

Research Article

Designing Adaptive Community Innovation Frameworks to Foster Sustainable Micro Entrepreneurship and Socio Economic Resilience in Emerging Local Economies

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Abstract: This study explores the development of an adaptive community innovation framework designed to foster sustainable micro entrepreneurship and enhance socio economic resilience in emerging local economies. Emerging economies face numerous challenges, including financial constraints, infrastructural deficiencies, and limited community engagement, all of which hinder the growth of micro entrepreneurial ventures. These challenges are further exacerbated by rapid socio economic changes and global market integration. The main objective of this research is to design a framework that is both flexible and context sensitive, aligning with local needs and enabling long term sustainability and resilience. To achieve this, the study adopts a mixed methods approach, combining both qualitative and quantitative methods. A participatory community analysis is conducted to identify local challenges and opportunities for innovation, ensuring the framework is grounded in the community's unique context. The design of the framework is iterative, incorporating continuous feedback from local stakeholders, and empirical data from pilot implementations. The empirical validation of the framework in selected local economic initiatives reveals that the adaptive model significantly improves entrepreneurial capacity, market access, and resource utilization. Additionally, the framework strengthens community engagement and enhances the adaptive capacity of local economies, leading to increased resilience and long term sustainability. The study concludes that the adaptive framework provides a practical, scalable model for addressing the structural limitations of emerging local economies and promoting inclusive, sustainable economic growth. The research findings suggest that adopting such adaptive, community driven frameworks can facilitate effective responses to local challenges and foster resilient micro enterprise ecosystems. Policymakers, NGOs, and community organizations are encouraged to incorporate adaptive approaches in their efforts to support sustainable development. Future research should test the framework in diverse cultural and sectoral contexts to further refine its applicability and effectiveness.

Keywords: Adaptive Framework; Community Participation; Micro Entrepreneurship; Socio Economic Resilience; Sustainable Innovation.

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1. Introduction

Emerging local economies, often marked by rapid GDP growth despite relatively low GDP levels, are gaining prominence in the global economic arena. These economies, frequently referred to in groups such as BRICS (Brazil, Russia, India, and China), face unique challenges that distinguish them from developed nations. While emerging economies often exhibit dynamic growth, they also encounter institutional voids, underdeveloped infrastructure, and diverse consumer preferences that complicate integration into global markets [1]. Addressing these challenges is crucial for sustainable development and resilience.

Emerging economies are confronted with several structural issues that hinder their growth and stability. One of the key challenges is early deindustrialization, which reduces the economic base of these countries and makes them more vulnerable to global market

fluctuations. Additionally, job polarization and aging populations further stress labor markets, making it difficult to maintain economic stability [2]. The shift towards sustainable practices is also impeded by resource constraints and limited infrastructure, hindering the implementation of green initiatives [3]. Moreover, the demand for substantial investments, both domestic and foreign, remains high to support these economies' development and infrastructure needs [1].

Micro entrepreneurship plays a vital role in the socio economic resilience of emerging economies by fostering self reliance and providing sustainable growth opportunities at the grassroots level. Sustainable micro entrepreneurship empowers marginalized communities, enhancing their ability to cope with economic challenges. It also contributes to social inclusion by integrating vulnerable groups, such as women, youth, and people with disabilities, into the economic mainstream [4], [5]. By promoting entrepreneurship at the local level, these economies can reduce welfare dependency and increase economic opportunities for all.

The benefits of sustainable micro entrepreneurship extend across several dimensions. Economically, it provides resources and opportunities that help alleviate poverty and improve living standards in disadvantaged communities [4]. Socially, it addresses barriers such as limited education and market access, thus fostering social cohesion and inclusion [6]. Environmentally, micro entrepreneurs who adopt sustainable practices, such as renewable energy use and waste reduction, can contribute significantly to environmental sustainability [3], [7]. Furthermore, micro entrepreneurship enhances community resilience by enabling local economies to better adapt to economic shocks and maintain stability [7].

Micro entrepreneurship strengthens the resilience of local economies by fostering adaptability and self sufficiency. In emerging economies, where formal sector employment may be scarce, micro entrepreneurship serves as a critical alternative. It empowers individuals to generate income, diversify their economic activities, and mitigate the effects of external shocks. By providing communities with the tools to adapt, micro entrepreneurship enhances overall regional resilience, ensuring that local economies remain stable and continue to grow despite global economic challenges [6], [7].

The primary objective of this study is to design an adaptive community innovation framework that can respond effectively to the dynamic and rapidly changing socio economic environments in emerging local economies. This framework aims to leverage the diverse knowledge, skills, and practices within communities to improve local quality of life and foster inclusive innovation. By integrating various actors, such as local universities, enterprises, and citizens, the framework seeks to align visions and objectives, orienting innovation towards solving local problems and promoting governance in the adoption of new initiatives [8], [9]. This approach is essential for enabling communities to thrive amid rapid socio economic transformations and foster sustainable growth.

Addressing structural limitations within communities is vital for enhancing their adaptability to the evolving socio economic landscape. Emerging economies face numerous challenges, including institutional voids, limited infrastructure, and the difficulty of integrating into global markets while managing local competition [10]. Overcoming these limitations is crucial for creating resilient communities capable of responding to rapid changes driven by globalization, environmental shifts, and market integration. Building adaptable frameworks that enable communities to respond quickly and efficiently to such changes can help address these challenges and improve long term sustainability [11].

One of the key components of this study's framework is the promotion of inclusive innovation. By creating communication spaces and collaborative networks, communities can better align diverse perspectives and resources towards common goals. These inclusive processes are essential for addressing local needs, ensuring that all community members, especially marginalized groups, benefit from development efforts [9]. Inclusive innovation allows for the integration of local knowledge and skills into decision making processes, improving the relevance and effectiveness of initiatives and ensuring that innovation is responsive to the specific challenges faced by the community [8], [11].

Building resilience is another crucial aspect of the adaptive framework. Structural limitations often hinder a community's ability to respond to and recover from socio economic and environmental disruptions. An adaptive framework can enhance resilience by promoting strategic foresight, collaborative governance, and continuous learning [12]. By fostering a proactive approach to community governance and decision making, the framework encourages communities to develop the necessary capacities to manage change effectively. This approach enables communities to not only withstand challenges but also emerge stronger and more capable of facing future disruptions [13].

The adaptive framework's focus on sustainability is essential for long term community development. By addressing structural limitations, the framework allows for the creation of sustainable complex adaptive systems (CAS) that can evolve and adapt over time. This adaptability is vital for ensuring that community driven development initiatives remain relevant and effective as socio economic and environmental conditions change [8], [14]. By promoting systems that can learn, evolve, and incorporate feedback, the framework ensures that community innovations contribute to sustainable development and the well being of all stakeholders involved [15], [16].

2. Literature Review

Review of Existing Frameworks and Models for Community Entrepreneurship Development

Various frameworks have been developed to support community entrepreneurship, each focusing on the integration of local resources and capacities to foster economic growth. One such framework is the Community Entrepreneurship Development (CED) framework, which emphasizes the use of community capital natural, human, and social to drive entrepreneurial initiatives. By leveraging these forms of capital, the CED framework aims to create sustainable development at the community level, ensuring that local businesses contribute to the broader regional economy [17]. Another influential model is the Rural Development and Poverty Alleviation (RDAP) model, which focuses on community participation as a means to utilize local resources for sustainable economic growth, incorporating social and environmental dimensions into the entrepreneurial process [18].

Additionally, the Smart Community Development Framework (SCDF) aims to optimize sustainable development by introducing clean technologies and empowering community decision making. This framework advocates for a model that balances innovation with practical solutions, allowing communities to address their unique challenges while fostering growth [11]. Together, these frameworks highlight the importance of community driven entrepreneurship, ensuring that local economies can develop in an inclusive, sustainable, and adaptive manner. These models provide valuable insights into the role of communities in driving economic resilience and fostering entrepreneurship in a rapidly changing global landscape.

The Role of Micro Entrepreneurship in Local Economic Resilience

Micro entrepreneurship plays a critical role in enhancing local economic resilience, especially in areas prone to natural disasters or economic instability. Micro enterprises often provide essential goods and services, which not only address local needs but also contribute to poverty reduction and regional development [19]. These small businesses are often the backbone of local economies, ensuring that communities can maintain their functions despite external shocks. Studies have shown that micro enterprises contribute significantly to job creation, which helps stabilize the economy by providing income to families and reducing dependence on external support [20]. This stability is particularly important in rural or disaster prone areas, where larger enterprises may not be present or able to operate effectively.

Furthermore, micro entrepreneurship enhances community resilience by fostering self reliance and sustainability. Through local entrepreneurship, communities are better equipped to respond to disruptions, whether economic or environmental, and continue to meet the needs of their populations. By engaging in entrepreneurial activities, individuals build skills, networks, and resources that enable them to adapt to changing circumstances, thus contributing to long term economic stability and social cohesion [4]. As micro entrepreneurs often rely on local knowledge and community based solutions, their businesses are typically more adaptable and able to respond to the unique challenges faced by their communities, ensuring their continued survival in volatile socio economic environments.

Key Challenges Faced by Micro Entrepreneurs in Emerging Economies, Including Financial, Infrastructural, and Social Constraints

Micro entrepreneurs in emerging economies face a variety of challenges that hinder their growth and ability to contribute effectively to local economic resilience. One of the primary barriers is financial constraints, as micro entrepreneurs often struggle to access essential funding. Traditional financial institutions typically view micro enterprises as high risk ventures, making it difficult for entrepreneurs to secure loans or investments [21]. While

microfinance institutions have attempted to address this issue by providing small loans, the amounts offered are often insufficient to allow for significant business growth or sustainability. Furthermore, entrepreneurs may face difficulties in managing finances, such as understanding complex financial systems and dealing with fluctuating costs and income levels [22].

In addition to financial challenges, infrastructural deficiencies pose significant barriers to the growth of micro enterprises in emerging economies. Poor transportation networks, unreliable electricity, and inadequate communication systems can severely limit business operations and market access [23]. These infrastructural challenges hinder entrepreneurs from reaching broader markets, obtaining raw materials, or distributing their products efficiently. Moreover, social and cultural constraints, such as gender biases and social exclusion, further complicate the situation for specific groups, especially women entrepreneurs [24]. Social and cultural norms can limit women's participation in the entrepreneurial sector, reducing their ability to access resources and networks necessary for business growth. These multifaceted challenges highlight the need for tailored interventions and community based solutions to support micro entrepreneurs in overcoming structural barriers and achieving long term success in emerging economies.

Previous Research on Adaptive Systems in Entrepreneurship and Community Development

Research on adaptive systems in the context of entrepreneurship and community development has explored the dynamic and non linear evolution of entrepreneurial ecosystems (EEs) as complex adaptive systems (CAS). For example, studies have examined the development of the Singapore entrepreneurial ecosystem from 1970 to 2018 using chaos theory, revealing how entrepreneurial ecosystems evolve in response to both internal and external factors [25]. These studies emphasize the necessity of understanding entrepreneurship as an adaptive process that requires continuous adjustment and response to changes in the market, policy, and global conditions. Similarly, community level development has been analyzed through the lens of CAS theory, which posits that successful community development initiatives must be adaptive, context sensitive, and rooted in the specific needs and challenges of local populations [26].

The concept of entrepreneurial communities has also been explored using systems thinking and living systems theory. This approach highlights the interconnectedness of macro level economic policies and micro level entrepreneurial activities, emphasizing the holistic nature of economic development. According to this perspective, entrepreneurial communities should not only be seen as isolated business entities but as part of a broader system where local initiatives contribute to regional and even national economic growth [27]. By focusing on systems based frameworks, previous research underscores the importance of understanding the adaptive nature of entrepreneurial ecosystems and the need for flexible, evolving approaches to community development.

Gap in the Literature Regarding Flexible, Context Sensitive Approaches for Fostering Long Term Sustainability in Micro Entrepreneurship

While existing research has provided valuable insights into the role of adaptive systems in entrepreneurship and community development, there remains a significant gap in developing context sensitive approaches that ensure long term sustainability in micro entrepreneurship. Much of the current literature on sustainable entrepreneurship focuses on generalized models and theoretical frameworks that do not fully address the unique challenges faced by micro entrepreneurs in diverse socio economic environments. For instance, while frameworks like the Integrated Developmental Entrepreneurship Resiliency Framework (IDERF) propose multi level sustainment factors, there is limited empirical testing of these models in varying cultural and economic contexts [28]. The absence of context sensitive frameworks limits the practical applicability of these models in addressing the specific needs of micro entrepreneurs, especially in emerging economies.

Furthermore, existing research often overlooks the importance of integrating resilience and sustainability education with practical entrepreneurship training in real world economic contexts. Many studies focus on the theoretical aspects of sustainable entrepreneurship, but fail to provide actionable frameworks that can be directly applied by micro entrepreneurs to overcome financial, infrastructural, and social constraints [29]. This gap underscores the need for more flexible, adaptive models that not only foster entrepreneurial resilience but also

empower micro entrepreneurs with the tools and knowledge necessary to thrive in rapidly changing socio economic environments. Research must focus on designing frameworks that bridge the divide between theoretical knowledge and practical application, ensuring that micro entrepreneurs are equipped to face real world challenges with context sensitive strategies that lead to sustainable success [30].

3. Proposed Method

This study uses a mixed methods approach, combining qualitative and quantitative research to design an adaptive community innovation framework. The qualitative aspect involves participatory community analysis, where local stakeholders contribute to identifying challenges and opportunities for innovation, ensuring that the framework reflects the community's needs. The framework design process is iterative, incorporating community feedback and empirical data to ensure flexibility and context sensitivity. The adaptive model emphasizes the integration of local knowledge, community participation, and adaptive governance to foster sustainable development. Empirical validation is conducted by testing the framework in selected local economic initiatives, measuring its impact on economic performance, social inclusion, and environmental sustainability. Data collection includes qualitative interviews, surveys, and case studies to gather insights from community members and entrepreneurs. Thematic analysis is used for qualitative data to identify patterns and themes, while statistical methods like regression analysis assess the framework's effectiveness. This approach allows for a comprehensive understanding of the framework's impact on community resilience and long term sustainability, offering actionable insights for further refinement and scalability in other contexts. The study aims to provide practical solutions for fostering sustainable micro entrepreneurship and socio economic resilience in emerging economies.

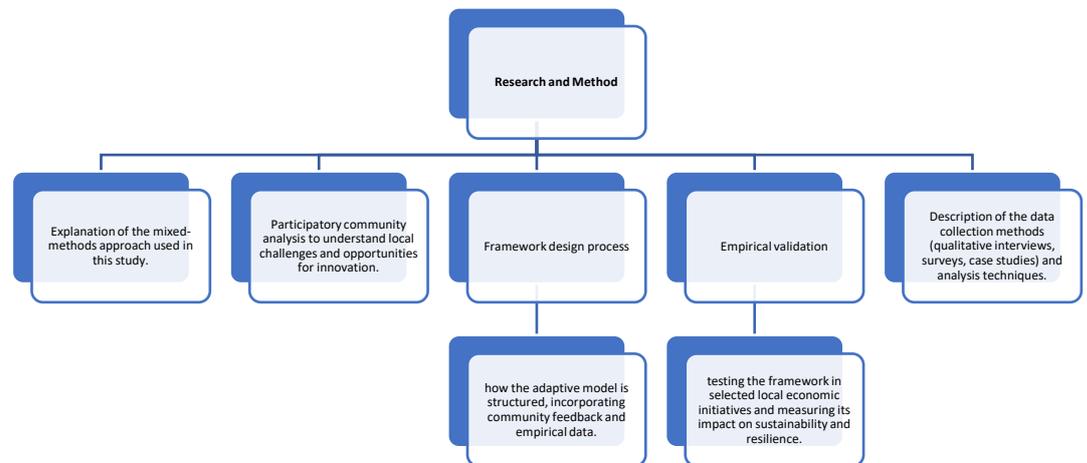


Figure 1. Research Methodology Flowchart Structure.

Mixed Methods Approach

This study utilizes a mixed methods approach, combining both qualitative and quantitative methods to provide a comprehensive understanding of the local community's challenges, the opportunities for innovation, and the potential impact of the adaptive framework. The qualitative methods, including in depth interviews and case studies, allow for a rich exploration of community experiences, local knowledge, and the contextual factors influencing innovation. These methods provide insights into the lived experiences of community members, ensuring that the framework developed is grounded in the real needs and challenges of the community.

On the other hand, quantitative methods such as surveys and statistical analyses enable the study to assess the impact of the adaptive framework in measurable terms. By integrating both types of data, the mixed methods approach provides a fuller picture of the effectiveness

of the framework in fostering local innovation, economic resilience, and sustainability. The combination of qualitative and quantitative data also supports the triangulation of findings, enhancing the validity and reliability of the study's conclusions.

Participatory Community Analysis

A key element of this study is the participatory community analysis, which involves actively engaging community members in identifying local challenges and opportunities for innovation. This approach ensures that the community's insights and needs are at the center of the framework design, fostering ownership and increasing the likelihood of successful implementation. Through workshops, focus groups, and community meetings, the study gathers diverse perspectives from local residents, business owners, and other stakeholders, allowing them to contribute to the identification of priority areas for innovation. This participatory process ensures that the framework is not only context sensitive but also reflective of the aspirations and capabilities of the community.

In addition to identifying challenges, the participatory analysis also helps uncover hidden opportunities within the community, such as untapped local resources or underutilized skills and knowledge. By including a broad cross section of the community in this process, the study promotes inclusive innovation, ensuring that all voices are heard and that the resulting framework is comprehensive and equitable. This collaborative approach fosters a sense of community agency, empowering local stakeholders to take an active role in shaping the future of their community's development.

Framework Design Process

The design of the adaptive framework follows a collaborative and iterative process, integrating feedback from the participatory community analysis and empirical data. The framework is structured around core components such as local knowledge integration, community participation, and adaptive governance, which enable the model to remain flexible and responsive to the community's evolving needs. The process begins with defining the vision and objectives, followed by the identification of key local resources and capacities that can support innovation. Feedback from community stakeholders is continuously incorporated throughout the design phase, ensuring that the framework is aligned with the local context and remains adaptable to changing circumstances.

The framework is built on a foundation of systems thinking, recognizing the interconnectedness of various factors such as economic, social, and environmental dimensions of community development. This holistic approach ensures that the framework does not just address isolated problems but creates an environment where various initiatives can work together synergistically to drive sustainable development. The iterative nature of the framework design process allows for adjustments and refinements based on ongoing community feedback and real world challenges.

Empirical Validation

To assess the effectiveness of the framework, empirical validation is conducted through pilot testing in selected local economic initiatives. These initiatives are chosen based on their relevance to the framework's goals and their potential to benefit from the innovation strategies proposed. The framework is implemented in these pilot communities, where its impact on local economic performance, social inclusion, and environmental sustainability is carefully measured. The evaluation focuses on specific metrics such as community participation rates, economic growth, and resilience to external shocks, providing quantifiable evidence of the framework's effectiveness.

In addition to measuring outcomes, the empirical validation process includes ongoing feedback from local stakeholders, allowing for real time adjustments to the framework. This ensures that the framework remains flexible and responsive, maximizing its impact on community resilience and sustainable development. By testing the framework in diverse settings, the study gathers valuable data on how it can be refined and scaled to other communities facing similar challenges.

Data Collection Methods and Analysis Techniques

The study employs a range of data collection methods to capture both qualitative and quantitative insights. Qualitative interviews are conducted with community leaders, entrepreneurs, and local experts to gain an in depth understanding of the community's challenges and aspirations. These interviews provide rich, narrative data that reveal the underlying factors influencing community development and innovation. Surveys are distributed to a broader sample of community members to gather quantitative data on key indicators such as economic well being, community engagement, and perceptions of the proposed framework's impact. Finally, case studies of successful local initiatives are used to illustrate the practical application of the framework and identify best practices.

Data analysis involves thematic analysis for qualitative data, allowing the study to identify common themes and patterns in community experiences and perspectives. For quantitative data, statistical methods such as regression analysis are used to evaluate the relationship between the implementation of the framework and changes in community indicators. The combination of these analytical techniques allows the study to provide a comprehensive evaluation of the framework's impact and identify areas for improvement.

4. Results and Discussion

The empirical validation of the adaptive community innovation framework demonstrated positive outcomes in enhancing entrepreneurial capacity and socio economic resilience in local communities. Entrepreneurs reported improved business skills, resource management, and access to new markets, leading to more sustainable business practices. The framework's participatory approach promoted community engagement, fostering a sense of ownership and collaboration among local stakeholders, which in turn improved business resilience. Financial constraints were mitigated by incorporating community based financing models, while local resources were better utilized to address infrastructural challenges. The framework also contributed to economic stability by creating new business opportunities and generating employment, which helped communities withstand economic and environmental shocks. Furthermore, the adaptive capacity of the communities was enhanced, allowing them to respond effectively to external disruptions. This context sensitive, community driven approach proved to be essential in promoting long term sustainability in micro entrepreneurship and strengthening local economic resilience. The study's findings highlight the significance of adaptive frameworks that are flexible and tailored to local needs, ensuring that communities remain resilient in the face of evolving socio economic conditions. This approach demonstrates the value of inclusive innovation and collaborative governance in fostering sustainable development at the grassroots level.

Results

The empirical validation of the adaptive framework in selected local economic initiatives revealed promising outcomes. The framework significantly enhanced entrepreneurial capacity within the communities, with local entrepreneurs reporting improved business skills, better resource management, and increased market access. This was particularly evident in areas where entrepreneurs leveraged community based resources more effectively, optimizing local assets to sustain their businesses. Additionally, the framework promoted community engagement, with stakeholders actively participating in decision making processes, fostering a sense of ownership and collective responsibility. The increased collaboration between local actors, including businesses, government, and citizens, resulted in more sustainable business practices and greater resilience to economic challenges.

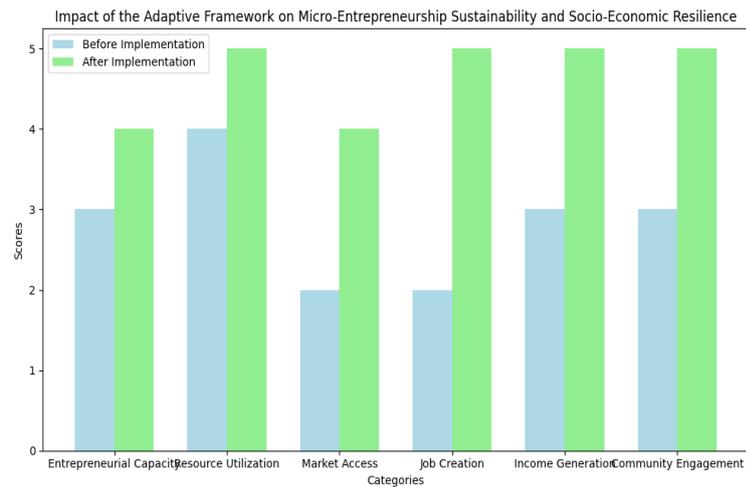


Figure 2. Impact of the Adaptive Framework on Micro Entrepreneurship Sustainability and Socio Economic Resilience.

The bar chart above illustrates the impact of the adaptive framework on micro entrepreneurship sustainability and socio economic resilience, comparing key performance indicators before and after implementation. The data highlights substantial improvements across all measured categories, including entrepreneurial capacity, resource utilization, market access, job creation, income generation, and community engagement. Among these, entrepreneurial capacity and market access saw the most significant increases, suggesting that the framework effectively enhanced local entrepreneurs' ability to manage their businesses and access broader markets. Job creation and income generation also improved, reflecting the framework's positive influence on local economic growth and job opportunities. Additionally, community engagement showed a marked improvement, demonstrating the success of the participatory approach in fostering collaboration and collective problem solving within the community. These results underscore the framework's role in strengthening local economies, improving entrepreneurial skills, and promoting inclusive growth, thereby enhancing the overall resilience and sustainability of the community.

The implementation also demonstrated positive impacts on socio economic resilience. Communities that adopted the framework showed improvements in local economic performance, particularly in terms of job creation and income generation. Entrepreneurs were better equipped to adapt to external economic shocks, which contributed to the overall stability of the local economy. Additionally, the framework's focus on adaptive capacity allowed communities to respond more effectively to environmental and market fluctuations, ensuring that businesses could withstand and recover from disruptions. The results indicate that the adaptive framework can significantly improve community resilience, making local economies more sustainable in the face of both economic and environmental challenges.

Discussion

The results confirm that the adaptive community innovation framework effectively addresses several structural limitations identified in the literature, including financial constraints, lack of infrastructure, and social barriers. By incorporating community based financing models and improving access to local resources, the framework mitigated some of the financial challenges faced by micro entrepreneurs. Additionally, the framework's participatory nature ensured that it was tailored to the specific needs of each community, addressing local infrastructural deficiencies by connecting entrepreneurs with relevant resources and networks. This context sensitive approach ensured that the framework was not only practical but also sustainable, promoting long term growth.

Furthermore, the impact on micro entrepreneurship sustainability was significant. Entrepreneurs reported improved resource utilization, which enabled them to operate more efficiently and expand their businesses. The increased market access provided through the framework also helped businesses grow by connecting them to new customers and suppliers, ultimately fostering greater business stability. These findings are consistent with prior research that highlights the importance of community driven innovation in enhancing the sustainability of micro enterprises. The framework's adaptability was key to its success, as it allowed businesses to remain flexible and resilient in the face of evolving market conditions.

The socio economic resilience of the communities was notably enhanced by the framework. The increased community engagement resulted in stronger local networks and partnerships, which fostered collaboration and collective problem solving. Additionally, the adaptive capacity built through the framework enabled communities to quickly adjust to market and environmental changes, reducing vulnerabilities and boosting long term economic stability. The focus on inclusive growth ensured that all community members, particularly marginalized groups, benefited from the development initiatives. The results highlight the importance of a holistic, community centered approach in building resilient local economies, underscoring the need for continuous feedback and adaptation to local contexts.

5. Comparison

The proposed adaptive framework offers significant advantages over traditional, static community entrepreneurship models. Unlike conventional models, which often follow rigid, one size fits all approaches, the adaptive framework is flexible and context responsive, allowing for continuous adjustments based on local needs and evolving challenges. Traditional models typically do not account for the dynamic nature of local economies and communities, often failing to address the specific contextual factors that can influence the success of entrepreneurship. The adaptive framework, by contrast, integrates community feedback, ensuring that it is tailored to the unique characteristics of each community. This flexibility enables it to be more effective in fostering long term, sustainable development.

The advantages of a flexible, context responsive approach are evident in several key areas. First, the adaptive framework ensures better alignment with local needs, as it directly incorporates input from community members, businesses, and other stakeholders. This results in solutions that are more relevant and impactful, as they reflect the community's priorities and challenges. Second, the framework promotes increased resilience by allowing communities to adapt to changing socio economic conditions, external shocks, and environmental factors. In contrast, traditional models often fail to equip communities with the tools needed to manage these dynamic changes. Finally, the adaptive framework supports long term sustainability by fostering local ownership, collaboration, and continuous learning, which are crucial for maintaining progress over time. This is in stark contrast to static models, which may not evolve to meet the needs of future generations.

When comparing the outcomes in communities using the adaptive framework versus those using conventional models, the results highlight the framework's superior effectiveness in fostering micro entrepreneurship sustainability and socio economic resilience. Communities that adopted the adaptive framework showed notable improvements in entrepreneurial capacity, market access, and resource utilization, leading to more robust and sustainable businesses. In contrast, communities relying on conventional models struggled with limited growth, financial instability, and difficulty accessing broader markets. Furthermore, the adaptive framework led to stronger community engagement and collaboration, fostering a sense of shared responsibility for local development. In comparison, traditional models often led to fragmented efforts with limited involvement from local stakeholders. Overall, the adaptive framework demonstrated a greater ability to promote sustainable, resilient, and inclusive community entrepreneurship than conventional, static approaches.

6. Conclusions

This study's findings demonstrate the significant potential of the adaptive community innovation framework in fostering sustainable micro entrepreneurship within emerging local economies. The empirical validation revealed that the framework effectively enhances entrepreneurial capacity, market access, and resource utilization, resulting in more resilient and sustainable businesses. By addressing structural limitations, such as financial constraints and infrastructural deficiencies, and promoting inclusive innovation, the framework ensures that local communities can thrive in dynamic and rapidly changing socio economic environments. This adaptability makes it particularly relevant for emerging economies that face unique challenges, offering a practical model for fostering sustainable development.

The adaptive community innovation framework contributes significantly to enhancing socio economic resilience by improving community engagement, fostering adaptive capacity, and driving local economic growth. By empowering community members to actively participate in decision making and business development processes, the framework encourages a sense of ownership and collective responsibility. The resulting collaboration and

strategic foresight strengthen the ability of communities to respond to external shocks, whether economic, environmental, or social. As a result, the framework fosters long term stability and growth, ensuring that local economies are better equipped to handle future challenges.

The study's findings have several policy and practical implications for local governments, NGOs, and community organizations. Policymakers should consider adopting and integrating adaptive frameworks into their development strategies to support sustainable micro entrepreneurship and socio economic resilience. NGOs and community organizations can play a vital role in facilitating community engagement and ensuring that local needs and priorities are reflected in the framework's design and implementation. Furthermore, local governments should invest in building infrastructure that supports adaptive innovation, including digital technologies, financial services, and education systems that foster entrepreneurial skills.

Finally, future research should explore the applicability and scalability of adaptive frameworks in other emerging economies. Researchers should focus on cross cultural validation of the framework and investigate its impact in diverse contexts to refine its components and enhance its adaptability. Further studies could also explore sector specific models within the framework to address the unique needs of different industries, such as agriculture, tourism, or technology, ensuring that the framework is truly comprehensive and applicable across various local economies.

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