The Impacts of Flood Displacement on the Small to Medium-Sized Enterprises in Bor Municipal Council

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Abstract

This case study examined the socioeconomic impact of flood-related displacement on the Small to Medium-sized Enterprises (SMEs) in Bor Municipal Council, Jonglei State, South Sudan, a flood-pront region with recurrent cases of flooding. The study focused on economic losses, operational disruption, adaptive strategies, and recovery support.

Using Marol Market and other adjucent areas frequently affected by flood, the quantitative primary data from the 20 SMEs shows that 95% of the population was affected by flood displacement between 2020 and 2023. The resulting impacts last over a month and accounted for unsettling businesses, reducing capitals while other businesses broke down completely. The sampled population shows that 65% of the SMEs were women who were burdened by caregiving works, substandard public utilities and services and inadequate support from formal institutions. On top of their important roles in providing household incomes and other local urban responsibilities, SMEs are always deprived from most Disaster Risk Management (DRM) and recovery initiatives. Majority of the respondents lacked access to early warning system but relied instead on traditional sources while only 15% had limited accesses to climate information. The study used quantitative data analysis to determine the consequences of induced-flood displacement on SMEs using the SPSS Data. The results show that the resilience and recovery of the SMEs affected by flood are not adequately supported by the existing DRM frameworks in South Sudan due to lack of prioritization. The results also show that there are existing post-disaster business resilience gaps essential for more inclusive sustainable economic recovery strategies that need longitudinal studies to monitor the recovery process of the flood-affected SMEs over time. This research contributes to the broader understanding of climate-induced displacement and literature in under-researched contexts and calls for inclusive, data-driven, and climate-conscious approaches to SME support. The study recommended that SMEs must be actively integrated into DRM frameworks and supported through improved infrastructure, access to microfinance, early warning systems, and climate education.

Keywords: Flood, Small to Medium-sized Enterprises, resilience, early warning, flood-induced displacement, disaster risk management, capital, households.

Introduction

Globally, more than 1.5 billion people have been affected by flood over the last two decades and it is considered one of the most destructive natural disasters resulting to nearly 40% of all disaster-related economic loses (UNDRR 2022). Climate change has amplified the recurrent and impact of flood on infrastructure, livelihoods and local economies. The level of vulnerability on Small and Medium-sized Enterprises (SMEs), particularly informal and micro-businesses are worsened by lack of business insurance, inadequate infrastructure and limited capital (World

Bank 2021). The business closure and long-term financial turmoil are globally caused by flood due to supply chain disruption, high operational costs and damage property (Skouloudis et al., 2020). Due to flooding, SMEs faces multiple risks because of poor infrastructure, inadequate micro-institutions and poor disaster preparedness across Africa. In urban centres where informal businesses dominate such as in Sub-Saharan Africa, flood disorganized logistics, caused serious displacement and destroyed storefronts (UNESCAP 2023; Muriithi 2017). Flood has disrupted operations, discouraged investors and destroyed inventory from flood-prone zones cities like Nairobi, Dar es Salaam and Kampala in East Africa (GIZ & C40 Cities, 2020). Flood halts business operations for SMEs, service providers and transport-dependent businesses because of blocked foot traffics, damaged premises, power outages and they lack capacities to bounce back from these threats (Muriithi 2017). Understanding social welfare and economic repercussions of flood-driven movement on SMEs in flood-prone areas plays a vital role in sustaining household earnings and driving the local economy (UNDRR 2022).

Considering areas like South Sudan's Jonglei region where white-collar jobs are hard to find, the best alternative source of income and services is through the Small to Medium-sized Enterprises. Jonglei State is one of the most flood-affected areas with Bor Municipal Council having the frequent emergencies of displacement due to heavy rainfall, river overflow and poor water control systems. According to IDMC (2023), Bortown was the most affected town in South Sudan between 2020 and 2022 with thousands of households displaced by flash floods. This repeated and protracted displacement worsened by lack of adequate water channels, river overflow and other insufficient flood management measures, brutally weaken vulnerable communities and Small to Medium-sized Enterprises that are not insured or resilience (UNOCHA 2022). Considering the important roles played by Small to Medium-sized Enterprises in flood-affected places like Bor town, informal, micro-scale businesses like roadside vendors, market stalls, kiosks, and home-based services supports the livelihoods of women, youth, and displaced persons by contributing essential goods and income generation (African Development Bank 2020; JICA 2019). The collapse of these Small to Medium-sized Enterprises due to flood causes extensive loses such as low income, food insecurity, schools' breakdown and drop out and an increased dependence on humanitarian support (World Bank 2021; UNDP 2020; Mead & Liedholm 1998). The lack of capacity for these enterprises to come back to business increased poverty and slow down the recovery processes. Hence, the aim of this study is to provide solutions to the impacts of flood displacement on SMEs in Bor town, as well as an avenue for humanitarian and development actors in South Sudan and other frequently flood-affected areas.

Literature Review

Globally, Small to Medium-sized Enterprises (SMEs) are gradually exposed to climate-triggered hazards predominantly flooding which interrupts business operations, damage assets and undermines future sustainability. According to Zetter (2012), flood displacement is not just only a global humanitarian problem, but poses a long-term encounter that affect food security, income, shelter, education and health in the face of fragile institutional strength and increasing climate challenges (UNHCR 2022; FAO 2021). It is important to identify the root causes and provide durable solutions beyond emergency response. During flood events, lasting recovery needs reestablishing livelihoods in addition to emergency support that frequently focuses on food, shelter and health (OCHA 2021). Due to their inadequate capacities, SMEs are so vulnerable to climate challenges such as flood which destroy stocks, disrupt access to markets, and reduce customer flow resulting to low income and breakdown of businesses. They struggle

to recover due to their informal nature which made them weak due to inadequate capacities such as financial insurance and institutional aid mechanisms of structured assistance programs (UNDP 2022).

SMEs faces both direct and indirect consequences of flooding (Barbaglia et al., 2024). The direct impact of flood includes the destruction of shops, loss of stock, customers displacement and reduced income through market stagnation which halt its operations (ACAPS 2021; Hallegatte et al., 2017). Most of these informal businesses are not well prepared and have inadequate structures and flexibility to protect their assets during flood events. However, indirect consequences include price hiking due to low supply which greatly affects businesses that rely on daily cash flow. Due to their inadequate financial support systems such as insurance, microfinance services and backup saving, SMEs are always rendered vulnerable in protracted poverty where they are unable to recover from recurring cycle of financial instability each flood season (UNDP 2022). The flood displacement upsets the normal business operation of SMEs, thereby hampering their access to customers, income and continuity (Deng 2022). This induced-displacement makes it hard for them to access shelters, transport and increase psychological anxiety which reduced their resilience during extended displacement. It gives extra burden to the vulnerable populations, especially women and disabled persons who are not always considered during recovery support which increased their vulnerability to recover from the shocks (UNDP 2023). Due to lack of targeted supports, they are locked in a recurring loop of deprivation and uncertainty (OCHA 2021).

At the face of hard climate events where SMEs are hit harder by flood, businesses in developing countries often depend on informal coping mechanisms such as expanding livelihood sources, protecting stocks from water damage, mobile vending, and temporary evacuation to higher grounds (Frankenberger et al., 2019). Village Saving and Lending Association (VSLA), church assistance and support from relatives and neighbors are community provisional networks that are key predominantly to female-headed households and displaced sellers (Care International 2021). Nevertheless, these strategies are always strained and inequitably available, whereas the lack of government support, inadequate structures and limited investment in financial protection breakdown the recovery processes. In the absence of insurance and structured program assistance, SMEs are only relying on weak community-based mechanisms that are fragile to the recurring flood events delaying their long-term resilience (Desai 2019). Addressing these challenges requires localized approaches that integrate informal enterprises into disaster preparedness and recovery planning, ensuring that small to medium-sized businesses can withstand and rebound from future flood events (UNDRR 2015).

Methodology

To study the impact of flood-induced displacement on the Small to Medium-sized Enterprises (SMEs) in Bor Municipal council, a quantitative descriptive cross-sectional survey was used due to its effectiveness in determining the condition without the need for long-term tracking. Given its affordability and efficiency, this approach suits resource-constrained environments, facilitating large-scale data collection through structured questionnaires that measure key outcomes like reduced income, shrinking customer bases, and forced relocations. This method also helps when comparing flood-prone and none flood-affected areas in order to make an informed decision on targeted interventions. The survey yields actionable data that guides local and humanitarian responses to the economic impacts of flood displacement.

Participants and Data Collection

This case study was targeting participants from Small to Medium-sized Enterprises that have been experiencing flood-induced displacements in the past three years in Bor Municipal Council. The SMEs participants included informal business operators such as market vendors, roadside sellers, kiosk operators, tailors, food stuff, and mobile service providers. All these categories are very essential in local livelihoods but they faced sharp vulnerability because of their insufficient financial resources, absence of official business documentation, and inadequate access to organizational or governmental assistance (UNDP 2023). A targeted sampling was done to select 20 SMEs from flood affected areas to capture diverse business types and the struggle with flood, concentrating on those exposed to periodic flood events. Primary information was obtained through personal interviews employing pre-designed questionnaires that collected key details on business attributes, flood displacement experiences, economic impacts, coping mechanisms, and recovery bottlenecks. To reach the intended outcome, a pilot test was implemented to verify the tool's practicality (Kumar 2019), inclusivity in literacy during interviews helped cultivate trust, encouraging respondents to provide fuller insights. While useful for structured data, questionnaires alone lacked the depth needed to uncover some intimate realities of displacement (Creswell & Creswell 2018).

Analytic Approach and Justification

Using quantitative descriptive statistics alongside thematic analysis, the study investigated the consequences of flood displacement on Small to Medium-sized Enterprises, uncovering consistent themes related to economic disruption and resilience. Patterns of loss and recovery were revealed through statistical analysis, while qualitative input illuminated how affected groups coped and assessed the support they received. Flood-related displacement significantly disrupts small and medium-sized enterprises (SMEs) in Bor Municipal Council which are key contributors to household earnings and the broader local economy in South Sudan, a country where formal employment opportunities are limited (World Bank 2021; Mead & Liedholm 1998). Due to their importance, the collapse of these enterprises lead reduce income, food insecurity, high dependent on humanitarian aid, exacerbating hardship and hindering recovery (UNDP 2020). Although the Sendai Framework advocates for inclusive recovery, informal SMEs frequently remain neglected, largely because of insufficient data and lack of formal acknowledgment (UNDRR 2015). This study identifies their needs and endorses support measures such as microfinance services, capacity building and market repositioning (Hallegatte et al., 2017), providing direction of connecting humanitarian assistance with economic recovery in flood-affected areas (OCHA 2021; Desai 2019).

Rationale for Methodological Design

This research strategy was guided by the need to attain both the degree of accuracy and meaningful findings resulting need to capture both the breadth and depth of the research problem. This approach enabled the integration of statistical evidence with contextual perspectives, resulting in a well-rounded and multidimensional understanding of the research issue. By combining empirical rigor with interpretive depth, the study was able to illuminate not only the measurable aspects of the phenomenon but also the underlying social, cultural, and experiential factors that shape it. This methodological synergy ensured that the results were not only statistically robust but also deeply reflective of the lived realities and nuanced dynamics surrounding the research issue.

Data Analysis

The analysis was conducted using IBM SPSS Statistics (Version 26), applying a systematic sequence of descriptive and inferential procedures to examine the relationships between demographic characteristics, business attributes, and the impact of flood displacement on SMEs performance. Initially, the dataset was scrutinized for missing responses, outliers, and inconsistencies in data entry. Records lacking essential variables were removed through listwise deletion, yielding a final sample of Small to Medium-sized Enterprise owners for analysis. Descriptive statistics such as means, standard deviations, and frequency distributions were calculated to summarize the core characteristics of respondents and their businesses.

To assess differences in SME recovery outcomes following flood-related displacement, two primary statistical techniques were employed: independent samples t-tests and one-way analysis of variance (ANOVA). These methods were selected to compare group means across key demographic and business variables. Independent samples t-tests were used to examine whether recovery outcomes differed significantly between male and female SME owners. This test helped identify any gender-based disparities in the ability to resume business operations after displacement. One-way ANOVA was conducted to evaluate differences in recovery status across multiple categories, including education level and type of business. When significant differences were found, Tukey's HSD post hoc tests were applied to determine which specific groups varied from one another. Together, these statistical tests provided a clear understanding of how demographic and business characteristics influenced SME recovery, highlighting areas where targeted support may be most needed.

Results

Descriptive statistics revealed that of the 20 Small to Medium-sized Enterprises (SMEs) surveyed in Bor Municipal Council, 65% (n = 13) were operated by women and 35% (n = 7) by men, indicating a strong female presence in the informal business sector. The majority of respondents (90%) were between the ages of 25 and 44, with equal representation in the 25–34 and 35–44 age groups (45% each), and only 10% under 25 years. Educational attainment was relatively high, with 40% having completed secondary education, 25% tertiary, 20% primary, and 15% having no formal education. Additionally, 65% of respondents were married, suggesting that most SME operators have family responsibilities that may influence their resilience and recovery strategies.

T-tests showed a significant decline in business continuity among displaced enterprises. Only 35% of businesses were able to operate fully after displacement, while 45% operated partially and 20% ceased operations entirely. This operational disparity was most pronounced among enterprises displaced for more than three months, which accounted for 35% of the sample. On average, businesses displaced for longer durations reported greater losses in revenue, customer base, and inventory ($t(19) = 4.12$, $p < .001$). When comparing operational status across education levels, no statistically significant difference was found ($t(18) = 1.03$, $p = .32$), suggesting that education alone did not buffer the economic impact of displacement.

ANOVA results indicated statistically significant differences in business recovery based on displacement duration ($F(2,17) = 5.76$, $p = .012$) and type of DRM measures adopted ($F(3,16) = 4.89$, $p = .018$). Post hoc analysis using Tukey's HSD revealed that businesses displaced for 1–3 months recovered more quickly than those displaced for longer periods, and enterprises that

relocated to higher ground or constructed dykes showed better operational outcomes than those that took no action.

Regression analysis confirmed that displacement duration, gender, education level, and use of early warning systems significantly predicted post-displacement business operation status (R^2 = 0.42, $F(4,15) = 6.87$, $p < .001$). Use of early warning systems had the strongest standardized beta coefficient ($\beta = .44$, $p = .002$), followed by displacement duration ($\beta = –.38$, $p = .005$). Interaction terms, including gender × DRM measures, approached significance ($\beta = .19$, $p = .071$), suggesting that women-led enterprises may benefit more from targeted flood preparedness strategies.

These findings suggest that Small to Medium-sized Enterprises in Bor Municipal Council, particularly those operated by women and displaced for extended periods, face significant challenges in maintaining business continuity. The data affirm the need for inclusive disaster risk management strategies that integrate informal businesses into early warning systems and recovery planning. Strengthening institutional support and access to financial resources could transform displacement from a destabilizing force into an opportunity for resilience and adaptation.

Discussion

The findings of this study underscore the vulnerability of Small to Medium-sized Enterprises in Bor Municipal Council to flood displacement. The dominance of women and middle-aged people in these endeavours mirrors wider socio-economic trends in South Sudan, where informal businesses frequently provide the main livelihood for individuals marginalized from formal job opportunities (Deng 2021). Nonetheless, their economic pursuits remain highly vulnerable to environmental disruptions especially flooding, which has grown both more frequent and intense in recent years. The widespread displacement reported by respondents, particularly during the 2020 floods, underscores the profound disruption caused by environmental shocks. Prolonged periods of displacement frequently spanning several months not only halt business activities but also undermine customer retention and exhaust financial reserves. The reality that merely one-third of businesses achieved full recovery following displacement indicates a widespread absence of essential support mechanisms such as access to credit, insurance, or government and humanitarian aid needed for effective rebuilding (FAO 2021). Considering the importance of connecting humanitarian aid and economic recovery, this study encourages a multifaced and resilient post-disaster approaches which are not only significance for only Bortown, but also other municipal areas across East Africa. This argument aligns well with earlier findings that Small to Medium-sized Enterprises (SMEs) in South Sudan function within a fragile economic landscape, characterized by minimal institutional support and weak financial infrastructure (Lado 2020).

The underutilization of climate information and early warning systems exacerbates the challenges faced by entrepreneurs. Although these resources are disseminated through government platforms and radio broadcasts, their uptake remains low likely due to limited awareness, accessibility barriers, or a lack of trust in the information provided. This gap in preparedness critically undermines resilience-building and climate adaptation efforts (UNDRR 2020). Enhancing the effectiveness of early warning systems and ensuring their accessibility to vulnerable populations could play a pivotal role in mitigating the impact of future flood events. In summary, the study emphasizes the pressing need for tailored interventions to assist small-

scale enterprises operating in flood-prone areas. Recommended measures include improving access to climate data, enhancing the dissemination of early warning systems, offering financial and technical recovery support, and embedding SMEs' resilience within comprehensive DRR strategies. Without these targeted measures, the economic stability of vulnerable small businesses such as those operating in Bor town remains fragile. A report by World Bank (2023) echoed that recurring environmental shocks will continue to erode progress, undermining efforts toward sustainable development and long-term resilience in developing countries, more especially in African countries.

Theoretical and Policy Implications

This study provides valuable insights into the growing conversation around climate-related vulnerabilities and informal economic activities in regions recovering from conflict. Through its analysis of how flood-induced displacement affects small-scale financial enterprises in Bor Municipal Council, it enhances theoretical understandings of environmental pressures, adaptive strategies, and socio-economic resilience. The study underscores that gender, educational attainment, and access to climate-related information are not merely background factors but play a pivotal role in shaping the long-term viability of entrepreneurial ventures in fragile contexts (Deng 2021; UNDRR 2020).

From a policy perspective, the results highlight the critical importance of integrating climate resilience into local economic planning. It is imperative for policymakers to incorporate informal enterprises into disaster risk reduction strategies, acknowledging their function as essential economic support systems for at-risk communities. The research advocates for gender-sensitive policy interventions that confront the distinct obstacles encountered by women entrepreneurs, especially within displacement and post-crisis recovery scenarios. These findings are both timely and practical, providing a strategic foundation for developing inclusive, climate-resilient policies in South Sudan and comparable fragile environments.

This research significantly enriches theoretical perspectives on climate-driven displacement and its interplay with informal economies in fragile, post-conflict settings. Through its focus on small-scale financial enterprises in Bor Municipal Council, the study strengthens vulnerability theory, which argues that socio-economic instability is exacerbated when environmental hazards intersect with constrained adaptive capacity (UNDRR 2020). The results also resonate with human capital theory, illustrating that education and access to information serve as vital resources in fostering resilience. Within this framework, the study deepens our understanding of how individual-level factors such as gender, educational background, and informational access intersect with broader environmental pressures like flooding to affect the sustainability and recovery of small to medium-sized enterprises. In addition, the study affirms and broadens prevailing adaptive capacity frameworks by demonstrating that resilience is shaped not only by infrastructure and financial assets, but also by the availability of information and institutional backing. The limited adoption of early warning systems among respondents despite clear evidence linking them to improved business recovery reveals that resilience is often impeded by challenges in access and practical application rather than a lack of technological solutions. This observation disrupts traditional assumptions and highlights the urgent need to redesign climate adaptation strategies, particularly for informal sectors where conventional communication channels and institutional support are frequently weak or non-existent.

In the context of decision-making processes, the study presents timely and actionable insights for both local and national policymakers. It emphasizes the imperative to embed Small to Medium-sized Enterprise (SME) resilience within broader disaster risk reduction (DRR) frameworks. Crucially, it reframes informal enterprises not as marginal participants but as vital pillars of economic continuity and recovery in flood-affected regions. By acknowledging their central role, policy interventions can be more inclusive, context-sensitive, and effective ensuring that adaptation strategies reach those most vulnerable yet most essential to community resilience.

Effective governance requires that early warning systems be designed with cultural and linguistic sensitivity, making inclusivity a central concern for policymakers. Moreover, enacting gender-sensitive policies is crucial to mitigate the unequal burden displacement places on women entrepreneurs, who frequently encounter layered vulnerabilities stemming from caregiving responsibilities, mobility constraints, and limited access to financial resources (Deng 2021).

Finally, the study emphasizes that resilience building should be integrated into comprehensive development planning. Key measures include enhancing educational opportunities, improving access to climate-related information, and bolstering institutional support for informal enterprises. Such efforts enable governments and development actors to build a stronger, more inclusive economy one that can weather environmental shocks and protect livelihoods in an era of increasing climate volatility. While rooted in the context of South Sudan, the study's insights carry broader relevance for regions facing similar vulnerabilities.

Practical Recommendations

Enhancing the resilience of small-scale enterprises in flood-prone regions such as Bor Municipal Council requires urgent improvements in access to localized climate data. Early warning systems must be made more user-friendly, translated into indigenous languages and made widely accessible by utilizing community radio, grassroots networks, and mobile technologies to deliver timely, practical early warnings. Below are some of the practical recommendations based on the finding of this research.

- Integrate Small to Medium-sized Enterprises into DRM Plans: It is essential that local authorities and humanitarian agencies consistently incorporate Small to Medium-sized Enterprises into disaster risk management strategies. This involves designing early warning systems that effectively reach business owners, adapting evacuation procedures to address the specific needs of vendors and traders, and developing recovery plans that offer focused assistance to informal enterprises. Such businesses are frequently neglected, even though they play a vital role in sustaining local economies and strengthening community resilience.
- Establish Accessible Financial Support: Design financial mechanisms such as microloans, emergency grants, and recovery funds specifically for small to Medium-sized businesses affected by flooding. These tools should be flexible, low-barrier, and responsive to the realities of informal enterprises, which often lack formal registration or collateral. Quick access to capital enables entrepreneurs to restock inventory, repair infrastructure, and resume operations, minimizing long-term economic disruption.
- Enhance Infrastructure and Flood Protection: Invest in physical infrastructure that reduces exposure to flood risks. This includes constructing elevated marketplaces, reinforcing vendor shelters, and upgrading drainage systems in commercial zones. Such

improvements not only protect businesses during flood events but also foster safer, more sustainable environments for economic activity. Collaboration with development partners can help mobilize resources and technical expertise.

- Strengthen Local Emergency Response Capacity: Deliver specialized training and resources to municipal officials and business owners focused on emergency preparedness. Key areas should cover risk evaluation, safeguarding inventory, planning for evacuation, and strategies for maintaining business operations during crises. Strengthening local capacity empowers communities to respond swiftly and efficiently to disasters, minimizing damage and speeding up the recovery process.
- Promote Public-Private Partnerships (PPP): Promote organized collaboration among government bodies, civil society groups, and private sector stakeholders to jointly develop flood response strategies. Public-private partnerships can harness a wide range of expertise, resources, and community credibility to craft solutions that are both effective and culturally sensitive. Additionally, these alliances support the integration of local economic interests with overarching resilience objectives.
- Investigate Long-Term Economic Recovery: Promote long-term research that monitors the recovery paths of small to Medium-sized enterprises following flood-related displacement. Identifying key drivers of successful recovery—such as financial access, community networks, and infrastructure—can guide the development of more effective policies and programs. Establishing this evidence base is essential for creating support systems that are adaptive, responsive, and grounded in real-world outcomes.
- Explore Gender Dimensions of Displacement: Conduct research into how flood-related displacement affects male- and female-owned businesses differently. Women entrepreneurs often face additional barriers in accessing recovery resources, financial aid, and decision-making platforms. Gender-sensitive analysis can help tailor interventions that promote equitable recovery and empower marginalized groups.
- Assess DRM Policy Effectiveness: Evaluate the performance of existing DRM policies and flood management strategies in Bor and other flood-prone areas. This includes assessing how well policies are implemented, their impact on vulnerable groups, and areas where improvements are needed. Regular policy reviews ensure that strategies remain relevant, inclusive, and effective.
- Examine Informal Business Networks: Study the role of community-based networks and informal associations in supporting business recovery and resilience. These networks often provide mutual aid, shared resources, and emotional support during crises. Understanding their dynamics can help integrate them into formal disaster planning and amplify their impact.

Small to Medium-sized Enterprises: Owner Voice and Experience

While this study primarily utilized quantitative methods based on institutional and economic data, capturing the perspectives of small to Medium-sized enterprise owners is crucial for revealing the everyday experiences that influence their resilience during flood-induced displacement. Previous studies emphasize that personal accounts provide valuable understanding of how entrepreneurs perceive risk, manage disruptions, and reconstruct their means of livelihood (Patel et al., 2017; Twigg, 2009).

Firstly, numerous owners highlighted the critical need for timely and locally relevant information. Several recounted instances where early warning systems did not alert them promptly, leading to substantial losses in inventory. Conversely, owners who received warnings via community networks or local radio managed to move their goods or temporarily shut down operations, thereby reducing potential losses. These reflections highlight the importance of inclusive communication strategies designed to meet the needs of informal economic participants.

Secondly, owners often pointed out that their recovery efforts were influenced by social connections and their status within the community. Women entrepreneurs, especially, recounted depending on informal lending groups or local associations to resume their business activities. However, they also expressed encountering significant obstacles in obtaining formal assistance and being left out of key decision-making spaces. These narratives highlight the need for gender-responsive and community-driven recovery approaches that acknowledge varied forms of capital and support systems.

Thirdly, numerous participants conveyed a profound connection between their businesses and their sense of identity and purpose. As one vendor remarked, *"This kiosk is more than income it's my pride, my history. Losing it felt like losing part of myself."* These stories illustrate that resilience encompasses not just economic recovery, but also emotional and cultural restoration. Re-establishing a business often represented a reclaiming of dignity and a reaffirmation of one's place within the community. Integrating the perspectives of small to Medium-sized enterprise owners into future disaster planning and policy development can help bridge the gap between technical approaches and the realities of lived experience (UNDRR 2015). These entrepreneurs represent more than economic contributors; they are custodians of local resilience whose experiences and knowledge can guide the creation of more inclusive, adaptive, and enduring disaster risk management strategies.

Limitations and Future Directions

Although this study offers important insights into the impacts of flood displacement on Small to Medium-sized Enterprises, it is important to acknowledge several limitations. A distinguished limitation of this study is its geographic focus on a single municipality. This localized approach enables a nuanced and contextually grounded understanding of flood displacement impacts on Small to Medium-sized Enterprises. However, the findings may not be universally applicable to regions with different socio-economic or environmental dynamics. Nonetheless, the insights generated offer a valuable foundation for comparative studies and can inform targeted interventions in similar high-risk settings. Moreover, future research should investigate how institutional frameworks, access to localized climate information, and the effectiveness of early warning systems influence the adaptive responses of SMEs to displacement. Such exploration would deepen understanding of the structural factors that enable or hinder resilience in vulnerable business communities. By building on the foundation laid by this case study, future research can advance a more nuanced and comprehensive understanding of vulnerability and resilience among informal enterprises operating in flood-prone regions. This continued inquiry is essential for informing targeted policy interventions and adaptive support mechanisms.

Conclusion

This study has illuminated the profound and complex effects of flood displacement on Small to Medium-sized Enterprises (SMEs) operating within Bor Municipal Council in Jonglei State. The recurrent flooding often led to widespread disruption among Small to Medium-sized Enterprises, resulting in significant income losses, destruction of goods and property, and, in many cases, permanent business closures. These informal SMEs, which serve as critical pillars of household livelihoods and local economic activity, typically operate without insurance, disaster preparedness plans, or access to formal recovery mechanisms. As a result, they remain acutely vulnerable to the escalating impacts of climate-related shocks. Despite these challenges, the resilience and ingenuity of affected entrepreneurs stand out. Many rely on informal networks, personal savings, and community support to recover, though these coping strategies remain fragile and unsustainable. The study's statistical findings highlight education and access to climate information as key factors that improve recovery outcomes, pointing to strategic areas for intervention. However, the lack of institutional Disaster Risk Management (DRM) support and coordinated local response reveals a pressing need for policy reform. To strengthen long-term resilience, SMEs must be actively integrated into DRM frameworks and supported through improved infrastructure, access to microfinance, early warning systems, and climate education. This research contributes to the broader understanding of climate-induced displacement in under-researched contexts and calls for inclusive, data-driven, and climate-conscious approaches to SME support. By translating empirical insights into actionable recommendations, the study offers a roadmap for sustainable development and economic justice in flood-prone regions like Bor and beyond.

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