project stability and achieving goals. The financial performance data suggests that most enterprises operate within a moderate-income range, contributing significantly to the local economy through job creation and local spending with effective mapping risk implemented in those enterprises (Gazzawi & Hammarberg, 2022). Small-scale enterprises with effective risk mapping are vital for economic development in local communities (Vasileiou, Barnett, & Fraser, 2022).

Pagach and Warr (2022) did research in the United States focusing on 106 enterprises assessing risk mapping and its effect on the project's performance by using a matched sample model and logit. CRO keywords as proxies were used to measure risks while financial variables were used to measure the performance of the enterprise. Results revealed that the performance and mapping of risks significantly correlate; a decrease in stock price volatility was established with the ERM introduction. Further, the study found that unlike those that do not appoint CROs, CRO hiring enterprises exhibited a decrease in market-to-book ratio an increase in asset opacity, and a decrease in earnings volatility. The study used measures of performance, whereas this research measured performance using other indicators of performance including financial metrics, customer metrics, and operational metrics.

Florio and Leoni (2019) investigated whether there are Italian-listed companies' performance and risk

mapping systems and found that implementation extent had a positive relation. The results showed that in terms of market evaluation and performance, organisations that have advanced risk mapping strategies perform well. The study further revealed that higher performance is a result of effective scope and documentation, field observations, and a list of risks hence risk exposure is reduced. The study found that risk mapping is critical in the determination of the performance of Italian-listed companies. Moreover, it was evident that in an under-investigated context e.g. Italy, enterprise performance and Enterprise risk mapping implementation positively relate. Since the study was a case study of Italian-listed companies, its findings cannot be generalized in Kenya, hence the need to assess how risk mapping impacts the performance of small-scale garment enterprises in manufacturing sectors in Kenya. Risk indicators identification involves determining the present levels of risk, control performance, hotspots, and past trends.

According to Machina (2022), the goals of businesses entail a review of plans and strategies. Management involvement is a main anchor to map risk and therefore effective in identifying risks related to the set goals. Gupta (2020) for instance posited that in Indian enterprises, risk is mapped based on its budgetary effect and subsequently on its circumstances. However, operational modeling is not a common approach in the identification of risk since chief financial officers, line managers, and internal auditors often use previous experiences for analysis. The complex tools of risk identification such as the SWOT analysis are often used by enterprises when the board of senior management and directors is in charge of identifying the risks. In the United States, Gordon et al. (2020) conducted a study focusing on 112 companies assessing the effect of project risk mapping on performance. The study used a linear regression. The Risk mapping index was used to measure enterprise risks while excess stock market returns measured performance. The study argued that enterprise

performance and project risk mapping relationship is contingent. Upon the correct match risk mapping and these 5 factors that affect the enterprise: competition, board directors' industry of monitoring, enterprise complexity, enterprise size, industry competition, and environmental uncertainty. The investigation revealed that risk indicator identification is critical in the effective implementation of risk mapping, hence affecting enterprise project performance.

Machina (2022) assessed how Kenyan commercial banks' performance and project risk mapping relate. The mode of data gathering was primarily by using questionnaires and secondary means as well. The logit model was used in evaluating the regression equation. The study disclosed that proper identification of risk indicators effects a bank's performance. It only measured the performance financial aspects; it did not assess non-financial performance indicators. The Incidents management procedure involves the management and actual risk incidents analysis. This ensures proper management of the incident by reducing negative incident consequences and measures placed to make sure the incidents do not recur. As stated by Kipkorir and Maina (2022), incident management aims at enhancing organisation transparency, providing objective information on varied risk sorts, distinguishing risk downside areas, and acting as employees' downside audio system. Altanashat et al. (2019) studied Jordanian public material possession corporations, institutional performance was impacted by project risk Mapping. The study was on Integration Practices (2021) and the study used questionnaires to gather information. The collected information was analyzed using a structural equation modeling tool (Smart-PLS). It was found out that for Jordanian mining company's performance improvement, risk mapping and management practices adoption were very crucial. The analysis additionally highlights the continued implementation of world risk management practices to enhance Jordanian mining corporations' performance. The study was restricted to Jordan,

consequently, another study based mostly in Kenya is needed, thus the present study targets the small-scale garment enterprises in Eldoret Town Kenya and the possible impacts on performance. The social impact of small enterprise projects is significant, particularly in developing areas (Kinyua, 2021). Effective risk mapping ensures these enterprise projects can sustain their operations and support their communities.

Owolabi et al. (2017) studied how Nigeria-based insurance enterprises' profits were impacted by risk management. A descriptive analysis setup was adopted. 60 respondents were used as the sample size. Statistical analysis system (SAS 9.2) was used to test the null hypothesis with the use of Pearson compact and simple linear regression coefficients. From the results, the profit of insurance enterprises is affected by risk mapping practices. The study additionally disclosed that the insurance enterprises' profit was positively impacted by operational risk mapping practices. Insurance enterprise's profit and strategic risk mapping practices had a link. It was suggested that managers of insurance companies ought to simply develop sensible procedures, establish risks, mitigate, and make sure that the performance of the enterprises isn't affected adversely. The study was limited to insurance. The study was restricted to insurance enterprises in Nigeria. Moreover, the study solely assessed financial performance and non-financial performance.

In Kenya, Gachanja (2019) conducted a study on how 34 Kenyan commercial state corporations' performance was impacted by project risk mapping practices. He noted that management of incidents makes sure the institution learns from mistakes of the past, high-frequency monitoring, ensuring business units are learning from each other, items of low consequence as identifying and fixing controls that are aren't functioning. Company assessments should be responded to and reacted to as they require better and more knowledge. Techniques of responding included risk acceptance, risk sharing,

risk reduction, and risk avoidance. He further established that there exist 2 major risk response indicators with the primary addressing having a process integrating the risk results and the second examining strategies for mitigating risk as organisations start assessing and quantifying risk, analyzing the cause basis, integrating risks, and developing strategies to mitigate. The processes must have a bearing on the capability of management in overseeing risks. The study was limited in scope since it targeted commercial state corporations while this study will concentrate on the manufacturing sector. Thus, the research is interested in conducting risk mapping and mitigation of the SME's clothing products. All the causes of risks that potentially disrupt the performance of SMEs projects can be mapped and mitigated by proactive action so that the cause of risk can be reduced or eliminated. This study sought to determine the effect of mapping risks on the performance of small-scale garment enterprise projects in Eldoret Town, Uasin Gishu County.

MATERIALS AND METHODS

This study adopted an explanatory research design. Explanatory research design focuses on explaining why and how there is a relationship between two aspects of a situation or phenomenon (Freedman, 2009). The study area was Eldoret Town, Uasin Gishu County. The small-scale garment enterprise projects are spread throughout the 9 estates selected in Eldoret Town. This study's target population consisted of the top 386 small-scale garment enterprise owners operating in Eldoret town. The study selected 196 small-scale garment enterprise projects registered by the county government of Uasin Gishu as of January 2024 and was calculated based on Yamane's (1973) formula at 95% confidence level (0.05 level of significance). Stratified sampling method was used for the selection of the study respondents. Since there were distinct subgroups within the small-scale garment enterprise projects, such as different types of enterprises (e.g., tailoring shops, boutiques, and

custom clothing businesses), stratified sampling was useful. Questionnaire was used as instrument of data collection. Analysis of data was performed using both descriptive statistics (frequencies, percentages, means, Kurtosis, skewness, and standard deviations) and inferential statistics (Karl Pearson {Correlation}, assumption of regression tests and regression) analysis. A Karl Pearson correlation analysis was conducted to determine the

direction and strength of the relationship between the independent and dependent variables.

RESULTS AND DISCUSSIONS

This section introduces the results of data analysed from the field with respect to the main objective of the paper. The results are discussed in addition to the hypotheses for the study tested in the subsections following.

Table 1: Descriptive statistics of mapping risks on performance of small-scale garment enterprise projects.

	Risk Mapping strategies	Mean	Std. Deviation
1	We have a formal process for risk mapping	3.89	0.754
2	The scope of our risk mapping covers the entire enterprise	3.83	0.860
3	The responsibility for maintaining risk documentation is clearly assigned	3.92	0.858
4	Field observations are conducted regularly to identify risks	3.97	0.924
5	Structured methods are used as checklists during field observations	4.03	0.954
6	Risk mapping has enhanced our operational efficiency	4.04	0.987
7	Risk mapping has improved customer satisfaction in our business	4.24	0.958
	Valid N (list wise)	3.99	0.899

The mean value of 3.89 suggests that most projects have established formal procedures for risk mapping. This aligns with the importance of structured risk management processes highlighted by Smith (2020). The low standard deviation of 0.754 indicates consistent responses among participants, reflecting a common agreement on the presence of formal risk mapping processes. This implies a balanced perception towards formal risk mapping processes, as noted by McGowan et al. (2023), who emphasizes the need for systematic approaches in risk management. This balanced distribution suggests a moderate agreement on the presence of formal processes without strong polarization in opinions. Secondly, the respondents also appeared to agree (mean=3.83, Std Dev=0.86) risk mapping covers the entire enterprise project activities. This is crucial for comprehensive risk management strategies as argued by Adams (2019) as it aligns with the importance of thorough risk mapping practices discussed by Sullivan-Wiley et al. (2019). The finding supports the need for garment enterprise projects to clarify and

standardize the scope of risk mapping initiatives to ensure consistency.

Thirdly, result also show that most respondents agreed (mean=3.92, Std. Dev=0.86) agreed that the responsibility for maintenance of risks by the garment SMEs is clearly assigned. This supports the view that clarity of responsibilities enhances accountability in risk management (Gachie, 2017). The result implies that most of the respondents are of the opinion that responsibilities for maintaining risk documentation are well-defined within their enterprises. Fourthly, respondents agreed (mean=of 3.97, Std. Dev 0.92) that field observations are regularly undertaken by their enterprise to identify the risk. This implies that there is regularity in conducting field observations by enterprises to identify risks. This is essential for proactive risk management strategies (Smith, 2020). This underscores the importance of consistent risk identification practices in enterprises as supported by Adams (2019). The result also highlights opportunities for enterprises to standardize practices

to enhance risk identification effectiveness during mapping phase.

Fifthly, respondents also agreed (mean=4.03, Std. Dev=0.95) structured methods are used as checklists during field observations. The result supports the effectiveness of structured approaches in risk management by small and medium enterprises (McGowan et al., 2023). It is seen that structured methods are integral to effective risk management during field observations by garment Sixthly, enterprises. respondents agreed (mean=4.04, Std. Dev=0.99) that risks mapping activities has enhanced operational efficiency of their garment enterprises. This supports the view that risk mapping improves enterprise project performance (Sullivan-Wiley et al., 2019). Hence, it is deduced that risk mapping significantly enhances operational efficiency, despite some variability in perceived impact.

The highest mean value of 4.24 signifies strong consensus on the positive impact of risk mapping on customer satisfaction. This supports the correlation between effective risk management and improved customer outcomes (Adams, 2019). The standard deviation of 0.958 suggests variability in perceived improvements. This underscores the significant positive impact of risk mapping on customer outcomes (Sullivan-Wiley et al., 2019). Hence, there is general agreement among respondents that

mapping risk greatly enhances satisfaction, despite varying degrees improvement across projects. The study's findings indicate that respondents generally agreed (mean = 3.99, standard deviation = 0.899) that risk mapping as an implementation strategy is effectively conducted by small-scale garment enterprise projects. This implies that these enterprises not only implement risk mapping well but also ensure it covers a broad scope within the organisation, positively impacting both operational efficiency and customer satisfaction.

In summary, the statistical analysis reveals that small-scale garment enterprise projects implement risk mapping effectively, covering various aspects such as formal processes, scope, responsibilities, field observations, structured methods, operational efficiency, and customer satisfaction. The skewness values, mostly negative, indicate a general trend towards positive ratings, and the kurtosis values provide insight into the distribution characteristics, enhancing the understanding of respondents' perceptions and the impact of risk mapping on enterprise project performance.

A Karl Pearson correlation analysis was conducted to determine the direction and strength of the relationship between mapping risks and performance of garment enterprises

Table 2: Correlations between	Mapping risks and	performance of	garment enterprises
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		Mapping risks	Performance of garment enterprises
Mapping risks	Pearson correlation	1	0.947**
	Sig. $(2 - tailed)$		0.001
	N		171
Performance of	Pearson correlation	0.947**	1
garment enterprises	Sig. $(2 - tailed)$	0.001	
	N	171	

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

The result shows that there exists a strong positive correlation between risk mapping and performance of garment enterprise projects (r=0.947, p=0.001). In the context of small-scale garment enterprises,

where even minor issues can have significant impacts, proactive risk mapping ensures that projects stay on track and achieve their goals. The

strong correlation with performance highlights the critical role of risk management in project success.

CONCLUSIONS AND RECOMMENDATIONS

The study concludes that effective risk mapping enhances operational efficiency by minimizing disruptions and ensuring smooth processes, leading to improved customer satisfaction. Projects with robust risk management strategies are better positioned to handle challenges, resulting in performance and stability. consistent In recommendations, Enterprises should proactively identify potential risks and develop strategies to mitigate them, which helps minimize disruptions and maintain operational efficiency. Regular reviews and updates of risk management plans ensure they remain relevant and effective. Additionally, providing ongoing training for staff on risk management practices ensures everyone understands their role in identifying and managing risks.

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