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SEEDS OF PARTICIPATION AND COMMUNITY INFLUENCE: UNVEILING THE FACTORS SHAPING SMALL-SCALE FARMERS IN ZANZIBAR'S VEGETABLE FARMING

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ABSTRACT

Aim: This study examines the factors that influence small-scale farmers' participation in vegetable farming in Zanzibar, Tanzania. It addresses a research gap by specifically investigating the effects of community influence and technology adoption – areas that have not been thoroughly explored in prior studies. **Methods:** Utilizing a quantitative research approach with a cross-sectional design, the study involved a sample of 149 randomly selected small-scale vegetable farmers from the Dimani and Kombeni wards. Data were collected through structured questionnaires, and both descriptive analysis and a probit model were employed for data analysis. **Results:** The findings indicate that factors such as gender, education level, community influence, land access, credit access, availability of farm inputs, and technology adoption significantly affect participation in vegetable farming among small-scale farmers. **Conclusions:** The findings highlight that participation in vegetable farming among small-scale farmers is significantly influenced by various factors, including gender, education level, community influence, land access, credit access, availability of farm inputs, and technology adoption. These factors collectively underscore the need for targeted interventions that address socio-economic disparities, enhance access to resources, and promote the adoption of modern agricultural technologies to improve small-scale farmers' participation in vegetable farming. The study further recommends fostering gender inclusivity, investing in education and training programs, strengthening community networks, ensuring secure land rights, improving access to credit and farm inputs, and encouraging the adoption of modern agricultural technologies.

Key words: participation, vegetable farming, small-scale farmers, Zanzibar

JEL codes: Q12, D1, D7, D91

INTRODUCTION

Participation in vegetable farming among small-scale farmers plays a significant role in poverty reduction globally, including in Africa, as it improves consumer well-being and opens new market opportunities [FAO 2022, Hoang and Kamugisha 2023]. In Tanzania, participation in vegetable farming enhances farmers' incomes, boosts nutrition and food security, and reduces dependence on imported fruits and vegetables [Mwadzingeni et al. 2021, Tanzania Growth Trust 2023]. Various policies and strategies

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have been implemented to strengthen the vegetable farming sector, such as expanding extension services to promote elite crop varieties [Ochieng et al. 2022] and encouraging the adoption of improved agricultural practices [Muthoni et al. 2023]. Additionally, the introduction of new technologies, credit facilities, and measures to increase labor productivity align with the Zanzibar Vision 2020 initiative. However, small-scale farmers continue to face significant post-harvest losses, which can account for up to 60% of total production [Muthoni et al. 2023]. Inadequate storage and handling infrastructure further aggravate these challenges, with only 16,470.2 acres (16.7%) dedicated to fruit and vegetable cultivation, resulting in a total production of 64,819.8 tons (16.5%) of these crops [Office of the Chief Government Statistician Zanzibar 2021]. To enhance participation in vegetable farming, it is essential to understand the key drivers that affect small-scale farmers in Zanzibar, Tanzania. Several studies [Degefa et al. 2022, Devi et al. 2022, Tritsch et al. 2022, Abdulla 2023, Muhamad Raizal and Mohammad Azam 2023, Panga and Lyaro 2023, Warid 2023] have examined socio-economic factors, such as household education, frequency of extension contact, credit access, and irrigation, in relation to participation in vegetable farming. However, these studies have often overlooked the roles of community influence and technology adoption. Therefore, this study aims to investigate the factors influencing small-scale farmers' participation in vegetable farming in Zanzibar while addressing the gaps left by previous research. The study tests the hypothesis that there is a significant relationship between socio-economic factors and small-scale farmers' participation in vegetable farming, drawing on theoretical insights from the theory of planned behavior and the diffusion of innovation theory. Specifically, the study tested the following hypotheses: H1a: There is a positive relationship between the age of the farmer and participation in vegetable farming, all else being equal; H1b: there is a positive relationship between household size and participation in vegetable farming, all else being equal; H1c: There is a positive relationship between farming experience and participation in vegetable farming, all else being equal; and H1d: Farmers with credit access participate more in vegetable farming than farmers without credit access, all else being equal. Also, the study hypothesizes that H1e: Farmers who have access to farm inputs participate more in vegetable farming than farmers who have no access to farm inputs, all else being equal; H1f: Farmers who have market access participate more in vegetable farming than farmers who have no market access, all else being equal; H1g: Farmers who adopt modern technology participate more in vegetable farming than farmers who do not adopt modern technology, all else being equal; H1h: Farmers who have access to land participate more in vegetable farming than farmers who have no access to land, all else being equal; and H1i: Males participate more in vegetable farming compared to females, all else being equal. Furthermore, H1j: Farmers who are influenced by the community participate more in vegetable farming than those who are not influenced by the community, all else being equal; H1k: Farmers who have formal education participate more in vegetable farming than farmers who have no formal education, all else being equal. Finally, the study tests the hypotheses that H1l: Farmers with positive attitudes toward vegetable farming participate more in vegetable farming than farmers with negative attitudes towards vegetable farming, all else being equal, and H1m: Farmers who perceive the benefits of using improved seed participate more in vegetable farming than those who do not have this perception of vegetable farming, all else being equal.

LITERATURE REVIEW

The study draws on and merges theoretical insights from the theory of planned behavior (TPB) and the diffusion of innovations theory (DIT). The TPB, developed by Icek Ajzen in 1985, and the DIT, introduced by Everett Rogers in 1962, provide valuable frameworks for understanding small-scale farmers' participation in vegetable farming. The TPB explains behavior by linking beliefs to actions through attitudes, subjective norms, and perceived behavioral control, making it relevant for analyzing socio-economic, psychological, and personal factors such as age, education, gender, household size, market access, and community influence. It emphasizes how attitudes and social norms shape participation in vegetable farming but faces criticism for neglecting emotions and unconscious behaviors.

On the other hand, the DIT explores how new ideas, behaviors, and technologies spread within populations over time, classifying adopters into innovators, early adopters, early majority, late majority, and laggards. This theory highlights the role of technology adoption, community influence, and market access in farming participation. However, it struggles to measure diffusion precisely and lacks emphasis on individual adaptation decisions. Together, these theories provide comprehensive insights into the factors influencing small-scale farmers' participation in vegetable farming while addressing both behavioral and innovation dynamics.

The studies reviewed reveal diverse socio-economic and structural factors influencing vegetable and crop farming decisions, production, and participation across different regions. Despite their varying contexts, these studies collectively underscore the significant influence of community influence and technology adoption on participation. Ndegwa [2016] emphasizes the positive influence of age, education, household size, and off-farm income on pumpkin production, highlighting the role of socio-economic factors in determining crop-specific productivity. Similarly, Muhamad Raizal and Mohammad Azam [2023] find that resources like land, labor, capital, and government policies significantly shape vegetable production, particularly during external shocks like the COVID-19 pandemic. This aligns with findings by Kuruppu et al. [2021] and Degefa et al. [2022], where resource access, market connectivity, and experience are pivotal for productivity and crop selection decisions.

Several studies, such as Okon and Idiongo [2016] and Abdulla [2023], demonstrate how education, access to credit, and membership in organizations positively influence participation in farming activities, while factors like age and distance from markets negatively affect it. These findings underline the need for targeted interventions to reduce structural barriers and enhance accessibility for marginalized groups, particularly women and youth, as highlighted by Mundo [2019] and Devi et al. [2022]. Moreover, studies like Sani [2018] and Subedi et al. [2023] indicate that the adoption of modern farming techniques, subsidies, and record-keeping practices can significantly enhance farming participation. However, challenges such as loan accessibility, poor infrastructure, and inadequate institutional support, as noted by Ochilo et al. [2019] and Hussen and Geleta [2021], remain persistent barriers.

While these studies provide valuable insights, several limitations emerge. The use of cross-sectional data and varying sample sizes limits the generalizability of findings across regions. Additionally, many studies lack longitudinal data to capture dynamic changes in farming practices over time. Methodologically, over-reliance on structured questionnaires and regression models may oversimplify complex socio-economic interactions. Thus, our study covers this gap by merging theoretical insights from the TPB and the DIT while accounting for the influence of community and technology adoption on participation in vegetable farming.

MATERIAL AND METHODS

The study adopted a cross-sectional research design and was carried out in the Dimani and Kombeni wards of Zanzibar. These wards were chosen due to their favorable climatic conditions for vegetable farming, high concentrations of small-scale farmers, and suitable land for cultivation [Office of the Chief Government Statistician Zanzibar 2021]. As noted by Mundo [2019], vegetable farming serves as a significant source of income for small-scale farmers in these areas. A simple random sampling technique was applied to select a sample of 149 small-scale vegetable farmers, determined using Yamane's formula [2004]. The total population of vegetable farmers in the two wards is estimated at 1,285, with 500 in Dimani and 758 in Kombeni [Office of the Chief Government Statistician Zanzibar 2021]. The formula used, following Yamane [2004], is written as:

$$n = \frac{z^2 \cdot P \cdot q \cdot N}{\left[e^2 \cdot (N-1) + z^2 \cdot P \cdot q\right]}$$

where:

n – sample size in the two selected wards,
z – z-score (e.g., 1.96 for a 95-percent confidence level),
P – population proportion (expressed as a decimal) that possesses a certain characteristic,
q – complementary probability to P ($q = 1 - P$),
N – total population size in two selected wards,
e – margin of error (expressed as a decimal, e.g., 0.05).

The total population in the two selected wards [Dimani and Kombeni] was 11,506. The margin of error was estimated at the five-percent confidence level, and the sample size was calculated as follows:

$$n = \frac{1.96^2 \cdot 0.11 \cdot 0.89 \cdot 11{,}506}{\left[0.05^2 \cdot (11{,}506 - 1) + 1.96^2 \cdot 0.11 \cdot 0.89\right]}$$

$$n = \frac{4{,}327.32}{29.14},\ n = 148.5,\ n \approx 149$$

The data were collected using a structured questionnaire and descriptively analyzed using an independent T-test and a probit regression model.

ECONOMETRIC MODEL SPECIFICATION

The probit model, introduced by Joseph Fischer in 1944, is a regression model designed for analyzing binary or dichotomous dependent variables, where the outcomes are coded as either 1 or 0 [Becker and Waldman 1987]. Estimated using maximum likelihood estimation (MLE), the probit model offers several advantages, including its ability to estimate probabilities, robustness to outliers, and suitability for handling correlated independent variables. It assumes a normally distributed error term and employs a probit link function, making it particularly valuable within the generalized linear model framework. In this study, the probit model was chosen due to the binary nature of the dependent variable, indicating whether a farmer participates in vegetable farming (1) or does not (0). Its widespread application in social sciences and economics, as evidenced by studies like Joshi and Piya [2021] and Hussen and Geleta [2021], underscores its relevance for analyzing binary outcomes. The general specification of the probit model is as follows:

$$D_i^* = \theta' Z_i + U_i \quad (1)$$

$$D_i = \begin{cases} 1 \text{ if } D_i^* > 0 \\ 0 \text{ otherwise} \end{cases} \quad (2)$$

D – observed dummy variable that indicates whether a farmer participates in vegetable farming and subscript i indicates the farmer,

Z – vector of explanatory variables that affect the decision to participate in vegetable farming,

D^* – latent variable that indicates the decision to participate in vegetable farming,

θ – vector of unknown parameters,

$u \sim N(0, 1)$ – disturbance term.

The explanatory variables included gender, age, household size, educational level, farming experience, access to credit, adoption of technology, community influence, market access, land access, access to farm inputs, attitude towards vegetable farming, and perceived use of improved seed. The selected explanatory variables (characteristics and factors) were specifically chosen to examine farmers' responses based on insights drawn from the theoretical framework (TPB and DIT) and a review of literature of similar studies and also on local situations.

RESULTS AND DISCUSSION

Descriptive results on the types of vegetable farming used by small-scale farmers

The results indicate that small-scale vegetable farmers are primarily interested in various farming systems, including subsistence farming, traditional farming, mixed farming, greenhouse farming, organic farming, and market farming. The distribution of farming practices among these farmers reveals that subsistence and traditional farming are the most adopted methods, reflecting a focus on meeting household food needs rather than market-oriented production.

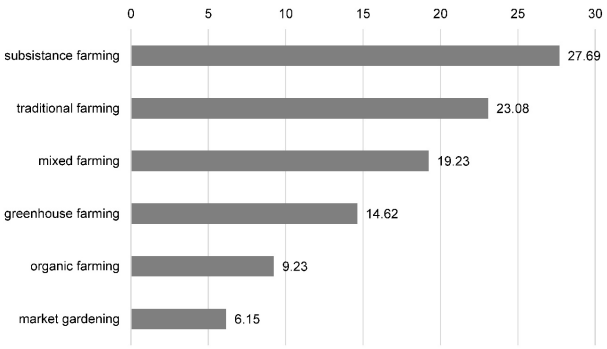

Fig. 1. Vegetable farming types practiced by small-scale farmers
Source: authors' research results.

Mixed farming serves as a transitional approach, combining crop and livestock production to enhance resilience and diversification. However, the low adoption of modern practices such as greenhouse and organic farming suggests barriers like high costs, limited technical knowledge, and inadequate support systems. Similarly, the minimal participation in market farming indicates challenges in accessing markets, infrastructure, and value chains. These trends highlight the need for targeted interventions to promote modern, sustainable, and market-oriented farming practices, such as providing training, improving access to credit, strengthening market linkages, and addressing systemic barriers to adoption.

DESCRIPTIVE RESULTS ON SOCIAL-ECONOMIC FACTORS INFLUENCING PARTICIPATION IN VEGETABLE FARMING

Table 1 shows the findings for mean and proportion comparisons between small-scale farmers who participate in vegetable farming and those who do not participate in vegetable farming. Small-scale farmers who participate in vegetable farming access land in proportion more compared to small-scale farmers who do not participate in vegetable farming at the ten-percent level, with a p-value of 0.0686. In proportion, small-scale farmers who participate in vegetable farming have more access to credit compared to those who do not participate in vegetable farming at the ten-percent level. Small-scale farmers who participate in vegetable farming have more chance of access to farm inputs in proportion compared to small-scale farmers who do not participate in vegetable farming at the five-percent level. In proportion, small--scale farmers who participate in vegetable farming have more chance of having access to the market compared to those who do not participate in vegetable farming at the one-percent level, with a p-value of 0.0083. A larger proportion of participants in vegetable farming have positive attitudes toward vegetable farming compared to non--participant small-scale farmers who have negative attitudes toward vegetable farming at the one-percent level, with a p-value of 0.004.

Table 1. Descriptive findings on factors affecting participation in vegetable farming among small-scale farmers

Variable	All	Participant	Non-participant	$P > \|T\|$
Age	49.14	48.973	50.235	0.652
Gender	0.49	0.513	0.352	0.220
Household size	6.87	6.823	7.176	0.536
Farming experience	15.69	15.814	14.882	0.701
Education level	0.18	0.194	0.117	0.449
Community influence	0.42	0.433	0.294	0.280
Land access	0.89	0.911	0.764	0.069
Credit access	0.55	0.584	0.352	0.074
Access to farm inputs	0.83	0.858	0.647	0.030
Technology adoption	0.63	0.646	0.529	0.356
Marketing access	0.78	0.814	0.529	0.008
Attitude towards vegetable farming	0.90	0.929	0.705	0.004
Perceived use of improved seed	0.36	0.380	0.235	0.248
Observation	130	113	17	×

Notes: $p < 0.10$, $p < 0.05$ and $p < 0.01$ explains $P > |T|$.

$P|T|$ refers to the p-value associated with the t-statistic for testing whether the means of two independent groups are significantly different, P – the p-value, $|T|$ – t-statistic for testing whether the means of two independent groups are significantly different.

Source: authors' research results.

The findings suggest that participation in vegetable farming significantly improves small-scale farmers' access to essential resources and opportunities. Farmers engaged in vegetable farming are more likely to access land, credit, and farm inputs, indicating the importance of these factors in supporting vegetable production. Furthermore, participants demonstrate better market access and a more positive attitude toward vegetable farming, highlighting the potential of vegetable farming to enhance economic opportunities and foster a favorable perception of agricultural activities. These insights underline the need for policies that promote access to resources, market linkages, and attitude transformation to encourage broader participation in vegetable farming.

Results and discussion on the factors affecting participation in vegetable farming among small-scale farmers

The findings of this study revealed socio-economic factors influencing participation in vegetable farming among small-scale farmers in Table 2. The study revealed that the overall model is significant at the one-percent level (*prob.* > Chi² = 0.0000), indicating a strong model fit and accuracy. Seven factors were identified as significant predictors: gender, education level, community influence, land access, credit access, access to farm inputs, and technology adoption, all with p-values not exceeding 0.05. Gender was found to be positively and significantly associated with participation in vegetable farming at the 1% level. Specifically, being male increased the likelihood of participating in vegetable farming by 11.8 percentage points (pp) compared to being female, *ceteris paribus*. This suggests that men are more likely to engage in vegetable farming, potentially due to their traditional role as financial providers in households, while women are more likely to be involved in domestic tasks, limiting their farming activities. This gender-based division of labor highlights the importance of promoting gender inclusivity in agricultural sustainability, as supported by Abdulla [2023], and aligns with theoretical expectations. However, the study did not explore the specific roles of men and women in farming activities such as weeding, processing, and marketing.

Education level was another significant factor at the one-percent level, with educated individuals being 12.5 pp more likely to participate in vegetable farming, *ceteris paribus*. This positive association reflects the importance of education in adopting modern agricultural techniques, using improved inputs, and managing farming activities effectively. Educated farmers are more likely to embrace innovation, which enhances productivity and profitability. This finding contrasts with Kiberiti [2022], who found that education negatively influenced rural youth participation in farming. The discrepancy could be due to differences in the scope of the studies, where this study focuses on small-scale vegetable farmers.

Community influence was revealed to be positive and significant at the five-percent level. This means individuals influenced by their community were 7.7 pp more likely to engage in vegetable farming, *ceteris paribus*. Community-based motivation, such as support from family members and peer groups, appears to encourage participation in farming. This aligns with Newman et al. [2024], who showed that community pressure influences agricultural engagement. However, the study did not delve into the social norms driving community influence in vegetable farming. Land access was a crucial determinant at the one-percent level, with farmers who had access to land being 18.2 pp more likely to participate in vegetable farming, *ceteris paribus*. Secure land access allows farmers to plan long-term, invest in farming practices, and achieve better yields. Many farmers obtained land through inheritance, borrowing, or renting, highlighting the critical role of land security in fostering agricultural participation. The results are consistent with previous studies by Darkey et al. [2014] and Juma [2017], which noted the importance of land access in promoting participation in urban vegetable production.

The study found a positive and significant influence of access to credit on participation in vegetable farming at the five-percent level. Credit access was similarly important, with farmers who had access to credit being 7.6 pp more likely to engage in vegetable farming, *ceteris paribus*. Access to credit allows farmers to purchase improved inputs and adopt modern technologies,

thus boosting productivity. Most farmers in this study relied on informal credit sources such as friends, relatives, VICOBA, and SACCOs rather than formal institutions. This mirrors findings by Abdulla [2023] and theoretical expectations. Access to farm inputs was revealed to have a significant positive influence at the five-percent level, with farmers who had access to inputs being 20.1 pp more likely to participate in vegetable farming, *ceteris paribus*. The use of improved seeds, fertilizers, and agrochemicals enhances productivity and competitiveness in the market. This aligns with Kiberiti [2022], who found that the availability of inputs motivated youth to engage in farming. However, the affordability of these inputs was not addressed in the study.

Finally, technology adoption has been found to positively and significantly influence participation in vegetable farming at the five-percent level. Adopters of modern technology are 9 pp more likely to engage in vegetable farming, *ceteris paribus*. Irrigation systems usage, planting machines, and power tillers enabled farmers to increase efficiency and yields (Table 2). This is consistent with findings by Asfaw et al. [2012] and Ochieng et al. [2022] and theoretical expectations. However, the study did not examine the different levels of technology adoption among farmers.

The study highlights significant socio-economic factors influencing participation in vegetable farming; however, it has notable weaknesses. First, it does not explore the specific roles of men and women in farming activities like weeding, processing, and marketing, limiting insights into gender-based labor contributions. Second, while education was found to positively influence participation, the study lacks a comparison of how varying education levels affect participation in vegetable farming. Third, the influence of community norms on farming activities was not deeply analyzed, leaving a gap in understanding the motivations behind community-driven participation. Fourth, although land access is emphasized, the study does not address issues like land tenure security. Fifth, credit access was noted as a key factor, but the study overlooked the challenges farmers face in accessing formal credit sources. Last, while technology adoption was significant, the study failed to differentiate between levels of adoption or examine barriers like cost and accessibility, which could further illuminate participation dynamics in vegetable farming.

Table 2. Results of the probit model on socio-economic factors influencing participation in vegetable farming among small-scale farmers

Variable	Coef.	*SE*	*P* > |*Z*|	*ME*
Age	−0.023	0.021	0.284	−0.002
Gender	1.007	0.331	0.002	0.118
Household size	−0.090	0.068	0.187	−0.010
Farming experience	0.011	0.026	0.662	0.001
Education level	2.426	0.615	0.000	0.125
Community influence	0.744	0.370	0.045	0.077
Land access	0.950	0.482	0.049	0.182
Credit access	0.636	0.323	0.049	0.076
Access to farm inputs	1.066	0.461	0.021	0.201
Technology adoption	0.689	0.321	0.032	0.090
Market access	0.685	0.397	0.085	0.103
Attitude toward vegetable farming	0.174	0.529	0.742	0.021
Perceived use of improved seed	0.717	0.379	0.059	0.070
Goodness of fit test				
Number of observations = 130; LR Chi^2 (13) = 43.04; *prob.* > Chi^2 = 0.0000				
Pseudo R^2 = 0.3093; *y* = *Pr* = 0.94476805; *hatsq* (*P* > |*z*|) = 0.556				

Note: $p < 0.10$, $p < 0.05$ and $p < 0.01$ explains $P > |z|$.
Coef. – coefficient, *SE* – standard error, *P* – probability of the observed value of a z-score in a standard normal distribution, it indicates the significance of the explanatory variable on participation, |*Z*| – z-score in a standard normal distribution, *ME* – marginal effect, *prob.* – probability, *y* – participation, *Pr* – participation, *hatsq.* – square of the estimated linear predictor or fitted value (Chi^2), where *hat* indicates the estimated value.

Source: authors' research results.

CONCLUSIONS AND POLICY IMPLICATIONS

This study concludes that multiple factors positively and significantly influence participation in vegetable farming, including gender, education level, community influence, land access, credit access, access to farm inputs, and technology adoption.

Gender dynamics play a crucial role, highlighting the need for policies that promote gender inclusivity in agriculture. Initiatives should focus on providing women with targeted support, including access to training and resources, to ensure their full participation and contribution to the agricultural sector. Addressing gender disparities not only enhances overall participation rates but also leverages the untapped potential of female farmers in driving agricultural productivity. Education emerges as another pivotal factor influencing participation. Policy efforts should prioritize investing in agricultural education and training programs tailored to small-scale farmers. By equipping farmers with the necessary skills and knowledge in modern farming techniques and sustainable practices, educational initiatives can empower them to enhance their productivity and efficiency. This, in turn, fosters a conducive environment for increased engagement in vegetable farming activities.

Community influence is highlighted as a significant motivator for farmers to engage in vegetable farming. Strengthening community networks and support systems can facilitate knowledge-sharing and peer learning among farmers. Policies should encourage the formation of farmer groups and cooperatives, promoting collaborative efforts in accessing resources, sharing best practices, and collectively addressing challenges. Building robust community engagement mechanisms ensures sustainable support and solidarity among farmers, contributing to higher participation rates. Secure land access emerges as a critical policy area. Reforms in land tenure policies can provide small-scale farmers with secure land tenure, either through land grants or simplified leasing arrangements. Securing land rights enhances farmers' confidence to invest in long-term agricultural activities such as vegetable farming, thereby promoting stability and sustainability in agricultural production.

Efforts to improve credit access are essential to overcoming financial barriers faced by small-scale farmers. Policy interventions should focus on expanding financial services tailored to farmers' needs, such as microfinance and low-interest loans. Enhancing financial literacy programs and facilitating access to credit enables farmers to invest in essential inputs like seeds, fertilizers, and technologies, which are crucial for boosting their participation and productivity in vegetable farming. Access to agricultural inputs, including seeds, fertilizers, and pesticides, is identified as a determinant factor influencing participation. Policies aimed at ensuring affordable and timely access to quality inputs through subsidies, bulk purchasing schemes, and private-sector partnerships can significantly enhance farmers' ability to improve crop yields and quality. Facilitating access to inputs promotes sustainable farming practices and reinforces small-scale farmers' engagement in vegetable farming.

Promoting the adoption of modern agricultural technologies is crucial for enhancing productivity and efficiency in vegetable farming. Policies should incentivize the adoption of technologies such as irrigation systems, mechanized tools, and improved seeds through training programs, subsidies, and demonstration projects. By embracing technological advancements, farmers can optimize their farming practices, increase yields, and improve their competitiveness in the market.

Limitations of the study and future research directions

The study has not examined the long-term relationship between socio-economic drivers and participation in vegetable farming. Conducting longitudinal studies that follow small-scale farmers over an extended period can provide valuable insights into the long-term dynamics of vegetable farming participation. By tracking changes in farmer's behaviors, preferences, and social-economic factors, researchers can better understand the evolving patterns of vegetable farming participation and practice. The study has not captured all the external factors and contextual influences that influence vegetable farming participation. Socio-cultural, technological, and regulatory factors can vary over time and may influence consumer behaviors. It is important to recognize that the study's findings may be limited to the specific context of Zanzibar and may not account for broader societal changes or emerging trends. Future studies could incorporate a more comprehensive examination of these external factors and their impact on vegetable farming participation. Also, to increase the external validity of the study

findings, the study can be conducted beyond Zanzibar. Future research could benefit from incorporating mixed methods approaches and longitudinal designs to provide deeper, more holistic insights. Furthermore, policy implications must address not only resource access but also structural inequities to foster inclusive agricultural development.

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ZACHĘTY DO UCZESTNICTWA I WPŁYW SPOŁECZNOŚCI: ODKRYWANIE CZYNNIKÓW KSZTAŁTUJĄCYCH DROBNYCH ROLNIKÓW W UPRAWIE WARZYW NA ZANZIBARZE

STRESZCZENIE

Cel: Głównym celem badania było określenie czynników wpływających na udział drobnych rolników w uprawie warzyw w Zanzibarze w Tanzanii. Dzięki temu wypełniono lukę badawczą poprzez szczegółowe zbadanie wpływu społeczności i przyjęcia technologii – obszarów, które nie zostały dokładnie wcześniej zbadane. **Metody:** Do zbadania próby 149 losowo wybranych drobnych rolników uprawiających warzywa z okręgów Dimani i Kombeni wykorzystano ilościowe podejście badawcze z projektem przekrojowym. Dane zebrano za pomocą ustrukturyzowanych kwestionariuszy, a do analizy danych zastosowano analizę opisową i model probitowy. **Wyniki:** Czynniki, takie jak: płeć, poziom wykształcenia, wpływ społeczności, dostęp do ziemi, dostęp do kredytów, dostępność środków produkcji rolnej i przyjęcie technologii, znacząco wpływają na udział drobnych rolników w uprawie warzyw. **Wnioski:** Udział drobnych rolników w uprawie warzyw jest znacząco zależny od różnych czynników, m.in.: płci, poziomu wykształcenia, wpływu społeczności, dostępu do ziemi, dostępu do kredytów, dostępności środków produkcji rolnej i przyjęcia technologii. Czynniki te łącznie podkreślają potrzebę ukierunkowanych interwencji, które rozwiążą nierówności społeczno-ekonomiczne, poprawią dostęp do zasobów i będą promować przyjmowanie nowoczesnych technologii rolniczych w celu zwiększenia udziału drobnych rolników w uprawie warzyw. Badanie zaleca ponadto wspieranie inkluzywności płci, inwestowanie w programy edukacyjne i szkoleniowe, wzmacnianie sieci społecznościowych, zapewnienie bezpiecznych praw do ziemi, poprawę dostępu do kredytów i środków produkcji rolnej oraz zachęcanie do przyjmowania nowoczesnych technologii rolniczych.

Słowa kluczowe: uczestnictwo, uprawa warzyw, drobne gospodarstwa rolne, Zanzibar