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MARKET PARTICIPATION AND MARKET OUTLET PREFERENCE AMONG SMALL-SCALE POTATO FARMERS IN THE LERIBE DISTRICT OF LESOTHO

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Background

Potatoes are a common crop and a significant source of food in Lesotho. However, compared to other staple crops like maize, wheat and sorghum the area planted with potato, yield is still much smaller (Molahlehi *et al.*, 2013)

Small-scale potato cultivation has significant economic benefits for both local and national populations. Although, many smallholder farmers incur significant losses due to the poor quality of products which complicate their market participation. (Moyo, 2010).



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The structure of the potato market in Lesotho is characterized by diversity, showing variations across different regions of the country. Local markets, with their vibrant trading dynamics, serve as central hubs for potato transactions in many towns and villages (Johane & Makama, 2021). These markets facilitate direct interactions between farmers and consumers, allowing face-to-face transactions and immediate access to fresh produce (Bi-Kun Tsai, 2019).



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Smallholder farmers' engagement in markets enables them to sell their agricultural produce, generate income, and access essential resources for their households (Gomez *et al.*, 2020).

Comprehending the variables that impact the involvement of smallholder potato farmers in markets and their choice of market outlet is essential for furnishing empirical support to the scant literature about the market participation of potato farmers in Lesotho.



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Research Problem

Despite the economic significance of potato production, small-scale farmers in Lesotho exhibit limited engagement in formal markets. Market participation and outlet preference are critical in determining the economic viability of smallholder farming, as they influence income generation and overall livelihood improvement, particularly in Sub-Saharan Africa (Sigei, 2014). In Lesotho, potato production is predominantly undertaken by smallholder farmers, primarily for subsistence, due to challenges such as low productivity, limited market access, and inadequate agribusiness skills.



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The Smallholder Agricultural Development Project (SADP) was introduced to address these barriers by promoting market-oriented production in areas with commercial potential (World Bank, 2018). However, the extent to which small-scale potato farmers engage in markets and the factors influencing their participation and outlet preferences remain inadequately explored.



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- Understanding these dynamics is essential for designing effective interventions that enhance market access and optimize farmers' returns. This study seeks to examine the key determinants of market participation and market outlet choice among small-scale potato farmers in the Leribe district of Lesotho, providing insights for policy and agribusiness development.



Objectives of the Study

1. To identify factors influencing potato farmers' market participation and intensity of participation in potato markets.
2. To determine factors affecting the choice of market outlets by potato farmers.

Methodology

Research design

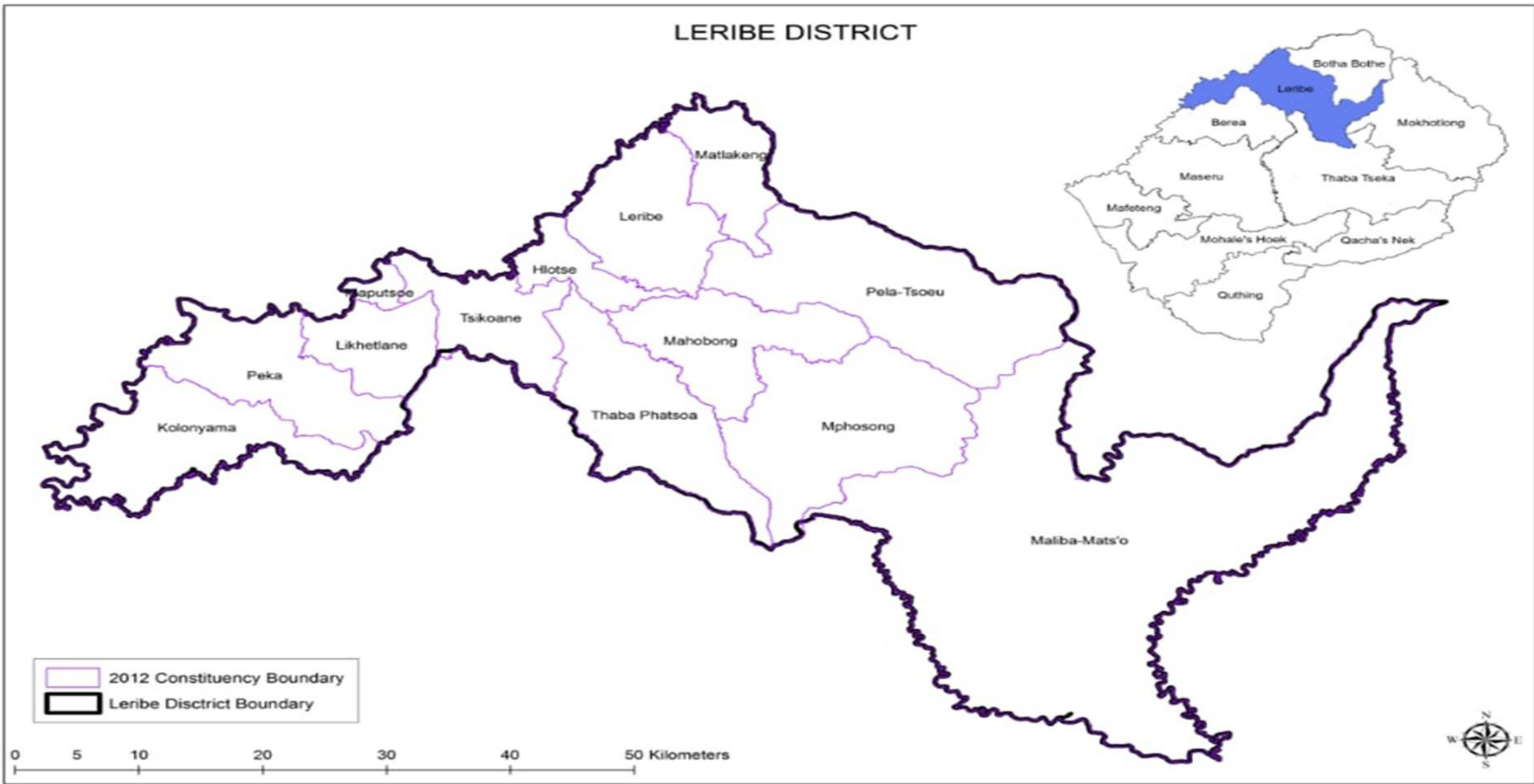
- This quantitative study utilizes a survey research approach, and the data collection method used is structured questionnaire with both closed-ended and open-ended questions to gather primary data from the respondents

Data Analysis Approach

| Objectives | Data | Analytical Tools |
|--|--|---------------------------------|
| To identify factors influencing potato farmers' market participation and intensity of participation in potato markets. | Data on type of a farmer (Market Participant or Non-Market Participant) and Data on factors influencing intensity of Participation (Quantity sold in the market) | Heckman Two-Stage Model. |
| To determine factors affecting the choice of market outlets by potato farmers. | Data on factors affecting the choice of market outlets (wholesalers, Retailers and Consumers) | Multivariate Probit (MVP) model |



Study Area



Leribe potato farmers sample frame

| No | Name of the Village | Total Population | Population Proportion | Sample Size (<i>n</i>) |
|-------|---------------------|------------------|-----------------------|--------------------------|
| 1 | Mahobong | 37 | 0.53 | 32 |
| 2 | Ha-khabo | 17 | 0.24 | 14 |
| 3 | Peka | 7 | 0.10 | 6 |
| 4 | Tale | 9 | 0.13 | 8 |
| Total | | 70 | | 60 |

Source: Ministry of Agriculture and Food Security (2024); Author's Computation (2024)

Results and Discussion

The probit model, which serves as the first step in the Heckman two-stage model, was used to determine the factors influencing farmers' decisions to participate in the potato market.



First step of the Heckman selection equation (Probit Selection)

| Probit Selection Estimates | | | | |
|--|------------------|---------------|--------------|--------------|
| Variable | Estimate | Std. Error | t Value | Sig. |
| (Intercept) | 28.530 | 46.710 | 0.61 | 0.541 |
| Gender | 0.217 | 19.861 | 0.01 | 0.991 |
| Age | 0.290 | 0.263 | 1.10 | 0.270 |
| Household Size | -1.09* | 0.594 | -1.85 | 0.064 |
| Farmer Income | -0.855* | 0.512 | -1.67 | 0.095 |
| Vehicle Ownership | -21.128 | 14.440 | -1.46 | 0.369 |
| Storage Access | 13.335 | 14.837 | 0.90 | 0.369 |
| Production Experience | -0.935* | 0.522 | -1.79 | 0.073 |
| Distance To Market | -0.016 | 0.196 | -0.85 | 0.397 |
| Contract Agreement | -35.834 | 37.462 | -0.96 | 0.339 |
| Credit Access | -43.94** | 21.08 | -2.08 | 0.037 |
| Extension Access | 11.306 | 28.597 | 0.40 | 0.693 |
| Group Membership | 34.982** | 17.565 | 1.99 | 0.046 |
| Information Access | 39.690*** | 14.53 | 2.73 | 0.006 |
| Selection Variable: Market Participant | | | | |

Source: Own survey (2023).

***, ** and * indicate statistical significance level at 1%, 5% and 10%, respectively.

Cont...

- These results align with Gachuhi *et al* (2021), that higher income levels negatively influence farmers' decisions to commercialize their farming, as higher-income farmers might not feel the need to diversify their income sources.
- This finding is not consistent with the study by Khoza *et al.* (2019), which demonstrated that extensive experience in potato farming significantly boosts farmers' chances of market involvement



The Heckman two-step outcome equation results

| Outcome Estimates | | | | |
|--|------------------|---------------|--------------|--------------|
| Variable | Estimate | Std. Error | t Value | Sig. |
| (Intercept) | 41.099 | 40.702 | 1.01 | 0.313 |
| Age | -6.064 | 7.782 | -0.78 | 0.436 |
| Vehicle Ownership | -26.482** | 13.280 | -1.99 | 0.046 |
| Marketing Experience | -2.761 | 1.896 | -1.46 | 0.145 |
| Distance To Market(KM) | 0.994* | 0.535 | 1.86 | 0.063 |
| Contract Agreement | -45.909** | 18.477 | -2.48 | 0.013 |
| Extension Access | 19.550 | 16.921 | 1.16 | 0.248 |
| Group Membership | 28.889** | 14.324 | 2.02 | 0.044 |
| Farm Income | -5.673 | 40.180 | -0.14 | 0.888 |
| Inverse Mills Ratio | 26.554* | 15.570 | 1.71 | 0.088 |
| Outcome Variable: Quantity Sold, Sigma: 37.776561, Rho: 0.15017 | | | | |
| Source: Own survey (2023). | | | | |
| ***, ** and * indicate statistical significance level at 1%, 5% and 10%, respectively. | | | | |

Cont...

- These results are not consistent with a study conducted by Dlamini *et al* (2019), which revealed that vehicle ownership positively influenced farmers' decisions on which merchants' market outlets to sell their goods in.
- A study by Moono, (2015) revealed that farmers' groups are essential to the marketing of farmers' produce because they can create collection centres where goods can be sold directly to consumers and offer market information, which encourages farmers to become more integrated into market.



Determinants of marketing outlet choice by potato farmers

| Variables | Coefficient(Standard error) | | |
|--------------------|-----------------------------|------------------------|------------------------|
| | wholesalers(1) | Retailers(2) | Consumers(3) |
| Gender | 0.193(0.480) | -0.391 (0.441) | -0.542(0.434) |
| Household Size | -0.014(0.188) | 0.165(0.996)* | -0.124(0.103) |
| Farmer Income | 0.625(0.516) | -1.145(0.450)** | 0.145(0.405) |
| Vehicle Ownership | 0.095(0.499) | -0.227(0.422) | -0.913(0.405)** |
| Group Membership | -0.223(0.568) | 0.274(0.449) | -0.001 (0.438) |
| Storage Access | 00.91 (0.668) | 0.530(0.450) | -0.563(0.470) |
| Contract Agreement | 0.598(0.826) | -0.154(0.692) | -1.037(0.678) |
| Distance To Market | 0.010(0.018) | -0.017(0.730) | 0.036(0.017)** |
| Extension Access | 0.212(0.597) | 0.634(0.491) | 1.117(0.506)*** |
| Credit Access | 1.316(0.809) | -0.017(0.491) | 0.849(0.843) |
| Information Access | 0.310(0.541) | 0.355(0.449) | 0.990(0.498)* |
| Constant | -2.755(1.419)** | 0.682(1.120) | 0.690(1.186) |

Source: Author (2024). ***, ** and * indicate statistical significance level at 1%, 5% and 10%, respectively.



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- This finding contrasts with the results of Mugenzi *et al* (2021), who reported that higher income levels positively influenced farmers' preference for collectors and consumers' market outlets.
- This result is consistent with research by Dlamini *et al* (2019), which found that farmers' propensity to select merchants' market outlets for their product was positively influenced by transit ownership.

Conclusion and recommendations

- Household size, farmer income, production experience, access to credit, group membership, and access to market information were significant determinants positively influencing market participation.
- Gender was found to negatively influence participation intensity, while vehicle ownership, market distance, and contractual agreements positively impacted the intensity of market participation
- Vehicle ownership negatively impacted the decision to sell directly to consumers, as farmers with transportation means opted for more profitable market options such as wholesalers or urban markets. Market distance and access to market information were crucial in determining outlet choice



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To expand on this research, future studies could examine the profitability of the different markets that potato farmers may access as well as the transaction costs associated with each market in the research region.



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