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Linkage between community resilience and participation, and social sustainability: Insights from the challenges of urban apartment residents in Yangon, Myanmar

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Abstract: All over the world, urban communities face several pressures such as natural hazards, climate change, and other urban challenges. Yangon, the former capital city of the developing country, Myanmar also faces poor infrastructure and limited resources, complicating efforts to reduce risk, and increasing its vulnerability to various shocks and emergencies. Especially in Yangon's urban areas, an important aspect that seems to be lacking is maintaining the social aspect of sustainability and enhancing community resilience and participation. By approaching the conceptualizations and applying them through qualitative methods, including interviews and questionnaires, this paper explores a holistic understanding of the challenges and barriers faced by urban apartment residents in downtown Yangon, focusing on maintaining resilience and enhancing the overall well-being of their daily lives. Our findings contribute to the theoretical conceptualizations and empirical understanding of urban lifestyle by exploring descriptive analysis of how apartment residents face weak social bondings and social illness. As a result, we proposed political recommendations and highlighted the critical need to promote long-term social sustainability not only to address immediate urban challenges but also to promote their resilience against a variety of future challenges. Although the outcome of this study has focused on specific suggestions for Yangon, this paper provides original insight into effective strategies for building social bonding and resilience, aiming to impact future urban studies and inspire actionable solutions that enhance the social well-being of its population and encourage equitable development across the globe.

Keywords: social sustainability; community resilience; risk reduction; urbanization; Yangon

1. Introduction

Many major Southeast Asian cities have grown economically, leading to rapid urbanization. Urban communities globally confront escalating stresses from natural disasters associated with climate change and various urban challenges. Rapid urbanization is transforming our world and poses major threats and challenges to both personal and community well-being which is the essential component of sustainable society. Myanmar is known as a Developing Economy, a Lower-Middle-Income Economy, and a Least Developed Country within the East Asian region [1]. Since the 2020 military coup, the people of Myanmar have confronted a variety of crises, including political, economic, and social challenges. The country currently confronts substantial issues such as poverty and inequality. Yangon, Myanmar's largest city and economic hub, is also one of the most populous regions in Myanmar. Yangon City experiences rapid population and urban growth after the year 2000 especially, the accelerated development, and is also unprepared in many ways. At the same time,

housing patterns were changed from one or two-story houses into six or eight-story apartments to meet the rising population. In this modern society, people want to live in comfortable houses with better facilities, healthier environments, and better living qualities. The developmental process especially the building of housing, apartments transportation, and other infrastructure, without proper planning, may lead to various negative consequences, including environmental degradation, social inequality, and unsustainable urban sprawl. In addition, Myanmar struggles to strengthen its resilience due to limited resources such as the limitation of financial resources, technical capacity, and infrastructure for effective disaster preparedness, response, and recovery efforts [2]. Therefore, communities with high vulnerabilities and low readiness may suffer more difficult situations if they encounter crises and additional pressures.

Over the years, the critical importance of prioritizing social studies and collaborating with other disciplines has been emphasized. Social aspects of sustainability generally include the factors determining quality of life, such as access to basic services, social participation, and cohesion. These factors not only influence individual well-being but also enhance the development of a sense of belonging and collective responsibility within communities, which are essential for building resilience against disasters and other adversities. Understanding social sustainability as a process of overcoming challenges together and maintaining social infrastructures can enhance community preparation for disasters and other stresses. In the context of urban resilience, it plays an important role by enhancing the community's capacity to respond to and recover from various shocks, such as natural disasters and economic downturns. Factors such as social cohesion, and community bonding also contribute to the ability of the community to mobilize resources and support one another during crisis. For instance, communities with strong social bonds are often better equipped to arrange their effort such as evacuation, sharing information, and assisting vulnerable populations during the crisis [3,4].

This study is structured around the following research questions. They are (1) How is the situation of social sustainability which encompasses traditional and social activities, amenities and social infrastructure, and communication and relationships in residential areas of Yangon, Myanmar? (2) How is the situation of community resilience which encompasses household preparedness, adaptive capacity, and community management in residential areas of Yangon, Myanmar? (3) In what ways does the concept of social sustainability contribute towards enhancing community resilience to prepare for and respond to emergencies effectively? By focusing on the local context of downtown Yangon, this research aims to fill the gap in the existing literature provide original insights into how characteristics of urban living affect social sustainability and community resilience, and identify solutions for enhancing both principles in the future.

2. Literature—Theoretical background

2.1. Social sustainability

Over the last three decades, the Brundtland Report (our common future) has stated that sustainable development is one of the critical issues. In this report by Mrs. Brundtland [5], sustainable development is stated as “development that meets the

needs of the present without compromising the ability of future generations to meet their own needs.” (World Commission on Environment and Development). Three main pillars of sustainability namely, Economy, Environment, and Society, have considered the different levels of priorities by various organizations. (See **Figure 1**). After the formulation of Agenda 21, social issues were considered equally in the debate. In 2015 the Sustainable Development Goals (SDGs) further solidified the importance of social aspects in driving development efforts. Among the three pillars, the social aspect is the most complex concept and still has many challenges in reaching the analytical foundations of social sustainability [6].

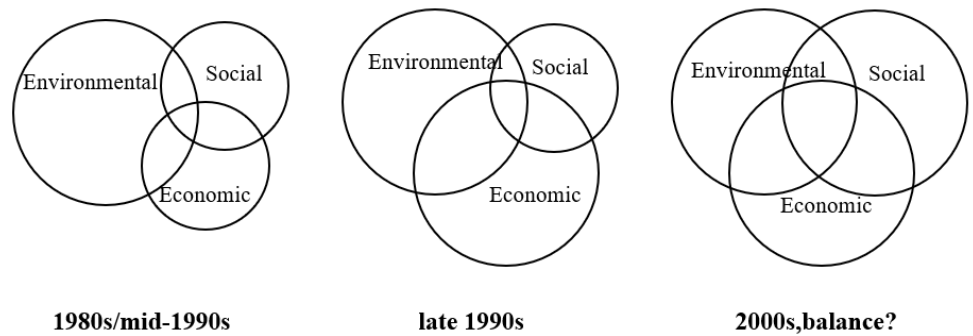


Figure 1. Different dimensions of sustainable development [7]. (a) 1980s/mid-1990s; (b) late 1990s; (c) 2000s.

Nowadays, researchers and academicians focus on the concept of social sustainability across multiple disciplines such as science and technology, social science, architecture, and urban planning. According to Baldwin and King [8], given the current global pressures, professional practitioners, policymakers, and academic researchers have to accept that understanding of how to integrate the social aspects of sustainability into their projects, policies, and strategies. Among academic researchers, there is no single accepted definition of social sustainability because of its complex and multifaceted nature [9–13]. However, Woodcraft’s definition of social sustainability is probably the most commonly cited. It stated that “Social sustainability is about people’s quality of life, now and in the future. It describes the extent to which a neighborhood supports individual and collective well-being. Social sustainability combines the design of the physical environment with a focus on how the people who live in and use a space relate to each other and function as a community” [10].

According to a wide range of literature, it was found that social sustainability indicators are typically found in two types, tangible, and intangible attributes. Tangible attributes mostly focus on access to urban services such as open spaces, local services, and basic infrastructure. Intangible attributes include social capital, social well-being, social justice, and a sense of community. For instance, the framework proposed by Dempsey et al. [9] focuses on tangible and intangible factors for their comprehensive understanding of urban social sustainability. While tangible factors such as urbanity, attractive public realm, decent housing, local environmental quality and amenities, accessibility (e.g., access to local services and facilities, employment, and green space), sustainable urban design, neighborhoods, and walkable neighborhoods (pedestrian-

friendly), important for maintaining the social sustainability, intangible factors also enrich social cohesion, fostering a sense of belonging and community interaction. Community participation, inclusivity, accessibility to services, cultural preservation, and prosperity of social well-being are all regarded as crucial elements of socially sustainable development [14]. Although tangible and measurable indicators are easy to understand and compare, the intangible factors are more challenging to measure and play a crucial role in capturing the complex and dynamic process of community well-being or the sustainability of quality of life. Therefore, an integrated approach, combining the tangible and intangible indicators is needed to ensure addressing the nature and complexity of the community, especially in the context of Myanmar.

In this study, we focus on the conceptualization of how to sustain social sustainability in residential areas and explore the main themes and dimensions at the heart of this concept for local communities of Yangon, Myanmar. In real-world applications, social sustainability concepts are diverse and context-specific, with differences observed among countries and localities. In addition, the concept of social sustainability is more elusive and more challenging to define than environmental or economic sustainability [6]. We conceptualized social sustainability as an important aspect of enhancing community well-being and that drive to have abilities to cope and adapt to vulnerabilities within the community. The basic concept of social sustainability is simple. It is about sustaining a high level of social well-being for a long time. We emphasize considering the basic human needs and human activities of their daily lives. We focus on the people's needs and use space to measure the environmental impact on the well-being of societies and the environment they interact with and provide the appropriate standards and requirements for maintaining the quality of life.

The concept of social sustainability is based on three key components - traditional and social activities, amenities, and infrastructure, and the last one is communication and relationship (See **Table 1**). As the majority of Myanmar people are Buddhists, they used to carry their religious and social occasions such as donations and ordination at the monasteries and community halls for religious purposes. Depending on their living style, space for social integrations such as outdoor living and open space are required. We assume sustaining social and traditional activities might have a relation with sustaining social well-being among the community in Myanmar. In this study, we investigate the relationship between the condition of these facilities and participation in social activities within the community. It aims to assess the level of community engagement and social interactions in maintaining traditional and social practices. Amenities and social infrastructure, one of the essential components of social sustainability, maintain the well-being of the people and improve their social daily life. The Berkeley Group utilizes a framework developed by Woodcraft to assess the level of social sustainability within their housing communities, aiming to achieve their goals of enhancing residents' quality of life and well-being [8]. They defined the amenities and social infrastructure as essential components that contribute to the overall social fabric of a community. In addition, Communication and relationship represent another vital component in understanding the social sustainability of people. This aspect includes the relationships within and between families, and neighbors.

Furthermore, it encompasses participation in social and religious organizations, which enhance a sense of community engagement among the members.

Table 1. Key components and purpose for understanding social sustainability in Myanmar.

Key Components	Purpose
Traditional and social activities	To indicate community participation in traditional and social activities
Amenities and infrastructure	To indicate access to facilities such as parks, and playgrounds for social interactions among the community
Communication and relationship	To understand the social connection between them (family, friends, and neighbors)

Source: Created by Author, modified the frameworks from [9,10,15,16].

This table presents key components contributing to understanding social sustainability in Myanmar and their respective purposes.

2.2. Community resilience and participation

Many years later, [17] referred to the resilience of an ecosystem as the measure of its ability to absorb change and disturbance and still maintain the same relationships between populations or state variables. The concept of resilience is broadly adopted in several fields by researchers and academicians [18,19]. Community resilience is a critical concept in disaster risk reduction, with numerous analytical frameworks developed to help communities endure and recover from adverse occurrences. A community is a social unit within a common set of socially significant attributes, such as geographic location, cultural norms, religion, or identity. Resilience refers to the capacity of a system or organization to respond to and recover from various difficulties.

During the past three decades, tons of papers have discussed and emphasized the conceptualization of community resilience and participation in the implementation of risk reduction management. There are different approaches to building the key components and the indicators. The capital-based framework encompasses the measurement of human, social, economic, physical, and natural capital in the resilience framework [20,21]. For instance, Baseline Resilience Indicators for Communities (BRIC), assess resilience to disasters based on a capital-based approach by incorporating these five capitals and it serves as a reference point or baseline for evaluating the current status of inherent resilience at the county level in the United States. The framework aims to provide decision-makers with valuable insights into the inherent disaster resilience of different countries, identify key factors driving resilience at the county level, and highlight spatial patterns of resilience drivers across the US [22]. On the other hand, the capacity approach emphasizes the identification and enhancement of a community’s organizational, social, and functional capabilities that enable it to withstand, adapt to, and recover from disruptive events. This kind of approach is based on key components such as coping capacity, absorptive capacity, adaptivity, and transformative capacities in a community’s resilience index [23,24]. One example of a capacity-based approach is the Communities Advancing Resilience Toolkit (CART), a toolkit designed for measuring community resilience to disasters, and other community adversities. The toolkit was intended for use by community-based organizations and community planners. CART focused on four interrelated domains that contribute to community resilience: connection and caring; resources; transformative potential; and, disaster management. The four interrelated domains are rooted in principles from social psychology (community capacity and competence)

and public health kinds of literature. The capacity approach highlights the resources and skills that enhance resilience.

In the conceptualization of the Community Resilience Framework for Myanmar, three key components such as household preparedness, adaptative capacity, and community management were utilized [25] (See **Table 2**). The community disaster resilience framework for Myanmar was conceptualized based on a step-by-step process such as exploring the current literature review, an analysis of existing community disaster resilience frameworks, and participatory research involving key stakeholders to develop a contextually relevant framework for measuring community disaster resilience in Myanmar. Household preparedness is one of the key components that capture overall community resilience. According to previous studies, the importance of preparedness is highly emphasized at different levels such as individual, community, and government levels. Enhancing household-level preparedness has been identified as an effective strategy to mitigate potential losses in disasters [26,27]. Especially for Myanmar, a developing country, we assume that emergency preparedness is vital in mitigating the direct impacts of flood disasters on vulnerable populations considering the country’s overall socioeconomic challenges. Adaptive capacity is a core component that is widely recognized as a positive attribute of a system [19,28,29]. Adaptive capacity is the ability of individuals, systems, or institutions to adapt to potential damage [30,31]. Comprehending the capacity for adaptability enables communities to manage and prepare for disasters more effectively. Therefore, it is essential for individuals to not only prepare for disasters but also to have knowledge of where to access various resources during an emergency. Adaptive capacity is crucial for the community’s overall capacity to respond effectively. Another core element that contributes to community resilience is community management. Community management aims to seek to address the systemic conditions that can manage to mitigate various factors that contribute to people’s vulnerability to hazards. It is defined as a key component of resilience that connects individuals to collective community preparedness efforts.

Table 2. Key components and purpose for community resilience and participation.

Key Components	Purpose
Household Preparedness	Capability to have basic food supplies and resources knowing where and how to move, having the capacity to move independently
Adaptative Capacity	Capacity to effectively adjust to changing conditions and access resources from the community and external organizations
Community Management	The function of community management as a key role in resilience is to set a link between individuals to community preparedness

Source: The table is adapted from [25].
This table presents key components contributing to understanding community resilience in Myanmar and their respective purposes.

3. Materials and methods

The methodology of the study employs a combination of approaching the relevant conceptual frameworks and a qualitative research design to explore the deep understanding of the nature of the complexities of the urban lifestyle of the study area. This approach involved several key steps (See **Figure 2**). In the previous sections, we

presented two distinct conceptualizations for Myanmar context (See Sections 1 and 2). By applying these conceptualizations, we used an in-depth interview as a qualitative data collection method and a purposive sampling method to examine the conditions of social sustainability and community resilience in the downtown area of Yangon, Myanmar. We purposively selected 10 local people comprising a varied group of males, females, young, and senior citizens who live within the downtown area of Yangon, Myanmar. Face-to-face interviews with the participants were made via online video calls; each call lasted an average of 30 min. The interviews were made in Myanmar language and transcribed (and translated into English). After that, all the interview data were put into the MAXQD software and analyzed thematically. In this step, we tried to understand the existing conditions of social sustainability and community resilience in the context of Yangon, Myanmar. Each participant’s answers received a unique code number and we cited the code system (e.g., YGN-SS-00, YGN-CR-00) in the result and discussion section. Through the case of Yangon downtown area and then, incorporating insights from existing literature, this study explores the potential linkage between community resilience, participation, and social sustainability. We emphasize the main barriers and challenges of sustaining social life and community resilience, living in the downtown area of Yangon. The linkage approach allows for a comprehensive examination of how social sustainability and community resilience are interconnected. The semi-structured interviews allowed flexibility in exploring participants’ experiences while ensuring that key themes related to social sustainability and community resilience were addressed. It can help to understand the nature of the social sustainability of those who live within the urban area of Yangon and its influence on community resilience and participation. All of the interviews and questionnaires were conducted from October 2023 to May 2024.

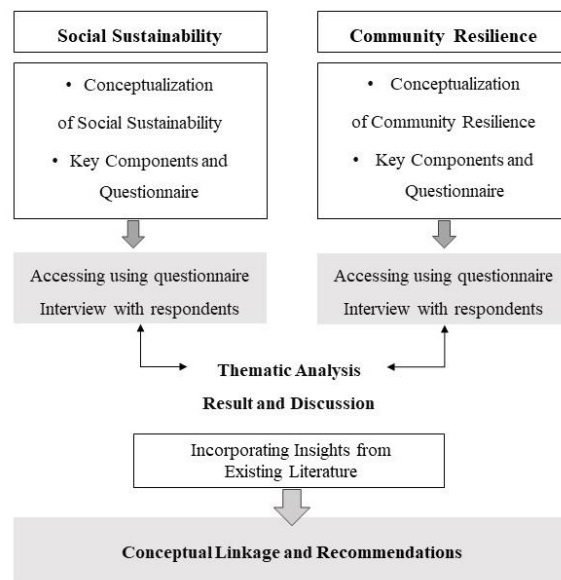


Figure 2. Method of the study.

Characteristics of the study area

The study area, Yangon City is located in lower Myanmar and the convergence of the Yangon and Bago Rivers. The changes in the urban landscape, especially in

Yangon, seem to have accelerated [32]. Yangon, one of Myanmar’s most important urban centers, has experienced rapid urban growth and has been unprepared in many ways for the last two decades. Expansion of urban centers, especially with the increase in population, leads to changes in housing patterns and land utilization. We focus on the urban districts of Yangon, Myanmar, specifically targeting the neighborhoods of downtown Yangon, Bahan, and Kamayut Townships. These areas were selected due to their high concentration of apartment complexes, which accommodate a diverse population, including residents and migrants from other regions. By focusing on these neighborhoods, this study will emphasize capturing the urban lifestyle of residents living in these small apartments, especially their social sustainability and community resilience.

4. Results and discussion

The findings from the qualitative research conducted in urban apartment communities in downtown Yangon provide significant insights into the linkage between community resilience, participation, and social sustainability. This section will briefly describe the synthesis of case study results mainly determined by the selected indicators. Several key themes emerged, providing a holistic understanding of the complex nature of the social aspect of sustainability and community resilience and participation. The characteristics of the participants are outlined in **Table 3**.

Table 3. The characteristics of the selected participants from Yangon, Myanmar.

Code	Sex	Age	Education	Family size
P1	Female	35	Graduated	4
P2	Female	30	Graduated	3
P3	Female	64	High School	4
P4	Male	68	Graduated	4
P5	Female	43	Graduated	4
P6	Female	31	Graduated	2
P7	Male	34	Graduated	1
P8	Female	29	Graduated	5
P9	Female	27	Graduated	1
P10	Male	39	Graduated	1

Note: P1–P10 = Participant 1 to10.

The overall characteristics of the selected participants are described.

4.1. Conditions of social sustainability in Yangon residential area

This study assessed the key components of social sustainability, including traditional and social activities, amenities and infrastructure, communication and relationships, and mutual help, and summarizes the findings from the questionnaire administered to participants in **Table 4**.

Table 4. Overview of social sustainability questionnaire results from participants.

Key Components	Questionnaire	Yes	No
Traditional and social activities	Do you often participate in traditional and social activities within the community?	4	6
	Do you think you have enough space to do traditional and social activities?	2	8
Amenities and infrastructure	Do you often invite neighbors to some kind of Myanmar traditional occasions held at your home?	3	7
	Do you know the social infrastructure within your neighborhood?	8	2
	Do you have nice access to the recreation and social integration space within the neighborhood?	6	4
Communication and relationship	Do you often visit the neighborhood's recreation and social integration space?	2	8
	Do you have good relationships within the family?	10	0
	Do you have good relationships with the neighbors?	4	6
	Do you participate as a member of social or religious organizations within the neighborhood?	2	8

Source: Author.

Semi-structured questions include Do you often invite your neighbors to some kinds of Myanmar traditional occasions within your home? (For example, welcome home parties, religious and social occasions) Why? Why not? Do you often visit the neighborhood's recreation and social integration space? (For example, public park or recreation space) Why? Why not?

4.1.1. Traditional and social activities

It was found that participation in traditional and social activities was uncomfortable among the participants, indicating a substantial change in their social behaviors. According to the thematic analysis, Participants P1, P2, P5, P8, and P10 do not invite the neighbors to their houses because they do not have enough space for social activities because of the dwelling unit size (YGN-SS- Not enough space). Participant P8 said, "But we do traditional and social occasions within a monastery located nearby.". Participants P2 and P3 answered "We have difficulties in cooking and preparing food for donations within our small apartment," (YGN-SS- Space difficulties) and "We order the food from the restaurant and deliver it to the neighbors." (YGN-SS- Barriers and changes in traditional activities). In addition, Participants P6, and P9 answered they did not participate in social occasions because they live temporarily in this area, and do not have a strong relationship with the neighbors. Participant P9 answered "Mostly, I always go back to my hometown during the holidays and participate in most of the social activities in my hometown." (YGN-SS- Living temporarily) (YGN-SS-Weak relationship with the neighbors). Moreover, most of the walk-up apartments in Yangon have four to six floors and all are not provided with elevator access. Participants P2 and P5 who live on the 4th and 5th floors of the apartment answered that they have some difficulties in doing traditional activities. Participant P2 answered "And, I live on the 4th floor. If we do social activities, that fact might be our difficulties." (YGN-SS-Accessibility Challenges).

4.1.2. Amenities and infrastructure

Social infrastructure is important in maintaining the social well-being of people's daily lives. Although the majority of respondents agree that they know the social infrastructure within their neighborhood, they reported they rarely utilized the neighborhood's recreation and social integration space. Female Participants P1, P6, and P9 reported that park or recreation spaces are unsafe and the facilities of public parks are not enough. Participant P1 answered, "Going alone is unsafe and the facilities of such a public park are insufficient." Participant P6 reported that "In my neighborhood, there is one space area created by local people, usually traditional games as their recreation. But I do not go there because it is inappropriate for female residents." Participant P9 stated, "No facilities and No shelter the weather is very hot

I feel unsafe. The air quality is not good.” (YGN-SS-No safety/No safety for girls). In addition, Participant P5 said “We do not have enough time to go to the recreation area and I am not allowed the children to go to those places. Because I think the place is not safe for them.” (YGN-SS-No safety for children). Although amenities and infrastructure are crucial for the daily well-being of the residents, the finding indicates that the residents reported difficulties and limited access to these kinds of facilities.

4.1.3. Communication and relationship

Communication and relationships among community members, including family, friends, and neighbors, are essential for developing social capital and bolstering community resilience. According to Reininger et al. [33], family and community are integral to building social bonding, which subsequently enhances disaster preparedness. Although most participants responded that they have good relationships within the family, they indicated that they do not know the neighbors within the community. This might lead to low motivation to participate in social or religious organizations within the neighborhood. Most of the surveyed respondents answered they did not join as a member of social or religious organizations within the neighborhood. Participants P1 and P6 answered that they do not have friends within the community, which is why they do not want to participate in social events (YGN-SS-Weak relationship with the neighbors). Participants P2, P7, and P9 indicate that their decision not to participate in community organizations stems from their temporary living situation in the area (YGN-SS-Living temporarily). They also expressed a sense of disconnection from the community, stating that their lack of familiarity with local organizations and initiatives limits their engagement (YGN-SS-Disconnection from the community).

4.2. Conditions of community resilience in Yangon residential area

This study assessed the key components of community resilience and participation through the crucial aspects of household readiness, adaptive abilities, and community-level management, and summarizes the findings of the questionnaire administered to participants in **Table 5**.

Table 5. Overview of community resilience questionnaire results from participants.

Key Components	Questionnaire	Yes	No
Preparedness	Do you have basic household needs on hand for emergencies?	2	8
	Do you have information sources?	9	1
Adaptive Capacity	Do you think you have alternative sources of food and water? (What other sources?)	3	7
	Do you think you have alternative sources of informal information? (What other sources?)	6	4
Community Management	Do you think people in your neighborhood will collaborate for community development?	3	7
	Do you think your community possesses the physical resources to manage the shocks?	2	8
	Do you have the willingness to participate in a community organization or awareness program?	3	7

Source: Author.

Semi-structured questions include What alternative sources of food and water would you consider for using if your usual supplies were disrupted? What alternative methods would you consider using to receive information if your primary sources were unavailable?

4.2.1. Household preparedness

In evaluating household preparedness for resilience, one of the common

approaches involves assessing the amount of basic household and their adequacy in meeting fundamental needs. This includes maintaining basic household needs, such as food, water, and medical supplies, which are essential for survival during emergencies. Well-prepared households can quickly adapt to disruptions caused by disasters, ensuring the safety and well-being of their members. The result shows that most respondents lack early preparedness methods such as buying food and basic needs. Many participants demonstrated limited food stockpiling habits and expressed difficulties within their small dwelling units. For instance, Participants P1, P6, P7, and P9 reported that they only have a few essential items on hand (YGN-CR- Limited Food Stockpiling). Two participants highlighted “We have space difficulties in small dwelling units.” (YGN-CR- Space difficulties for stockpiling). Only two respondents believed that they had enough food for emergencies. Participant P2 answered, “Especially I worry about the water, I have noodles and basic food.” (YGN-CR- Worry for water supply). Some Participants may not be aware of the specific hazards they face or the importance of preparedness. The inadequate knowledge of local hazards appears to have impacted their preparedness level as reported by two participants stating “We are not living in a flood-prone area and we don’t need to prepare for disaster.” (YGN-CR- Lack of awareness). This lack of awareness could potentially lead to insufficient preparedness, even in the face of potential risks. The study found that there is a growing recognition of the importance of mobile phones and social media as communication channels. Although television remains a traditional source, most participants use platforms such as online pages and Facebook groups (YGN-CR- Social media as a useful platform for information sharing). These tools might become essential tools for connection among the residents. Enhancing the effectiveness of these useful platforms as their information sources, residents can connect and share their resources, particularly in times of crisis.

4.2.2. Adaptive capacity

In this study, adaptive capacity refers to the ability of humans, systems, or organizations to respond to difficult situations and their ability to absorb the resources from the community and external organizations. A community’s background situation can significantly influence its adaptive capacity for resilience [34]. The study indicated that the capacity of alternative sources of food and water of the respondents was limited. This study found that only three respondents believe they can manage cooking challenges in alternative ways such as charcoal and gas. Participant P9 answered “I live alone and generally buy outside food and might have problems using alternative ways of cooking style.” (YGN-CR- Living alone and challenges with cooking alternatives). Participant P1 answered “I live with the family and my mom can cook for us in an alternative way.” (YGN-CR- Family support and convenience with cooking alternatives). Participants P2 and P3 answered that they can manage the alternative way of cooking but, are worried about the water (YGN-CR- Worry about Water supply). Participant P10 answered “I live alone in my apartment and I am worried if anything happens to me, I don’t have any support network around.” (YGN-CR- Living alone and challenges with alternative sources of information). Enhancing adaptive capacity requires a multifaceted approach and the finding highlights the challenges of urban living where restricted, access to diverse information sources, the

capacity to adapt to the situations, and building strong community networks. By addressing these challenges, individuals and communities can better prepare for and respond during the crisis.

4.2.3. Community management

The concept of a resilient community emphasizes the importance of local capabilities and resources in managing crises. Social trust is a fundamental need for building resilience and enabling cooperation and collective activity during a crisis. The study found that a significant proportion of respondents felt that people in their neighborhood could be trusted. In addition, the perception of whether the community possesses the physical resources to manage shocks is important for building resilience. Only two respondents stated that they believe the community possesses the physical resources to manage the shocks. Participants 1, 3, and 9 describe the insufficient and not enough community physical resources. (YGN-CR- Insufficient and no place for physical resources) If many respondents feel that community resources are lacking, this understanding could indicate a need for investment in infrastructure and resources to improve community resilience. In addition, the willingness to participate in community organizations or awareness programs is a key factor in enhancing community resilience. The study reveals that lack of the wiliness of willingness to participate as members of community organizations. The willingness to participate in community organizations or awareness programs is a key factor in enhancing community resilience. This study found that 8 out of 10 participants mentioned that they were not willing to participate as members of community organizations. A low willingness (as indicated by the responses) may suggest barriers to engagement, such as lack of interest, trust issues, or previous negative experiences with organizations.

5. Conceptual linkage and recommendations

Nowadays, the cities have been becoming megacities with less social infrastructure. The built-up area has not grown as quickly as its population. The lack of amenities to support residents can impact communities and surrounding neighborhoods for their long-term well-being. Our study indicates that residents living in high-density environments, such as long walk-up apartments in the downtown area, experience significant stresses regarding recreation and social amenities in their daily lives. It may have some social problems, such as loss of social integration spaces, low quality of life, and other social illnesses. The findings from our research in urban apartment communities in downtown Yangon indicate that urban living might face some difficulties in building their resilience. For instance, residents reported inadequate household preparedness due to factors such as their limited stockpiling habits and space difficulties, highlighting the importance of awareness programs that enhance individual preparedness. Such awareness programs could include workshops focused on preparing emergency supplies and training on disaster response procedures. In addition, individuals are not motivated to participate in community management activities, primarily due to weak social bonding with their neighbors. This sense of disconnection might create barriers to building community resilience, making it difficult for residents to see the value in participating in community initiatives or volunteer efforts. By addressing knowledge gaps, promoting active participation in

community initiatives, and improving access to reliable information, the community can strengthen its resilience and better prepare for future disasters or emergencies.

As we described in the previous sections, both concepts of social sustainability and community resilience are complex and multifaceted. Social sustainability focuses on addressing social concerns and promoting practices that enhance societal well-being. On the other hand, the resilience framework emphasizes the capacity of systems to absorb disturbances while maintaining function and structure. Considering these two concepts, the following distinct conceptualizations highlighted interlinkage and recommendations on how maintaining social sustainability can build stronger communities better equipped to withstand and recover from various shocks and stresses.

Interlinkage and Recommendation 1: “Creating social integration spaces that can be utilized as an adaptable community resource for emergencies might be one of the solutions to enhance social participation and community engagement.”

Yangon, the mega city in Myanmar faces challenges of rapid growth of urbanization, population growth, and changing land use patterns. The transition from low-rise housing to high-density buildings has consequently led to less open space and social infrastructure within the city. Previous research highlighted the loss of social integration spaces in Yangon residential areas, in Myanmar [35]. Similar to the challenges observed in Yangon, previous studies in South African contexts, particularly in cities like Nairobi, and Kenya, have shown that urban green spaces encounter a range of challenges. Urban overcrowding, poor management, and socio-economic inequalities create major obstacles to the accessibility and use of these important resources [36,37]. Social integration is critical for enhancing individuals’ overall health and emotional well-being through social and tangible resources [38]. According to the thematic analysis of the study, the participants highlighted the lack of public green spaces and facilities, inadequate infrastructure, and limited access to community resources as key challenges. Their perspectives underline the poor condition of social infrastructure and social integration spaces have an impact on the less participation in traditional and social activities in downtown areas of Yangon.

If we can put some kinds of social facilities for people’s daily lives, we might keep their lives more relaxed and keep people’s well-being in the future. It is needed to provide basic social and physical infrastructure to sustain the well-being of the people who are living in Yangon residential area. Cities lacking resilient infrastructure systems will be highly susceptible to adverse impacts from disasters like earthquakes [39]. By delivering social infrastructure within the community, this infrastructure can be used as a community resource for disaster preparedness and storage for emergency stock.

This recommendation relates to findings that integrating diverse functionalities into public open spaces can promote a culture of adaptability, thereby contributing to the development of more resilient neighborhoods. The study found that the adaptable urban form may influence community resilience in the face of disaster. Following the earthquake and tsunami that struck the Chilean city of Concepción and its surrounding metropolitan area on 27 February 2010, displaced residents rapidly sought the available public spaces, such as squares, parks, vacant lots, and undeveloped areas, to achieve their immediate housing and organizational needs in a flexible manner.

Therefore, it is needed to consider supporting the laws and regulations for public parks and greenery in Myanmar. This could include developing public spaces such as parks, community centers, and multipurpose facilities, that encourage social interactions and community gatherings to accommodate diverse cultural and social activities, such as parks, community centers, and multipurpose facilities, which can promote community engagement and resilience.

Interlinkage and Recommendation 2: “Reinforcing the traditional and social activities, including the awareness program through social activities within the community”

Social behavior is difficult to express in scientific or mathematical terms, which should imply the relationship between human beings or the inhabitants within the neighborhoods. It is generally accepted that the rural or semi-urban people in Myanmar have better social adhesion than those living in the big cities. As the majority of Myanmar people are Buddhists, they used to carry their religious and social occasions in their homes carrying out food donations, ordination, and ear-boring at the monasteries and community halls for religious purposes. Such traditional and social activities within the community contribute to their social cohesion, quality of life and well-being. For instance, community-based activities such as tea parity and health exercise at the neighborhood level served as communication tools to foster community bonding among residents of temporary disaster housing during the post-disaster phase [40]. In the context of areas affected by the Great East Japan Earthquake and Tsunami in Japan, local traditional activities and festivals have been observed to facilitate communication at the neighborhood level [41]. Therefore, reinforcing traditional activities can enhance a sense of community identity, and strengthen social bonds, and mutual help networks, leading to increased community resilience. Incorporating awareness programs as part of the community’s social activities may further enable collaboration of these two concepts together not only sustaining their social well-being but also preventing the outcoming environmental challenges and stresses. The annual or monthly traditional events held within the community include clear responsibilities for community leaders and participants. Residents’ participation in these activities allows them to interact with one another, strengthening interpersonal ties and social capital. Previous studies have shown that local festivals and cultural events can significantly enhance community resilience [42]. By preserving and integrating such activities into resilience-building efforts, communities can leverage cultural strengths, local knowledge, and practices to enhance preparedness, adaptive capacity, and community management strategies.

The recommendation aligns with Klinenberg and Fussell [4] that neighborhoods with strong social networks and community bonds are better equipped to handle disasters. In 1995, a heat wave in Chicago was a significant and tragic event, resulting in the deaths of 739 individuals, many of whom were elderly. Research following the event revealed that having access to air conditioning dramatically reduced the mortality risk, but more importantly, the strength of social networks within communities played a critical role in survival. The study found that in A Latino community, residents living in crowded, high-density housing knew their neighbors well. The presence of local businesses, organizations, and community spaces facilitated regular interactions among neighbors and friends, who would participate in

communal events and activities together. Residents also demonstrated a shared sense of responsibility, checking in on each other's well-being [4].

6. Conclusion

Academic researchers continually develop innovative approaches and conceptual frameworks for investigating the various aspects of life, intending to address emerging research challenges across diverse study contexts worldwide. Certain regions refer to their particular cultural, and social backgrounds, and advancement in urban studies aims to explore these differences. Myanmar, a developing country with limited research, often finds that studies fail to consider the unique contextual factors influencing different cities individually. This study contributes to the academic literature by proposing two distinct conceptualizations of social sustainability and community resilience, specifically for Myanmar context, addressing a gap in the existing theoretical literature. In addition, we explored the groundbreaking study about downtown Yangon to deeply understand their current situation. The study found that the living style of the community in Yangon might face a weakness of social sense and have problems in preparing for and adapting to emergencies and responding to stresses and challenges. We highlighted valuable insights for enhancing community resilience through maintaining social aspects of sustainability such as fostering strong social connections, community participation, and access to public spaces and resources. Exploring the potential linkage between these two important concepts, and the proposed political recommendations could enable fostering a more resilient urban society that is better prepared to face disasters and challenges. By applying our approach, researchers can gain insights into how various interventions influence quality of life, enabling the interdisciplinary research teams to more effectively evaluate how aid can inform and enhance decision-making processes. We proposed this study as a first step in investigating the type of community and its suitability as a basis for building a socially sustainable resilience framework in Myanmar. By employing a standardized qualitative methodology that includes purposive sampling, in-depth interviews, and thematic analysis, this approach can be easily replicated in other urban contexts, facilitating cross-city comparisons that enhance our understanding of social sustainability and community resilience across diverse environments. Future research should further investigate these conceptualizations in diverse social environments such as other major cities in Myanmar and explore their practical applications to refine approaches to socially sustainable risk management in Myanmar.

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