ICFBE 2023

The 7th International Conference on Family Business and Entrepreneurship

PRELIMINARY THE KEY FACTORS AFFECTING THE URBAN AGRICULTUREPARTICIPATION AMONG URBAN RESIDENTS OF KOTA KINABALU CITY OF SABAH: A CONCEPTUAL PAPER.

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ABSTRACT: *Urban agriculture has gained significance as a sustainable practice contributing to food security and environmental resilience. This conceptual paper aims to explore the key factors affecting urban agriculture participation among residents of Kota Kinabalu City, Sabah. Understanding these factors is crucial for promoting and sustaining urban agriculture initiatives in the region. This paper synthesizes existing literature and proposes a conceptual framework to guide future research and policy development. Urban agriculture plays a pivotal role in addressing food security, promoting sustainability, and enhancing the overall well-being of urban communities. This conceptual paper explores the key factors influencing urban agriculture participation among residents of KotaKinabalu City in Sabah, Malaysia. The interconnection of socio-economic characteristics,limiting factors, and perception factors are examined to gain a comprehensive understanding of the dynamics shaping urban agriculture engagement in this urban setting.In the context of Kota Kinabalu City, Sabah, the practice holds potential benefits such as increased food production, improved food security, and enhanced environmental sustainability. However, the level of participation in urban agriculture varies among urbanresidents. This paper seeks to identify and conceptualize the key factors influencing urban agriculture participation in Kota Kinabalu City.*

Keywords: Urban Agriculture, Sustainability, Environmental Sustainability, Urban Developemt

1. Introduction

Urban agriculture has gained recognition in recent years for its ability to address the urgent problem of food security in urban areas. Aquaponics is a novel method that integrates aquaculture and hydroponics to optimize the utilization of land and water resources (Garnida, Y. (2023). Vertical farming and indoor agriculture are alternative techniques that show promise for achieving sustainable food production in urban areas. These methods provide solutions to challenges such as limited water and land availability, as well as high transportation expenses (Lee et al.,2023). For urban agriculture to flourish, specific prerequisites must be met, including public consciousness and drive, accessible workforce and resources, favorable regulations and organizations, and social networks (Rawat, 2019). Urban agriculture serves as more than a mere food production method; it is a potent approach to both empowering individuals and safeguarding the environment (Beraldo et al., 2023). Urban agriculture plays a vital role in urban sustainability by incorporating the interconnected resource flows of food, water, and energy. This not only enhances the overall sustainability of cities but also has far-reaching implications for promoting sustainable practices (Qiu et al., 2023). However far too little attention has been paid in the context of the urban agriculture landscape in Kota Kinabalu. Therefore, the present study aimed to investigate the key factors influencing urban agriculture participation among urban residents in Kota Kinabalu City, Sabah, with the objective of closing the existing gaps.

Kota Kinabalu is the capital city of Sabah, Malaysia. It is defined within the borders of what is the district, formerly the municipality, of Kota Kinabalu. Despite being the smallest district in Sabah, with an area of 351 square kilometres, it has the highest population. It extends from Telipok and Sepanggar in the north to Tanjung Aru and Kepayan in the south. Reported on the 27 January 2022, the city is set to introduce the urban agriculture concept soon (The Star, 2022). Urban agriculture has gained increasing recognition as a sustainable solution to address the challenges of food security in urban areas. In the context of Kota Kinabalu City in Sabah, understanding the factors that influence residents' participation in urban agriculture is crucial for developing effective policies and interventions. This conceptual paper delves into three interconnected factors: socio-economic characteristics, limiting factors, and perception factors, to provide a holistic view of the urban agriculture landscape in Kota Kinabalu.

2. Literature Reviews

Urban agriculture has become a focal point of academic inquiry and policy discussions, as urban areas grapple with the challenges posed by rapid urbanization and changing food systems. The exploration of factors influencing urban agriculture participation is a multifaceted endeavor, encompassing socio-economic, environmental, and cultural dimensions. The following literature review synthesizes key findings from existing research, shedding light on the complex interplay of factors that shape urban agriculture engagement, with a particular focus on studies relevant to Kota Kinabalu City in Sabah, Malaysia.

Socio-Economic Characteristics

The socio-economic profile of urban residents is a fundamental determinant of their engagement in urban agriculture. This section of the paper explores demographic factors such as age, income, education, and occupation that may influence individuals' likelihood to participate in urban

agriculture. Understanding how these socio-economic characteristics intersect with urban agriculture participation can inform targeted strategies to promote inclusivity and diversity within the urban farming community. Research across various urban contexts consistently highlights the significance of socio-economic factors in influencing urban agriculture participation. Age, income, education, and occupation emerge as key determinants. In a study conducted by Shivashankar P., (2015), findings indicated that higher levels of education were positively correlated with urban agricultureinvolvement. Similarly, Warren E., (2015), found that income levels played a crucial role, with lower-income individuals more likely to engage in urban agriculture as a means of supplementing their food supply and income.

Urban agriculture is significantly influenced by socio-economic characteristics. These factors encompass the level of urban development, the attractiveness of the job market, and the educational achievements of farmers. The proximity of major cities has a significant impact on the success and scale of intergenerational transitions in nearby farms (Sroka et al., 2019). Furthermore, the level of income one possesses also plays a crucial role in determining the impact of urban agriculture. Individuals with higher incomes often report a feeling of psychological balance, a renewed appreciation for their relationship with nature, and an enhancement of the surrounding environment (Hong et al., 2018). Various models of urban agriculture adhere to specific sets of values and prioritize diverse cost-benefit considerations. Service-based partnerships are crucial in self-sustaining gardens, whereas self-sufficiency and sharing are highly emphasized in intercultural gardens. Community gardens, however, prioritize self-governance (Krikser et al., 2019).

Limiting Factors:

Despite the potential benefits, various challenges may hinder urban agriculture participation. This section identifies and analyzes limiting factors such as land availability, access to resources, regulatory constraints, and time constraints. By examining these obstacles, the paper aims to provide insights into the practical challenges that residents of Kota Kinabalu face when considering or engaging in urban agriculture activities. The literature consistently identifies limiting factors that

impede urban agriculture participation. Land availability is a recurrent challenge, particularly in densely populated urban areas. (Wadumestrige Dona & Mohan, 2021) conducted a comprehensive analysis of land constraints in urban agriculture, emphasizing the need for innovative solutions to optimize limited space for farming purposes. In Kota Kinabalu City, the geographical and regulatory context may contribute unique challenges to urban agriculture. Exploring how these factors specifically manifest in this setting is essential for devising targeted interventions that address the specific limiting factors faced by urban residents.

Perception Factors

Public perception and awareness significantly influence urban agriculture dynamics. Studies by (Shamsudin & Kit Teng, 2014) emphasize the role of knowledge, attitudes, and cultural factors in shaping individuals' willingness to engage in urban farming practices. Positive perceptions of the environmental, social, and health benefits of urban agriculture can enhance community support and participation. Given the diverse cultural landscape of Kota Kinabalu, understanding how local cultural and societal factors influence perceptions of urban agriculture is critical. (Azunre, Amponsah, Peprah, & Braimah, 2019)'s work on cultural influences in urban agriculture provides valuable insights into this aspect, paving the way for a nuanced exploration in the context of Kota Kinabalu City.

3. Conceptual Framework

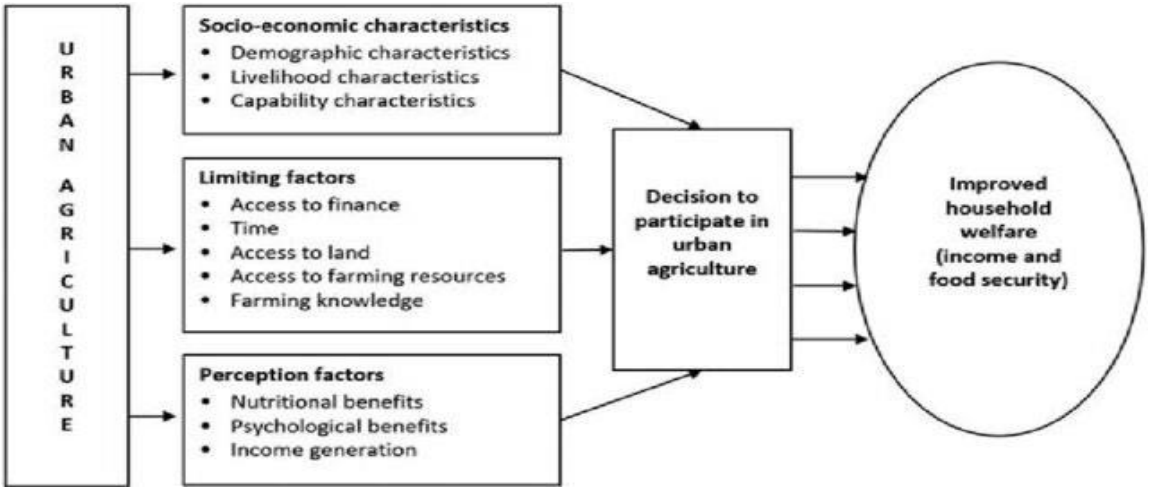

Figure 1: Conceptual framework for participation in urban agriculture (adapted from Gamhewage et al. 2015)

4. Description of Methodology

The methodology employed for this study is designed to comprehensively investigate the factors influencing urban agriculture participation among residents of Kota Kinabalu City in Sabah, Malaysia. The research aims to perform a quantitative approach, allowing for a nuanced understanding of the interconnections between socio-economic characteristics, limiting

factors, and perception factors shaping urban agriculture engagement in the specific context of Kota Kinabalu. For the sampling and respondents, a stratified random sampling method will be employed to ensure representation across diverse socio-economic strata within Kota Kinabalu City. The sample will include residents from various age groups, income brackets, educational backgrounds, and occupations. Participants will be selected through a combination of random street intercepts, community outreach, and online surveys to capture a broad cross-section of the urban population. A structured survey questionnaire will be developed based on validated scales from previous urban agriculture studies on the quantitative method. The survey will capture socio-economic information (age, income, education, occupation) and assess participants' perceptions and attitudes toward urban agriculture. Quantitative data will be collected through face-to-face interviews, online surveys, and phone interviews, ensuring flexibility in response collection. Descriptive statistics will be employed to analyze the socio-economic characteristics of the sample. Inferential statistical analyses, such as correlation and regression, will be conducted to examine relationships between socioeconomic factors and urban agriculture participation.-

5. Limitations and Challenges

This study will employ a quantitative research approach that utilizes a probability sampling technique to ensure the validity of the data and a representative sample that aligns with the study's objectives. The primary data collection method utilized in this study is the distribution of questionnaires to elicit pertinent information from respondents. A 5-point Likert scale will be used to measure respondents' agreement level or disagreement with each series of statements. The sample size was determined through G*Power 3.1 analysis based on the research hypotheses, and how many numbers of questionnaires to be distributed among potential respondents will be decided. Recognizing the potential limitations, such as sampling biases and the subjective nature of quantitative data, efforts will be made to mitigate these challenges. The study's findings will be cautiously interpreted within the specified context, acknowledging the inherent complexities of urban agriculture dynamics. This quantitative approach will enable a holistic exploration of the factors influencing urban agriculture participation among residents of Kota Kinabalu City, providing valuable insights for policymakers, urban planners, and community stakeholders aiming to foster a sustainable and inclusive urban agriculture community.

6. Conclusion

This conceptual paper provides a framework for understanding the interplay between socio-economic characteristics, limiting factors, and perception factors influencing urban agriculture participation among residents of Kota Kinabalu City in Sabah. By comprehensively examining these factors, policymakers, urban planners, and community leaders can develop targeted initiatives to foster a thriving urban agriculture community, thereby contributing to the sustainable development of the city and the well-being of its residents.

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