Running Head: Factors Affecting Market Access for Horticultural Farmers

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ABSTRACT

Access to markets is crucial in enhancing agricultural sales and improving small-scale farmers' revenue. This study was carried out to determine and analyze the factors that affect small-scale horticultural farmers' access to domestic markets. The study engaged various producers from the North Central, Kavango, and Zambezi production zones as well as the formal and informal traders from the Central, Karst, North Central, Kavango, and Zambezi trading zones. Moreover, a survey approach was used, where a sample of 30 key and active small-scale producers, 17 formal traders, and 25 informal traders were selected. The data was analysed using Microsoft Excel, and SPSS. Results indicate that about 3 factors that were run in the logic model, age, distance to market and access to information significantly affect the producer's access to markets. Furthermore, the study found that other factors such as transport cost, compromised quality, inconsistent supply, and lack of cold storage and transport facilities, limit small-scale producers' participation in the formal markets. Therefore, this study recommends that fruit value chain development should be included in the Crop Value Chain Strategy, to have targeted interventions that will stimulate market access by small-scale horticulture producers in Namibia.

Keywords: market access, horticulture, small-scale, traders, formal markets, informal market

INTRODUCTION

Agriculture is a strong competitor for fostering economic growth, eradicating poverty, and improving the state of food security in Africa (Forchu, 2019). It contributes significantly to ensuring appropriate nutrition and bettering the standard of living for poor households (Dioula, 2013). According to Sikwela, (2013), food production by smallholder farmers is thought to have the potential to affect the nutrition of the people living in their households, either directly through consumption or indirectly through the generation of some revenue that enables them to buy local food. A significant source of income in rural Africa is therefore agriculture (Davis et al., 2017).

Moreover, access to profitable markets is one of the most important aspects of small-scale farmers' success therefore in that of horticultural farmers (Machethe, 2004). This calls for systems that are receptive to the demands of the farmer (e.g., market information, market intelligence, efficient farmer organisation, etc.) (Jari & Fraser, 2012). However, due to numerous restrictions and impediments, smallholder farmers typically find it challenging to participate in markets in emerging economies (Jari & Fraser, 2012). Additionally, smallholder farmers' participation in markets has the potential to reduce poverty and increase food security (Gani & Hossain, 2015; Kiesel et al., 2022). Equally important markets are essential for

economic growth and the long-term development of a country, but policies have been focusing more on increasing production for rural development (Mahlangu et al., 2020). Mahlangu further asserts that successful agricultural marketing increases output and wages, raises prices for prospective producers, and lowers prices for consumers. Therefore, smallholder farmers' access to markets for the sale of their goods gives them the chance to earn more money and maintain a sustainable way of life, which enhances their welfare, and consequently promotes economic growth and development (Mkhari et al., 2014 & Ochieng et al., 2020). In the context of Namibia, the horticultural sector is steadily expanding but continues to face numerous obstacles like drought, expensive inputs, pests, and diseases. With a consistent issue of lack of market access and the fact that the country continues to be a net importer of fresh fruits. As a result, the Namibian Agronomic Board (NAB) implemented the Market Share Promotion (MSP) scheme to ensure that Namibian registered traders purchase a certain minimum percentage of their quarterly turnover from local farmers before being granted an import permit (NAB, 2020). Close border periods for the top 19 Special Controlled Products (SCP) are implemented during the time of sufficient local supply, and most of the common horticultural products produced by smallholder farmers are part of the list of special controlled products (NAB, 2020).

Despite these, small-scale horticulture farmers constantly complain of a lack of market for their produce. Furthermore, although the Agro-Marketing and Trade Agency (AMTA) has tried to buy from small-scale producers and tries to find markets for local fresh produce, it continues to face resistance from traders (Shaanika, 2019; Nembwaya, 2020; Shigwedha, 2021). According to the Namibian agronomic board annual report (2018/2019), Namibia recorded a total consumption of 89,083 tons of horticulture fresh produce worth N$658 million during the 2018/2019 financial period. This indicates an 8% increase from 81,452 tons of fresh produce consumed during the 2017/2018 financial period. During the aforementioned period, more than half of the fresh fruits and vegetables consumed in Namibia were imported, and only about 35% were locally produced. It was on this basis that the NAB conducted this in-house study to determine and analyze the factors that affect the farmers' access to domestic markets, and ultimately make recommendations for the benefits of the small-scale farmers and the horticultural value and supply chains respectively.

LITERATURE REVIEW

Factors affecting market access

Several studies looked at the small-scale market situation, with most focusing on factors that affect small-scale market participation. Market access is defined by Killick et al. (2000) as the methods used by individuals to enter markets as well as the nature, effectiveness, and costs of these methods. Market access, in the context of smallholder farmers, can be defined as the ability of these farmers to seize available market opportunities. This may serve as a profit incentive and may encourage farmers to increase production, thus contributing to household income and food security. It is widely understood that smallholder farmers lack access to lucrative markets due to several constraints. Forchu, (2019) states that due to low access to financing, limited infrastructure, and poor access to market information small-scale farmers lack strong negotiating power when dealing with traders and increased transaction costs.

A study by Jari and Fraser (2009) states that small-scale farmers face technical and institutional barriers which make it difficult for them to participate in and access marketplaces. Furthermore, poor infrastructure, a lack of market transportation, a lack of market information, a lack of bargaining power and other obstacles have made markets less effective and accessible for farmers. In agreement, studies such as (Komarek, 2010) discovered that market participation is affected by output price, yield, and availability of pricing information prior to sale, household size, land ownership, and outside of farming income. In addition, studies found that the majority of small-scale horticultural farmers sell their goods in adjacent open-air markets, while others do so through middlemen, which is frequently less profitable due to unfair prices and high post-harvest

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losses. This is a result of the high transaction costs associated with accessing distant markets and failure of meeting required quantity and quality standards in high-value markets. Many small-scale farmers also lack the information and organisational resources necessary to adhere to the volume, quality, and timely supply requirements of the modern agricultural value chain (Arias et al., 2013). Additionally, studies postulate that the lack of sufficient storage, post-harvest management, and transportation facilities, the existence of intermediaries, which leads to high produce costs, poor farmer access to credit, and an inadequate supply of hired labour as a result of low pay for their services are all factors that contribute to inefficiencies in the agricultural marketing value chain (Chand, 2012). Therefore, to control middlemen excesses, strengthen producers' bargaining power, and encourage collective marketing, it is necessary to address these value chain inefficiencies. This will provide farmers with more opportunities to sell their farm products and increase their income.

In their article on the commercialization of urban farming by Southwest vegetable farmers, Akinlade, Balogun, and Obisesan (2013) noted that marketplaces and market access were crucial areas that needed to be improved if income in Africa was to increase. This is owing to the significant restricting constraint that weak market access links have on farmers. As a result, the process of consolidating the rising farmers should not be seen in a limited context that simply allots land and water, but rather in a wider perspective that embeds access to these resources into an overall economic framework that includes access to markets, financing, extension, and so on. Moreover, many small-scale farmers lack a thorough understanding of the market, how it functions, and why prices change. They also have little to no knowledge of market conditions and prices, are not collectively organized, and lack market bargaining expertise (Freeman & Silim, 2001). According to Mwambi, Oduol, Mshenga, and Saidi (2016), one strategy for achieving development goals could be to increase smallholder horticultural farmers' access to domestic and foreign markets. Further avers that encouragement of smallholder access to high-value markets is essential to boost incomes and reduce poverty, which is a major issue in Sub-Saharan Africa, and Namibia is not an exception.

According to Eskola (2005), Tanzania's primary trade barrier is its physical infrastructure. Successful smallholder farmers have obtained access to more lucrative markets through a variety of strategies. Other authors state that the best practices that might help smallholder farmers gain access to the market included mass production, organising into groups, improving steady supply, and fostering business development (Wiggins & Keats, 2013). In particular, when transaction costs decline and larger benefits from trade are possible, access to market information would allow farmers to increase revenue from crop sales. Access to markets for smallholder farmers may be improved by increasing the availability of market information. In addition, farmers can strengthen their negotiating position, have the choice of travelling to faraway markets if doing so will provide higher returns, and are able to select the ideal sales period when they are given accurate market information at the appropriate moment (Zanello & Srinivasan, 2014).

In Ethiopia, the usage of mobile phones to acquire agricultural information was studied by Kaske, Mvena, and Sife (2018). After gathering information from 320 household heads who own mobile phones, it was discovered that more than 90% of them are used for calls related to agriculture. Additionally, it was determined that mobile phones significantly contribute to the dissemination of information. In agreement, studies add that, by setting up farmer- and market-led extension systems, which include educating farmers on how to establish farmers' groups for joint marketing of their produce and publishing agricultural market data, particularly of prices in various markets, farmers may be able to increase their bargaining leverage, lower transaction costs, expand sales, and earn more money from the sales of their farm products (Ferris, Robbins, et al., 2014; Ferroni & Zhou, 2012). Further adding that with these interventions' smallholder farmers may benefit from economies of scale, and they will easily access extension services as a collective rather than as individuals. Additionally, an extension could supply market information by collaborating with regional communication service providers to create programmes for regional radio stations, regional newspapers, and bulletins, which are more official mediums to convey market information to farmers.

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Model

Several studies in Africa have investigated the market access of small-scale farmers in markets. Ngi et al, (2021), in their study on factors that affect market access of green Pomelo farmers, used the logit model to model the extent to which each factor affects market access. They found that six factors including; linkage, training, distance to markets and age affect farmers' market access significantly. Moreover, other studies used the Logit regression model to determine the factors that affect small-scale horticultural farmers; Hassan, (2015), Magingxa, et al (2009). Another study looked at the determinants of formal market access of livestock farmers, a logistic model was applied (Sehar, 2018). Hassan used the logit model to assess the effect of a number of attributes on the probability that spice crop farmers would access the market for their produce. From their results, they deduce that seven explanatory variables i.e. number of spices sold, distant market, market organization, market information access, spice price, quantity of spice demanded and quantity of spice sold have a unique statistically significant effect on market access in farmers. Another study on linking smallholder farmers to markets used descriptive statistics to summarize and give an overview of the factors that affect small-scale horticultural farmers' access to the market for poverty reduction in Fako (Forchu, 2019).

METHODOLOGY

Area of study and sampling

The study sampled individual small-scale horticulture farmers situated in the North Central, Kavango, and Zambezi production zones, as well as formal and informal traders situated in the Central, Karst, North Central, Kavango, and Zambezi trading zones. The study had a population size of 72 potential respondents and 69 respondents from producers, formal traders, and informal traders were interviewed.

Data collection and analysis

Primary data were collected through a survey (face-to-face interviews) using a structured questionnaire with both open and closed-ended questions. The questions covered both aspects of supply (production) and demand (market) related issues. Additional or secondary information from previous studies, reports, and online data from other relevant institutions was also reviewed and utilised to support the primary data collected through the survey. The data was analysed using SPSS version 29 software.

Descriptive statistics are used to describe and summarize the data for better understanding and relate to what literature has found. Further, a logistic regression model is employed in the analysis to determine the degree to which each attribute has on market access. Factors such as access to information, training, contract agreements, produce quality, infrastructure (cold storage facility), value addition and distance to markets are included in the model. Although this study did have traders as respondents, the main data analysis focus was the producers.

Model specification

To model the factors influencing horticultural producers' access to the market, the Logit model was used.

The implicit model is specified thus:

$$Y = \beta^0 + \beta^1 X^1 + \beta^2 X^2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e. \quad (1)$$

Where Y refers to the market access of a farmer and X_1 to X_{11} are explanatory variables which are

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hypothesised to affect market access; β_0, to β_5, are parameters to be estimated; and e is the stochastic disturbance term. After entering the variables from the data collected, the regression model will be specified as follows:

Mathematical model for estimating market access:

$$MA = \beta^0 + \beta^1 Age + \beta^2 Gender + \beta^3 Average\ Distance + \beta^4 Unavailability\ of\ transport + \beta^5 Lack\ of\ access\ to \frac{finance}{credit} + \beta^6 Access\ Market\ Info + \beta^7 Access\ to\ storage\ facility + \beta^8 Lower\ prices + \beta^9 Access\ to\ roads \quad (2)$$

MA is the dependent variable of Market Access of the horticultural producers. All these factors were initially included in the model but they made the model redundant therefore only 5 factors were run in the final analysis.

RESULTS AND DISCUSSIONS

Demographic Characteristics

Table 1: Demographic characteristics of producers

Characteristics	% frequency
Age	
Less than 30 years old	4
330 – 39 years old	12
40 – 49 years old	36
50 – 59 years old	20
60+ years old	28
Gender	
Male	68
Female	32
Production Zones	
Kavango	28
North Central	40
Zambezi	32

Source; Author compilation from survey results 2023.

Table 1 shows the demographic characteristics of the horticultural farmers that were interviewed. Results indicate that about 40% of the producers are from the North Central, Zambezi (32%) and 28% from Kavango (28%). The distribution of the respondents by sex was carried out to ensure both women and men were represented in the study. The results indicate that about 68% of the farmers interviewed were male and 32% were female. This gender difference in the respondents indicates that male dominance in agricultural activities remains common now with regard to gender responsibilities in farming. The findings indicate that women's participation and access to production are restricted (Hassan, 2015) and are still economically and socially disadvantaged. This is in contrast with results (Forchu, 2019), in which about 52% of the respondents were women as opposed to about 48% of men. In addition, Table 1 further illustrates that the majority (36%) of the respondents were in the age group of 40 – 49 years old followed by those in the age group of 60 years and above (28%). This reflects the lack of youth participation in agriculture in the country

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and may further reflect that older farmers have strong trust and reputation, which indicates that they have higher credibility as a result of engaging in farming operations for a longer period of time and opening up prospects for business at competitive rates. According to Musemwa, (2007), youth involvement in agricultural activities is very crucial because the future of the agricultural industry depends on them.

Production by Small-Scale Producers and Uptake by Traders

Figure 1 depicts that out of the interviewed producers, 51% indicated that they sell their products through the informal market (local village/community/street vendor/open market and or at farm/farm gate stall), whilst only 48% indicated that they sell their products through formal markets, i.e. dealers such as retailers, processors, agents, farmers' market or associations, through production contracts with distributors/retailers, government agencies such as AMTA, and/or catering companies. About 1% of the respondents indicated that they sell outside of Namibia, specifically to Zambia. These results are consistent with those of (Forchu, 2019), who found that small-scale vegetable farmers had no access to formal markets because wholesalers, retailers, some farmers and transporters had pre-set agreements which affects small-scale farmers' access to these traders.

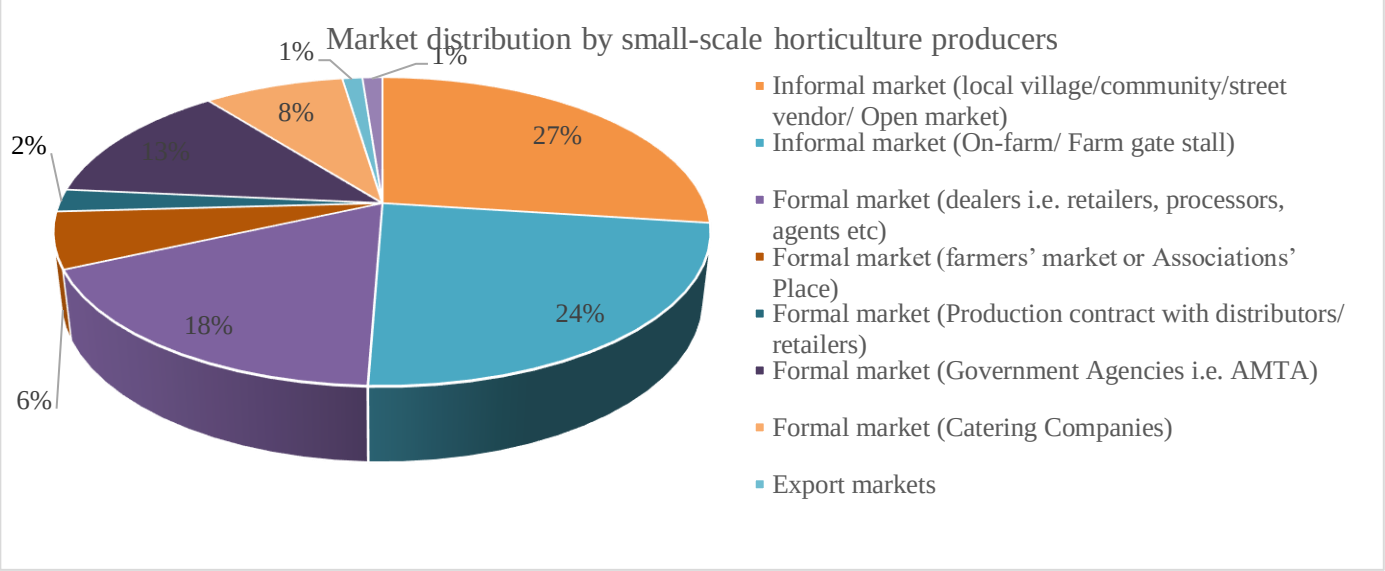

Figure 1**:** Market distribution for small-scale horticulture producers in North Central, Kavango, and Zambezi (Survey data, 2021)

Market Access and Transportation

A total of 96% of the interviewed producers access their markets via tarred/gravel roads, apart from the 4% that indicated that they use a sandy road. They indicated having to travel for a minimum of 4km and a maximum of 200km to reach the formal markets. Producers further indicated that they spend a minimum amount of N$6.60 per km on transport to the markets, and the rate can get as high as N$30.00 per km.

In terms of who provides transport to the market, as indicated in Figure 2, the majority of producers (46%) have their own transport and they usually deliver their produce to the market or traders. A small proportion of producers (10%) indicated that some traders collect the produce from the farm themselves, however, this is still at the producer's cost. From the traders' perspective however, 57% of the producers provide their transport and they bear the costs. According to (Forchu, 2019), the high cost encountered by farmers is because they cover the transportation costs alone and other costs related to delivering their outputs to the market. Due to that, farmers usually prefer to sell their products closer to farms or at farm gates to reduce and avoid transportation costs (Musemwa, 2007).

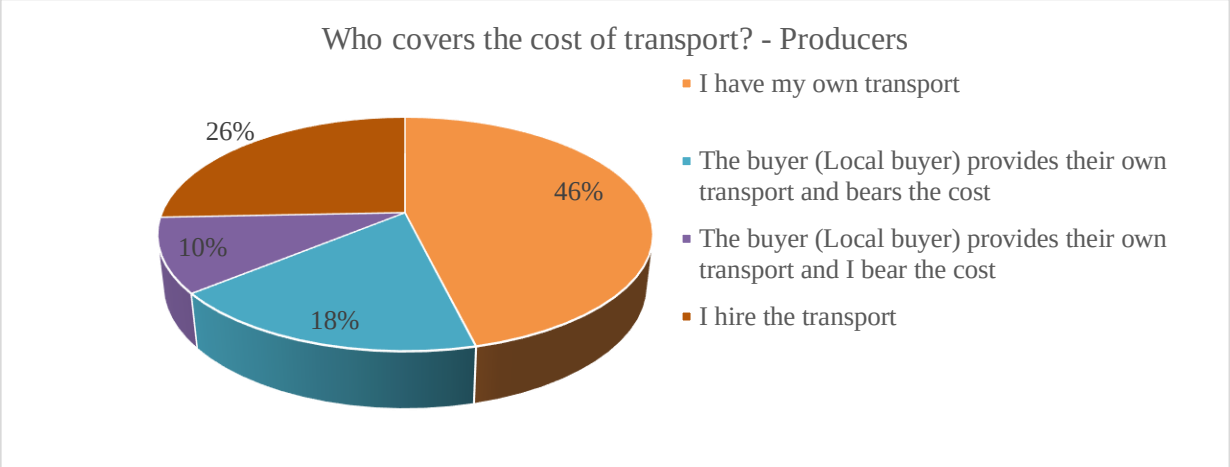

Figure 2: Transport cost coverage – Producers (Survey data, 2021)

Access to Information and Training

Access to information about the horticulture industry is another important aspect of a successful horticultural enterprise. Farmers must be well informed about the industry they operate in for them to make informed decisions especially when it comes to production. The results indicate that over 90% of the small-scale horticulture producers indicated that they have access to information about the horticulture industry in terms of market prices, production, and demand. A study by Dlamini and Huang, (2019) states that access to market information about the price, demand and supply helps farmers in organising supply dates to the market, helps farmers reduce transaction costs as well as increases market incentives by allowing the producers to select the right market place and selling price.

Training also forms an integral part of a successful crop farming enterprise as it enhances knowledge to improve production and income generation. According to the results, only 71% of the producers have received training in vegetable grading, thus leaving 29% without any knowledge about vegetable grading. These percentages leave room for improvement, especially from the regulator's side, to ensure a developed industry.

Traders perspective

From the trader's perspective, 100% of the interviewed formal and informal traders indicated that they source or buy their horticulture products from small-scale farmers. The traders, however, also highlighted the challenges they experience when sourcing from small-scale producers. The study revealed that about 47% of formal traders do minimal value addition of cutting, peeling, dicing, shredding, and mixing of some vegetables such as carrots, butternuts, and cabbages, whereas a few (20%) of informal traders do some drying of vegetables such as spinach and beetroot leaves.

Price Determination by Producers and Traders

Respondents from all categories were also asked to indicate who sets up the prices when selling or buying the products and their responses are summarised in Figures 3a & b.

For producers, the pricing category of "both buyer and seller negotiate" on the price scored the highest with over 50%. This was, however, contradicted by traders who scored over 51% on the pricing category "the producer as the seller" sets the price, whilst only 35% of the producers indicated that they set the price themselves as sellers. Nonetheless, there is room for negotiation as both traders and producers scored close to 50% (51% – producers, 47% – traders) on the category of "both buyer and seller negotiate" (Figure 3a &

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b).

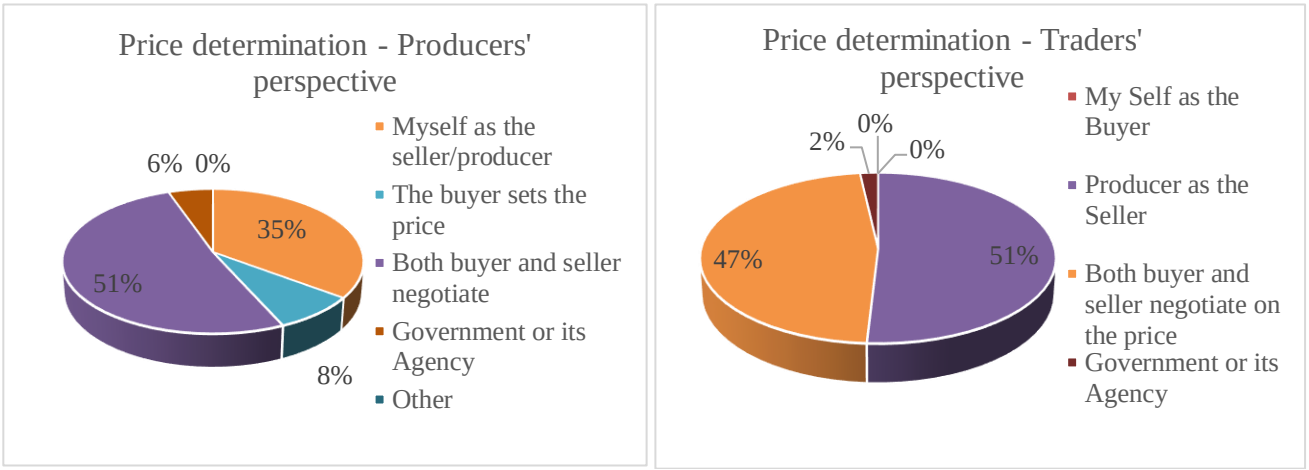

Figure 3a & b: Price determination; Producers' and Traders' perspectives (Survey data, 2021)

The majority of traders and producers indicated that they feel comfortable about the "negotiating" pricing method because more often than not, it leaves both parties satisfied with the final negotiated price. Some formal traders, however, feel that sometimes the producers price the products at a high price, even when the products are not of top quality. This then leads to formal traders not being able to competitively price and sell the products. The informal traders feel as if they do not have any control over the prices being charged by the producers and hence they are always left with no choice but to accept whatever price is being charged due to a lack of bargaining power. The small-scale horticulture producers on the other hand also feel that they are being forced to under-price their produce especially when they have to negotiate the price with the traders. They indicated that the low prices offered to them hinder them from expanding their production and they are also, in most cases, unable to break even and cover their operational costs.

Logit model results

Determinants of market access

According to Molla-Bauza et al. (2005), a logit model is a multivariate method used to study relationships between dichotomous dependent variables and several independent variables. As a result, following the literature, a logit model was applied for factors that were assumed to affect formal market access. In addition, for two crucial reasons, logistic regression is frequently utilised in economic research. One is that the function is quite flexible and easy to utilise. The second justification is that it is simple and meaningful to comprehend the results (Kleinbaum, 1994).

Table 2: Results of the Logit Model

		Coefficient	Std. Error	Sig.
Threshold	[MA = 0]	17.549**	8.600	0.041
Location	Age	2.139**	1.084	0.048
	Average Distance	-0.030**	0.014	0.041
	Unavailability of transport	1.591	1.806	0.378
	Lack of access to finance/credit	2.265	1.479	0.126
	Access Market Info	5.253***	3.066	0.087

Significance level: **5% and *** 10%

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Table 3: Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	31.492			
Final	19.141	12.351	5	0.03

According to the results above, out of 5 variables included in the model, the small-scale horticultural producers' market access is affected by 3 variables, namely; age, average distance to markets, and access to market information. The levels of significance are 5% and 10%. Among all the significant factors, **distance to the market** has a negative effect on market access. This is in line with results from Ngi (2021) and (Hassan, 2015) stating that with the reason that a number of farms are far from the marketplaces, it is expected that distance would play a crucial part in determining farmers' market access. The value implies that an increase in the distance to markets could decrease the probability that farmers access the market by 3%. According to Delgado (1999) as cited in Hassan, (2015) the longer the distance to the market, the more costly and difficult it gets for producers to access the market.

Access to market information was positively significant to market access, which infers that it is more likely for farmers with access to market information to access the market. The 5.253 coefficient value stipulates that all other factors held constant, the probability of farmers that have access to market information were 5.253 times more likely to access the market as opposed to the farmers with no access to market information. Due to inadequate public information, smallholder farmers typically rely on informal networks (traders, acquaintances, and family) for market information, according to Ruijs (2002).

Nevertheless, depending on informal networks for market insight runs the danger of receiving biased information because of the more knowledgeable groups' opportunistic behaviours. For instance, when the broker notifies the smallholders that their food is of poor quality, Mangisoni (2006) explained that smallholders typically accept low prices for their crops, since they are unable to bargain intelligently.

Age has the expected positive significant effect on market access. This can be attributed to the fact that the elder farmers have more experience and have made long partnerships with the traders as opposed to the young aged farmers who are just learning how the market works. The 2.139 age coefficient infers that all things equal, the older the producer gets the higher the likelihood of accessing the market. This is consistent with Musara et al., (2018) study, which found a positive influence of the effect of age on farmers market participation. Furthermore, this is in contrast to the results by Akintayo et al., (2022), which found that age had an insignificant negative effect on small-scale farmers' access to markets, as opposed to the positively significant coefficient. The dependent variable, market access is also significant at 5%, which infers that all the market challenges held constant, the likelihood that horticultural farmers will access the market increase by 2.14.

The results on **access to finance/credit** gave the expected signs but are not significant as expected. The possible reason for this is that most of the farmers, about 13.6% indicated access to credit as one of the challenges to accessing markets. These results are similar to those of Maspaitella et al., (2018) and Ismail et al. (2013) who finds in their study that credit was a positive but insignificant effect on market channel participation. The **unavailability of transport** had a positive insignificant effect on horticultural producers' market access, however, it was expected to have a negative sign such that the lesser the availability of transport, the harder it is for the producers to reach markets.

The logistic regression model's "goodness-of-fit" test measures how well the model fits the given set of data. According to Hill et al. (2001), a good fit result in a non-significance finding for the tests. The

goodness-of-fit test results, which are displayed in Table 3, show that the model does an adequate job of fitting the data. The logistic regression model is thus ideally adapted to forecast the influence of independent factors on the dependent variable, as evidenced by the finding for chi-square.

Market access for smallholder farmers in rural areas creates local and international links that present both opportunities and difficulties (IFAD, 2010). Farmers are able to advertise their products, obtain inputs and loans, access other consumer items, learn about and adopt new technology, and access a variety of marketplaces. Equally important, through a variety of avenues, it makes a tremendous contribution to guaranteeing higher welfare and earnings for farmers (Gani and Adeoti 2011). The actors look at transaction costs and earnings initially before deciding on the sort of market. Actors are able to desire either a formal or an informal market for the flow of their products thanks to the interaction of all these factors.

Farmers and traders' suggestions:

Both traders and producers, who were the most significant stakeholders in the study when interviewed, made several recommendations that they felt were needed to better the condition of small-scale producers who are always having difficulty accessing official markets.

Traders:

Assist farmers/producers with transport and cold storage facilities, encourage producers to get registered with the NAB and enhance extensive training for producers, especially in crop management. They further suggest ensuring a sufficient supply of various products throughout the year and avoiding an oversupply of similar products simultaneously. Additionally, increase access to financial support/credit facilities, training on grading, and awareness of food safety aspects, prices, especially producer prices, should be regulated, taking into consideration the input costs to avoid producers' price exploitation and encourage production agreements or supply contracts to access credit facilities for production

Producers:

The producers suggested for provision of financial support to small-scale horticulture producers so that they can collaborate with larger wholesalers. Furthermore, regulating authorities such as the NAB should provide platforms for traders and producers to engage as there seems to be no engagement at this level that is targeted at training and industry development, especially platforms that are aimed at assisting the smaller producer. In addition, the government should create favourable economic activities that will increase customer spending for traders.

CONCLUSION AND RECOMMENDATIONS

In general, the market access of small-scale horticultural farmers in Namibia is still limited. The factors found to significantly affect market access, from those that were modelled were distance to the market, age and access to information. In which, access to market information has the most positive and strong influence on farmers' market access. The study has further found that factors challenging farmers' market access include training on production, value addition, high transport costs and producer price bargaining power. As a result, several policy implications are proposed to improve the accessibility to the market:

The local government needs to start offering farmers training courses on farming methods and marketing strategies. Through these programmes, farmers can not only increase their farming productivity and product quality but also become more proactive in approaching markets and managing market risks. Furthermore, producers must improve their connections and integrate with other actors in the supply chain for horticultural producers, through this farmer may be able to share experiences, production methods, and

financial resources as a result. Additionally, this gives farmers additional market information sources to prevent price compression. Moreover, vertical integration may aid farmers in developing a profitable commitment to stable output and a supply of produce. Farmers should actively learn about the market and increase their ability to receive information from a variety of sources, including the Internet, phones, media, etc. Additionally, for farmers to receive official and trustworthy information and to have the right production orientation, the local agriculture and information sectors As well the extension services must work closely together to increase the media's ability to disseminate market information, offer extensive farmer training on various aspects and improve farmers access to credit. Equally important, the Namibian Agronomic Board should include strategies that will stimulate agro-processing in Namibia, into the 5-year crop value chain strategy that is being developed to encourage value addition among producers and traders and subsequently develop a viable horticultural industry. Finally, more market value and supply chain research with robust and extensive data should be a priority for academic and industrial-based institutions for the benefit of the small-scale farmers and the Namibian economic development at large.

Conflict of Interest

The authors declared that they have no conflict of interest.

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