https://doi.org/10.64211/oidaijsd190512

# Effect of Strategic Partnerships on the Resources and Sustainability of Smallholder Deciduous Fruit Farming Enterprises in High-Value Chains

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OIDA International Journal of Sustainable Development, Ontario International Development Agency, Canada.
ISSN 1923-6654 (print) ISSN 1923-6662 (online) www.oidaijsd.com
Also available at https://www.ssrn.com/index.cfm/en/oida-intl-journal-sustainable-dev/

**Abstract**: Integrating smallholder farmers into high-value agricultural chains has emerged as a critical strategy to improve farm incomes in developing countries. Integration offers opportunities for smallholder farmers to advance beyond production, potentially engaging in higher-value activities such as product design, marketing, and distribution. This study examines the impact of strategic partnerships on the resources and sustainability of smallholder deciduous fruit growing enterprises within these high-value chains. Using hierarchical linear regression analysis, the research evaluates how these partnerships influence the resource base and long-term viability of these enterprises. The findings reveal that while strategic partnerships facilitate the production of high-quality fruit, thus boosting the supply base and competitiveness of exporting firms, there are limitations. Specifically, the study indicates that investments from strategic partners serve primarily to improve the quality of production rather than to build autonomous marketing capabilities among smallholder farmers. Moreover, the degree of commitment of smallholder farmers to these partnerships, coupled with the nature of resource investments, is significantly correlated with an adverse effect on the farmers' overall sustainability. Farmers should thus explore alternative marketing opportunities outside the confines of these strategic partnerships to foster entrepreneurial growth and ensure the sustainability of their farming enterprises. The findings have significant implications for the livelihood strategies of smallholder deciduous fruit farmers, particularly in terms of balancing the benefits of partnership with long-term sustainability goals.

**Keywords:** commitment, exporting firms, marketing capabilities, quality of relationship, specific investments

## Introduction

Integration in high-value chains represents a credible pathway to improving the welfare of small farmers in developing countries (Romero and Wollni, 2018; Vos and Cattaneo, 2021; Wang *et al*., 2021). Within high-value chains, smallholder farmers could move to higher value-added functions such as product design, marketing, and distribution, which are more lucrative than production. Upgrading smallholder farmers to these functions is expected to stimulate income growth in rural areas, enabling them to sustain their farming enterprises. As lucrative as the opportunities presented by high-value chains may be, smallholder farmers find it difficult to integrate into high-value chains due to various constraints, which might pose a risk to the quality of the final product.

To reduce the risk of losses that could arise from smallholder farmers not meeting high-value chain requirements, smallholder farmers enter supplier-buyer relationships with potential buyers (Gramzow *et al*., 2018; Basu *et al*., 2020; de Brauw *et al*., 2020). Buyers apply their marketing capabilities to help smallholder farmers design a product that appeals to customers. They also specify process parameters in supplier quality control processes by introducing new production systems or monitoring processes and procedures (Humphrey and Schmitz, 2002; Arden *et al*., 2021). Buyers also specify logistics to ensure timely delivery of quality produce (Butt, 2021; Nechaev and Schupletsov, 2021; Kaushik *et al*., 2022). Although buyers in advanced economies often specify product design, with marketing and distribution being handled by local buyers, there is an understanding that, over time, smallholder farmers would learn from buyers and develop these marketing capabilities (Magesa *et al*., 2020).

The value chain literature has looked at the prospects of the development of marketing capabilities by smallholder farmers integrated into high-value chains through learning from buyers. While there is evidence that small suppliers in sectors such as apparel and automobiles were able to learn from their buyers and subsequently moved to higher value-added functions in the value chain, some researchers are of the view that buyers will never allow their suppliers to learn anything beyond production, as that would mean encroaching on their core capabilities (buyers) (Schmitz and Knorringa, 2000).).

This article looks at smallholder deciduous fruit producers integrated into high-value chains through strategic partnerships with established commercial farmers and/or exporting companies in South Africa. The purpose is to determine to what extent these partnerships contribute and/or affect the resources and sustainability of smallholder agricultural enterprises in high-value chains. The article is organized as follows. Section 2 presents the theoretical framework, which outlines marketing capabilities and their potential to sustain agricultural enterprises. The next section (Section 3) outlines the methodology followed to carry out the study. Section 4 presents the results, after which the following section concludes and makes some recommendations. The implications of the findings are presented in Section 6 of this article. Recommendations for further research are given at the end of the article.

## Theoretical framework

### Marketing capabilities and their potential to sustain agricultural businesses

The marketing literature identifies marketing capabilities as crucial for businesses seeking to create exclusive customer value (Day, 1994; Narver and Slater,1990; Slater and Narver,1994; Na *et al*.,2019; Demirel and Kesidou, 2019); and Matarazzo *et al*., 2021). These capabilities enable such businesses to produce market information, which is vital in the development of goods and services to meet customer demand (Day, 1994; Narver and Slater, 1990; Fisher and Kordupleski, 2019; Matarazzo *et al.,* 2021). Businesses seeking to create exclusive customer value usually pay attention to consumer needs within targeted markets and design products based on these consumer needs (Dickson and Ginter, 1987; Fisher and Kordupleski, 2019; Moisander *et al*., 2020; Matarazzo *et al*., 2021). These businesses can learn quickly about their markets and can produce, distribute, and respond to market conditions rationally and on time (Day, 1993; 1994; Slater and Narver, 1994; Schoemaker *et al*., 2018; Shehata, 2020; Richey et al., 2022).

Businesses in possession of marketing capabilities are distinguished from their competitors by their ability to foresee market trends ahead of their rivals, and by precisely anticipating the reactions to strategies used to retain old customers and lure new ones, enhance market relations, or beat rivals (Day, 1994; Uche, 2021; Rahman et al., 2021). This process of producing knowledge necessary to facilitate the delivery of exclusive customer value assists businesses to develop their base for a competitive advantage (Bharadwaj *et al.,* 1993; Narver and Slater, 1990; Tuominen *et al.,* 1997; Woodruff, 1997; Mahdi *et al.,* 2019; Salunke *et al.,* 2019; Bashir and Farooq, 2019; Lestari *et al.,* 2020). By learning what markets require, following the procedures essential to distribute the value they want (Narver and Slater, 1990; Slater and Narver, 1994) and adjusting those value-creating procedures in response to changes in market conditions (Slater and Narver, 1995; Tuominen *et al.,* 1997), businesses develop the basis for sustainable competitive advantage (Vorhies *et al.,* 1999; Kankam-Kwarteng *et al.,* 2019; Jiménez-Zarco *et al.,* 2019; Kang and Na, 2020; Chkanikova and Sroufe, 2021).

Similarly, smallholder farmers integrated into high-value chains through supplier-buyer relationships could learn and develop these marketing capabilities through participation and participation in business functions undertaken by buyers. These marketing capabilities could help small farmers to sustain their farming enterprises. The Resource-Based View also acknowledges the potential of marketing capabilities to sustain businesses and attributes it to their value, rarity, inimitability, and non-substitutability.

## Methodology

### Choice of the study area

This article focuses on the deciduous fruit subsector in South Africa. The Western Cape is regarded as the traditional producer of deciduous fruit in South Africa (Pieterse, 2018; Myeki *et al*., 2024; Jantjies, 2024) since the first fruit trees were planted there and it has the largest concentration of growers, representing 74 percent of the total area planted to deciduous fruit. However, the Northern Cape, Eastern Cape, and Limpopo provinces have increased their deciduous fruit production over the past two decades (Global Alliance for Improved Nutrition (GAIN), 2015; Barahira *et al.,* 2021). As a result, the Northern Cape now takes second position in the production of deciduous fruit and represents 15 percent of the total area, with the Eastern Cape as the third largest producer with 8 percent of deciduous fruit production. These three provinces were thus selected as the study areas, with the exception of Limpopo.

### Context of the study

The South African government deregulated its markets to integrate smallholder farmers into high-value chains. This was facilitated through policy reforms in land, water, labor, and credit markets. Although these policy changes favored smallholder farmers in terms of access to basic resources, they also presented new challenges, which threatened the sustainability of their farming enterprises. Commercial farmers were also challenged in that these new policy changes increased the costs of acquiring land, labor, capital, and water and exposed them to international competition. This threatened productivity on farms, including the competitiveness of commercial farmers and exporters in high-value chains.

To facilitate the integration of smallholder farmers into high-value chains, some commercial farmers and/or exporting firms responded strategically by entering into partnerships with smallholder farmers. The expectation was that smallholder farmers would be able to participate in these partnerships and develop these marketing capabilities. This was planned to be facilitated through the participation of smallholder farmers in all functions of the value chain, including marketing and related logistics. It was expected that during this process, smallholder farmers would learn and be able to operate and sustain their farming enterprises independently of their strategic partners in the future.

### Data Collection and Analysis

Primary data was collected from smallholder deciduous fruit producers in the Western Cape, Northern Cape, and Eastern Cape provinces of South Africa using a questionnaire. Both descriptive and inferential methods of analysis were used to analyse the data. To determine the extent to which strategic partnerships affect the resources and sustainability of smallholder farmers in high-value chains, a hierarchical multiple linear regression analysis was used. Before commencing with the analysis, the researchers first checked whether the data meet the assumptions of (1) a linear relationship between the dependent and independent variables; (2) normally distributed error component; (3) no multicollinearity, and (4) no heteroskedasticity, as required in a multiple hierarchical linear regression analysis. After confirming the suitability of the data for a hierarchical multiple linear regression analysis, the researcher proceeded with the analysis. The other sections of the article used descriptive statistics to present the results of the study.

## Results

### Biographic information of the respondents in the study areas

Table 1 presents the biographical information of the respondents.

**Table 1: Biographical information of the respondents**

| Variables | N | Mean (M) | Standard Deviation (SD) |
|---|---|---|---|
| Age | 125 | 50.2 | (11.7) |
| Education (years of schooling) | 125 | 11.7 | (3.2) |
| Experience (in years) | 125 | 12.9 | (8.0) |
| Land size (in hectares) | 125 | 102.8 | (189.3) |

**Source:** Survey data, 2020

The average age of the respondents was 50.2 years and they spent, on average, 11.7 years at school, which is equivalent to grade 12 (Matric). The level of education was not as low as is often the case with small-scale producers in developing countries. However, this was not surprising, as respondents also occupied managerial positions, ranging from production managers, directors, general managers, to technical managers, while some were also trustees. These respondents had been in these positions for almost thirteen (12.9) years, on average, which is quite a long time. Regarding the size of the land, the respondents had access to 102.8 hectares of land, on average. This result comes from the fact that some producers bought shares from commercial farms on which they worked, which were generally large in scale. While this result contradicts literature defining smallholder farmers as having less than two hectares of land, it emanated from the mode of land acquisition in the different provinces. For example, in the Northern Cape, where most of the land was acquired through TRANCRAA, some of the respondents have access to plots of land as small as one hectare, which is typical of smallholder farmers. On the contrary, the farmers who benefited from the land reform programme generally had access to larger farms. These are mainly the producers who bought shares from commercial farms on which they worked, which were generally large in scale. While some researchers would refer to the latter group as emerging farmers, not all of the farmers who participated in the study would fit this category hence retaining the term "smallholder producers". This decision is also based on the resources that constrain the participation of these farmers in high-value chains, which is typical of smallholder producers.

**Demographic data of respondents in the study areas**

Table 2 presents the demographic information of the respondents in the study areas.

**Table 2: Average farm size by province**

| Size of farm | Means | Standard Deviation |
|---|---|---|
| Western Cape | 125,4 | 178.0 |
| Eastern Cape | 106.1 | 265.8 |
| Northern Cape | 72.8 | 141.5 |

**Source:** Survey data, 2020

Regarding farm size, the respondents in the Western Cape had, on average, the largest farms (125.4 hectares), compared with the Eastern Cape and Northern Cape provinces, which had, on average, 106.1 and 72.8 hectares of land, respectively. These figures correspond to the rating of these provinces in terms of their contribution to the volumes of deciduous fruits produced in the country. The Western Cape, for example, had the largest average land size, which justified the large volumes of fruit produced in the province, with the Eastern Cape being the second largest producer of deciduous fruit. The Northern Cape had the smallest average farm size, compared to the Western and Eastern Cape provinces. This result could be attributed to the different modes of land acquisition and land tenure systems in the provinces.

**Table 3: Mode of land acquisition by respondents**

| Mode of land acquisition | Frequency | Percentage |
|---|---|---|
| Rented (private) | 5 | 4.0 |
| Private Acquisition | 9 | 7.1 |
| State Land Lease (PLAS) | 22 | 17.5 |
| LRAD (100 % BEE) | 12 | 9.5 |
| LRAD (equity share) | 59 | 46.8 |
| Other | 19 | 15.1 |

**Source:** Survey data, 2020

Approximately half (46.8%) of the respondents acquired or had access to land through the Land Redistribution for Agricultural Development (LRAD) equity share scheme model. This model allowed producers to buy shares in existing commercial farms, on which they were working at the time, and this was dominant in the Western Cape and Eastern Cape provinces. Seventeen and a half (17.5) % of the respondents rented land from the state through the Proactive Land Acquisition Strategy (PLAS) program. The PLAS program is a government-led land rental program through which candidates with potential to run farms on a sustainable basis are given priority to rent state-owned land.

Slightly more than 15 (15.1) % of respondents had permission to occupy land through the Transformation of Certain Rural Areas Act (TRANCRAA), Act 94 of 1998), which has since been repealed, meaning that none of the residents

in these areas held individual title deeds for their land. Almost 10 (9.5) % of the respondents were the sole owners of the land they had acquired through the LRAD 100% Black Economic Empowerment (BEE) model. Through this option, groups of farmers were supported by the commercial farmers for whom they were working to apply for government funds to purchase a new (separate) farm. Only 7.1% of the respondents used their own funds to buy land, while 4% rented land privately. This result shows that respondents, generally, could not afford to buy their own land, which gave them no option but to lease land if the state could not fund them. This could be attributed to the high cost of land in the country.

**Enterprises that produce fruit trees**

Table 4 presents the enterprises of fruit trees produced by respondents in the study areas.

**Table 4: Fruit tree enterprises under production**

| Enterprises | Variables | N | Land size | | Age of the youngest trees (Years or Months) | | Age of the oldest trees (Years or Months) | |
|---|---|---|---|---|---|---|---|---|
| | | | Mean | Standard Deviation | | | | |
| Pome fruit | How much land (ha) is currently under Apple production? | 125 | 17.8 | 32.4 | 3.3 | 4.7 | 15.7 | 20.2 |
| | How much land (ha) is currently under pears production? | 125 | 9.5 | 15.6 | 4.8 | 7.7 | 17.3 | 20.0 |
| Stone fruit | How much land is currently under peaches production? | 125 | 2.5 | 7.0 | 1.5 | 3.6 | 4.2 | 8.2 |
| | How much land (ha) is currently under Plums production? | 125 | 0.9 | 4.2 | 0.4 | 1.7 | 1.9 | 5.4 |
| | How much land (ha) is currently under Apricots production? | 125 | 0.5 | 2.3 | 0.6 | 2.5 | 1.2 | 5.5 |
| | How much land (ha) is currently under Nectarines production? | 125 | 1.4 | 4.6 | 1.0 | 3.1 | 2.5 | 5.7 |
| Table grapes | How much land (ha) is currently under table grapes production? | 125 | 7.3 | 21.3 | 0.7 | 2.7 | 7.9 | 13.0 |

**Source:** Survey data, 2020

A large portion of the land in the study areas is devoted to apples, with 17.8 hectares of land, on average, under apple production. This is followed by the production of pears, which occupied 9.5 hectares of land on average. Table grapes took third place in terms of the number of hectares devoted to fruit production and were a common scenario in the

Western Cape and Northern Cape provinces. Stone fruit had the lowest number of hectares of land devoted to its production; peaches, nectarines, plums and apricots were produced on an average of 2.5; 1.4; 0.97 and 0.48 hectares of land, respectively.

Pome fruit and stone fruit were also observed to be mostly produced in the Western Cape and Eastern Cape provinces, while farmers in the Northern Cape mostly produced table grapes (both fresh and dried). The majority of farms produced various fruit enterprises, e.g. apples in most cases were produced in combination with pears, while other farmers combined apples and pears with stone fruit. In terms of tree ages, pear trees were the oldest (17.3 years), on average, followed by apple trees at 15.7 years, on average. Stone fruit and table grape trees were the youngest. The age of the oldest trees shows that the deciduous fruit industry is aging. However, a tree planting project supported by the industry, where farmers are subsidized with young fruit trees, addresses this challenge. As can be seen in Table 4 above, some respondents had fruit trees as young as less than a year.

**Additional enterprises in smallholder deciduous fruit farms**

**Table 5: Additional enterprises in smallholder deciduous fruit farms**

| Land Use | Frequency | Percentages |
|---|---|---|
| Grains | 4 | 3.2 |
| Cereals | 3 | 2.4 |
| Citrus | 7 | 5.6 |
| Livestock | 20 | 15.9 |
| Poultry | 3 | 2.4 |
| Pastures | 6 | 4.8 |
| Vegetables | 15 | 11.9 |
| Oilseed crops | 2 | 1.6 |
| Other | 66 | 52.4 |

**Source:** Survey data, 2020

Regarding the use of land for additional enterprises, almost half (47.6) of the respondents used a portion of their land for other enterprises. Of these, 15.9% raised livestock, while 11.9% produced vegetables. The common animals raised were sheep, goats, and cattle. The vegetables grown included cabbage, spinach, potatoes, tomatoes, and onions. Citrus was produced as an additional enterprise by only 5.6% of the respondents.

Some respondents (4.8%) grew pasture crops, such as lucerne, barley, and rye, to serve as livestock feed and for other processed by-products, while 3.2% produced grains. Poultry and cereals were produced by each 2.4% of the respondents, while only 1.6% of the respondents produced oilseeds. Farmers who diversified their crop portfolio did so for reasons related to risk and uncertainty regarding yields, prices, quality, *etc*. Crop diversification was also carried out to cater for seasonality of production. The income generated from the sale of crops and livestock is used as cash flow during the year. The rest (52.4%) of the respondents specialised in fruit production.

**Compliance with food safety, ethical trade, and other sustainability standards**

The accreditation status of deciduous fruit farms in terms of compliance with food safety and ethical trading is presented in Table 6 below.

**Table 6: Accreditation status of respondents in relation to food safety, ethical trade, and sustainability**

| Accreditation Status | N | Percentages |
|---|---|---|
| Global GAP | 27 | 21.4 |
| Global GAP, SEDEX, Natures' Choice | 6 | 4.8 |
| Global GAP, BRC, Fair Trade, Nature's Choice | 7 | 5.6 |
| Global GAP, Nature's Choice | 20 | 15.9 |
| Global GAP, Sedex, and SIZA | 7 | 5.6 |
| Global GAP, SIZA | 9 | 7.1 |
| SA GAP | 3 | 2.4 |
| Global GAP, BRC, Farming for Future | 2 | 1.6 |
| Fair Trade | 26 | 20.6 |
| Global GAP, Fair Trade | 6 | 4.8 |
| None | 13 | 10.3 |

**Source:** Survey data, 2020

To ensure access to safe food for consumers, formal food markets require food suppliers to comply with food safety requirements to gain market access. Nearly 90 (89,8) % of the respondents in the study area had food safety systems in place, and of these, a total of 66,8% had Global GAP (previously known as EUREPGAP due to its European origin) as the only food safety certificate, and in combination with other food safety and ethical trade certificates. This result is not surprising, given that Europe is the traditional market for South African deciduous fruit. Almost 16 (15,9) % of the respondents combined Global GAP with Nature's Choice in their food safety systems. The Nature's Choice brand aims to promote health and wellness through healthy natural eating choices.

Slightly more than 7 (7,1) % of the respondents had Global GAP and were also members of SIZA.SIZA was established in 2008 by the fruit industry to monitor and sustain ethical and environmental trade in the agricultural sector. Another 5,6% of the respondents who had Global GAP were also members of SIZA and SEDEX. SEDEX is a member of the ethical trade organizations that work with businesses to improve working conditions in global value chains.

The other 5,6% of respondents had a combination of Global GAP, BRC, Fair Trade and Nature's Choice. The BRC was founded in 1992 with the merger of the British Retailers' Association and the Retail Consortium, and has been adopted not only in the UK, but worldwide. Only 21,4% of the respondents had only a Global GAP certificate, while slightly more than 20 (20.6) % were certified with Fairtrade. For producers to acquire a Fairtrade certificate, they must meet a range of economic, environmental, and social criteria.

Approximately 5 (4.8) per cent of the respondents had Global GAP, SEDEX, and Nature's choice, while only 2.4% were certified with SA GAP. SA GAP is a set of practices that allow one to trace the production of fresh produce, from farm to fork. Almost 2 (1,6) % of the respondents had Global GAP, BRC, and Farming for the Future. Farming for the future is a new method of farming that allows farmers to grow food sustainably and in harmony with nature, which has been pioneered by Woolworths. Of the respondents who were accredited with food safety and quality standards, ethical trading and environmental sustainability also dominated strongly, as some of the measures the respondents adhered to in order to comply with market specifications. Only 10.2% of the respondents did not have

food safety systems in place, which could be attributed to their markets not making it mandatory for their suppliers to adhere to any of these standards when sourcing their produce.

**Access of smallholder deciduous fruit farmers to high-value chains**

Smallholder deciduous fruit farmers used various mechanisms to access high-value chains. More than a third (35.78%) of the respondents reported that they entered strategic partnerships with exporting/marketing companies to access high-value chains, while 33.95% of the respondents had renewable contractual agreements with local packhouses, which have links with marketing and/or exporting firms. These respondents are mostly smallholder producers who are part of equity-share schemes and 100% BEE land reform programs (see Table 7 below).

**Table 7: Mechanisms used by smallholder farmers to access high-value chains**

| How farmers access high-value markets | N | Percentages |
|---|---|---|
| I entered into a strategic partnership with an export/marketing company. | 39 | 35.78 |
| I have a (renewable) contractual agreement with a local pack house. | 37 | 33.95 |
| I have a verbal (seasonal) agreement with my neighbouring commercial farmer / mentor. | 6 | 5.51 |
| I have a contractual agreement with my neighbouring commercial farmer/ mentor | 8 | 7.34 |
| Buyers come to my farm to buy fruit | 3 | 2.75 |
| I am not in any kind of partnership; I do all marketing by myself. | 6 | 5.51 |
| Other | 10 | 9.17 |

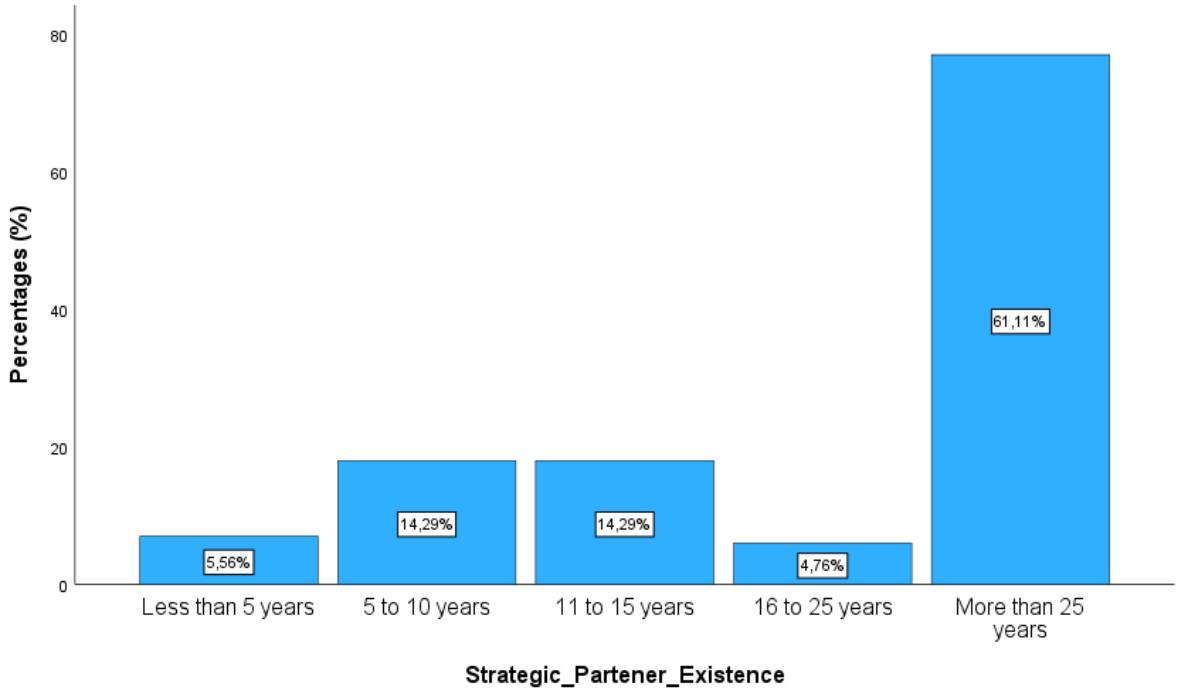
**Source:** Survey data, 2020

Slightly more than 7 (7.34) % of the respondents had verbal agreements with their neighbouring commercial farmers, who also served as mentors. These types of mentors have been accused of exploiting smallholder farmers, hence the request from the state to register in order for them to receive recognition and support associated with mentorship of smallholder farmers. Five and a half (5.51) % of respondents had contractual agreements with neighbouring commercial farmers who also served as mentors, with another 5.51% of respondents indicating that they are not in any form of partnership and that they perform all their fruit marketing by themselves. Performing own marketing was common in family-owned farms, in which previous generations were hawkers, i.e., they bought fruit from neighbouring farmers and sold it to fresh produce markets but later acquired their own farms to complement the supply base. Farmers now use their current markets to sell the fruit they produce, together with that of their neighbours. Approximately 3 (2.75) % of the respondents reported that buyers come to their farms to buy deciduous fruit. These are mainly the farmers who had verbal agreements with their buyers. When the buyer did not arrive during that particular season, informal traders/hawkers looking for fruit would come and buy it. Only 9.17% of the respondents reported having used other mechanisms to access high-value chains. For the purposes of this study, we refer to these supplier-buyer relationships as strategic partnerships.

**Background Information on Strategic Partnerships**

**The existence of strategic partners**

**Figure 1: Results of the existence of strategic partnerships**




**Source:** Survey data, 2020

Respondents were asked about the number of years their strategic partners had been in existence, and 61.11% reported that their strategic partners had existed for more than 25 years (Figure 1 above). It is important to note that most strategic partners, especially those in the export business, are companies that used to be part of the export company that used to export South African deciduous fruit prior to deregulation of markets. Slightly more than 14 (14.29) % of the strategic partners of the respondents had existed for 5 to 10 years, with another 14.29% reporting that theirs had existed for 11 to 15 years. Only five and a half (5.56) % of the respondents reported that their strategic partners had existed for less than five years, with close to five (4.76) % reporting that their strategic partners had been in existence for between 16 and 25 years. These results generally show that the strategic partners with whom smallholder deciduous fruit producers have formed partnerships have been in existence for quite some time and therefore are expected to excel in the export business.

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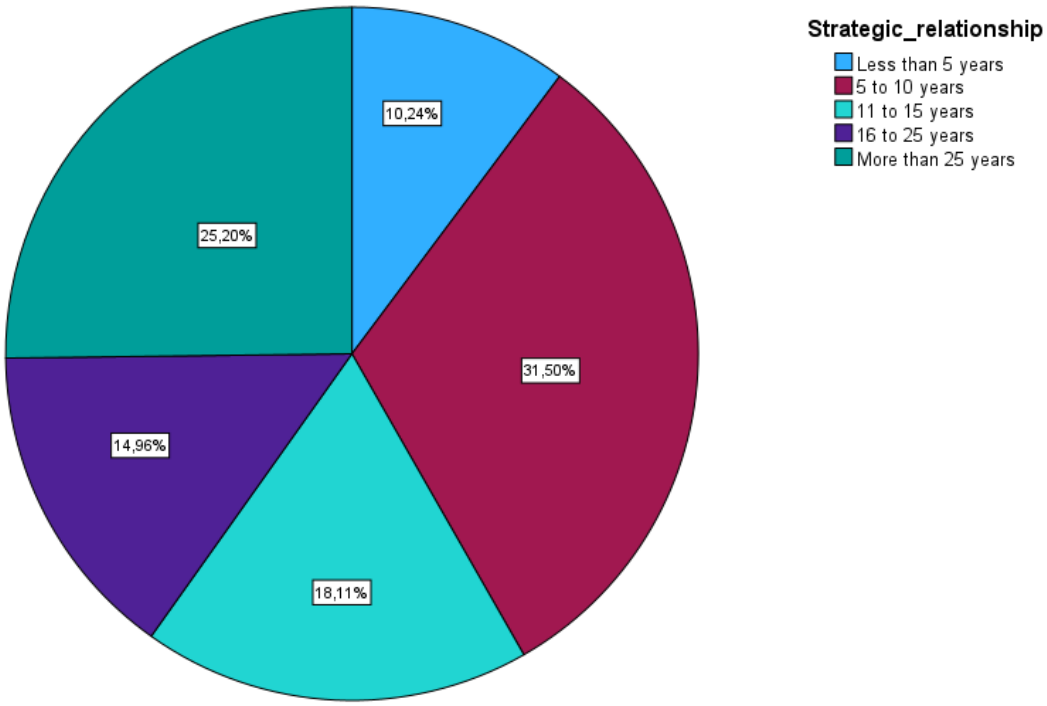
**Strategic relationship with partners**

**Figure 2: Duration of relationship with strategic partners**




**Source**: Survey data, 2020

Thirty-one and a half (31.5) percent of respondents reported having been in a strategic relationship for 5 to 10 years, with 25.20% of respondents reporting a relationship of more than 25 years. It should be noted that the type of relationship that smallholder deciduous fruit producers have with their strategic partners depends on the nature of agreement/contract, i.e., formal versus informal (verbal), and the term of contract, i.e., long versus short term. This is also expected to determine the quality and duration of the relationship, as some of the respondents reported being in their second and third strategic relationships. Slightly more than 18 (18.11), % of the respondents indicated that they had been in a relationship with their strategic partners for 11 to 15 years, while 14.96% of the respondents indicated that they had been in a relationship with their strategic partners for 16 to 25 years. Only 10.25% of the respondents had been in strategic relationships for less than 5 years.

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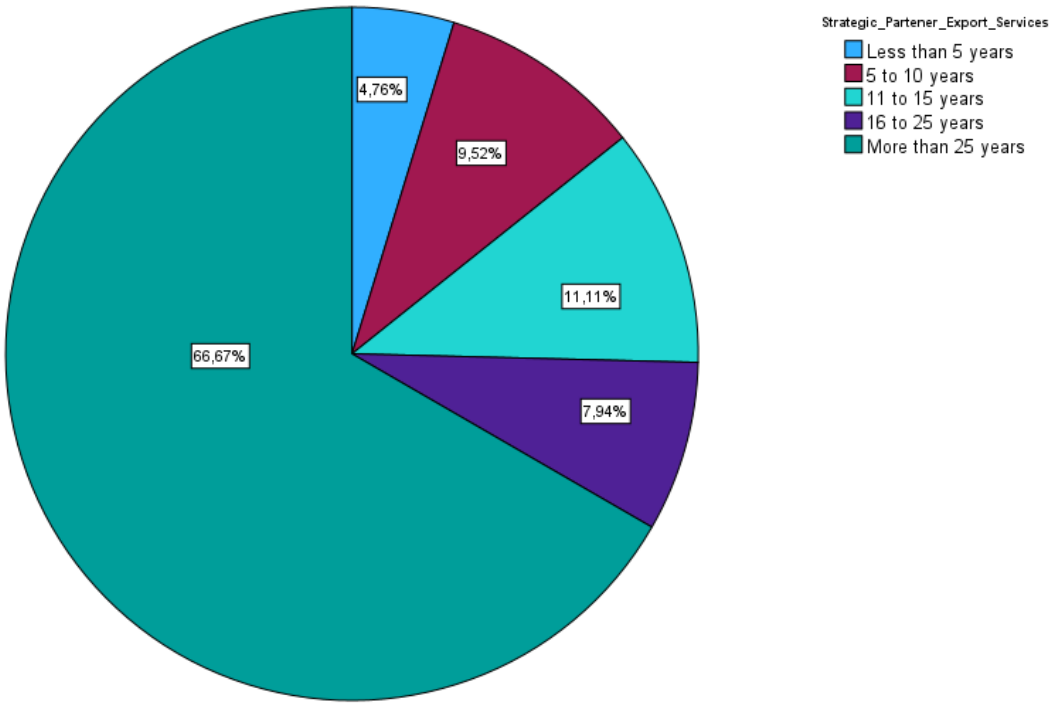
**Experience of strategic partners in export services**

**Figure 3: Results of the experience of strategic partners in export services**




**Source:** Survey data, 2020

Respondents were also asked about the number of years of experience of their strategic partners in the export business, and 66.67% reported that their strategic partners had more than 25 years of experience in the export business (Figure 3 above). Slightly over eleven (11.11) % of respondents reported their strategic partners to have been in the export business for 11 to 16 years, and close to 10 (9.52) % of strategic partners were reported to have between 5 to 10 years of experience in the export business. This is expected, since most export companies have been part of the main company that exported South African fruit before deregulation, although there were also new companies that had started an export business in recent years. Almost 8 (7.94) % of the respondents reported that their strategic partners had between 16 and 25 years of experience in export services. Only 4.76% of the respondents reported that their strategic partners had less than 5 years of experience in the export business.

**Marketing of deciduous fruit in high-value chains**

Before selling, fruit is usually graded into first, second, and third grades, especially by those whose target market is exports. First-grade fruit is often sold to export markets, with second- and third-grade fruit being sold to local supermarkets and processors, respectively. Table 8 below presents the percentage of fruit sold to different markets.

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**Table 8: Market access for smallholder farmers in high-value chains**

| Market | Variables | N | Mean | Standard Deviation |
|---|---|---|---|---|
| Export | Percentage of fruit sold to the export markets | 125 | 57.12 | 36.02 |
| Regional markets (e.g., Africa) | Percentage of fruit sold to regional markets (e.g., Africa) | 125 | 3.95 | 9.92 |
| Local retailers/supermarkets | Percentage of fruit sold to local retailers / supermarkets. | 125 | 14.52 | 20.75 |
| Local pack house | Percentage of fruit sold to the local pack house | 125 | 0.64 | 3.04 |
| Processors/juice makers/canners/pulpers | Percentage of fruit sold to processors/juice makers/canners/pulpers | 125 | 10.86 | 19.87 |
| Fresh produce/municipal markets | Percentage of fruits sold to fresh produce/municipal markets | 125 | 2.08 | 9.67 |
| Hawkers/informal traders | Percentage of fruit sold to wholesalers / informal traders | 125 | 10.79 | 26.63 |
| Donations | Percentage of fruit donated | 125 | 0.32 | 2.09 |

**Source:** Survey data, 2020

Although most of the respondents were in possession of food safety certificates, including compliance with ethical trading, an average of 57.1% of the fruit was sold to export markets, with 3.95% sold to regional markets, including Africa. To be precise, an average of 61.05% of the fruit was exported. It can be deduced from the accreditations of the respondents for food safety and ethical trading that the fruit was exported to Europe (the Netherlands and Germany) and the United Kingdom. Almost 15 (14.5) % of the fruit, on average, was sold to local supermarkets. The growing demand for healthy and nutritious food as a result of the growing middle class in developing countries has led local supermarkets to increase their procurement of fruits from producers.

Processors bought, on average, 10.86% of fruit. This is usually third-grade fruit that could not be marketed in export and local retail markets and is usually used to make juice, puree, pulp and, to some extent, for canning depending on variety. Informal traders sourced, on average, 10.79% of the fruit from the respondents. It was also observed that respondents who supplied informal traders did not have food safety systems in place. Only 2.08% of fruit were sold in fresh produce markets. This results from the fact that most of the respondents used their strategic partners, whose target market is exports, to market their fruit. Less than 1 (0.64) % of the fruit was sold to local pack houses. The reason for this low percentage is that farmers who were members of a cooperative but sold their fruit through local pack houses reported to have sold their fruit through the cooperative, as they saw the cooperative as the channel that enabled them to access markets. Only 0.32% of the fruit was given as donations to community centres. This is understandable, as respondents in the study areas produced fruit for commercial purposes. The strategic partners also organized logistics related to the marketing of deciduous fruits on behalf of the farmers.

**Additional services offered by strategic partners to smallholder farmers**

Table 9 presents the other services rendered to smallholder deciduous fruit producers integrated in high-value chains in addition to marketing and related logistics. These services are further discussed in terms of their potential to sustain agricultural enterprises.

**Table 9: Status of strategic partnership services**

| Other services offered by strategic partners | Frequency | Percentages |
|---|---|---|
| Business Administrative Support | 5 | 3.97 |
| Technical assistance/support | 36 | 28.57 |
| Financing of seasonal production | 3 | 2.38 |
| Market information | 1 | 0.79 |
| Packing | 4 | 3.17 |
| Administrative support / technical assistance for business and funding of seasonal production | 29 | 23.02 |
| Technical assistance/support, market information. | 12 | 9.52 |
| None | 36 | 28.57 |

**Source:** Survey data, 2020

In addition to marketing and related logistics, strategic partners offered other services to small-scale deciduous fruit producers. Nearly 29 (28.57) % of strategic partners offered technical assistance to smallholder producers. This service usually included all technical activities related to the production of deciduous fruits, such as soil and leaf analysis, fertilization, irrigation, spraying, pruning, thinning, and harvesting. Depending on the extent of technical assistance required on a specific farm, strategic partners deployed mentors/technical advisors on a full-time, part-time, or seasonal basis.

Technical expertise in deciduous fruit production is a skill and tacit knowledge that one acquires through training and is very important in improving the quality of deciduous fruit. Quality as an attribute is important in the sense that it adds value to a product that is to be sold to consumers by differentiating it from other products. This makes technical expertise a valuable resource. Because technical expertise is a skill acquired through on-the-job training and therefore takes time to develop, it can be regarded as a rare resource. To facilitate the production of high-quality deciduous fruit, strategic partners hire experienced farm managers to serve as mentors and technical advisors on smallholder deciduous fruit farms. This makes technical expertise an imitable and substitutable resource. Technical expertise in this regard cannot sustain farming enterprises.

Almost 4 (3.97) % of the respondents reported that their strategic partners assisted with business administrative support. The support provided included the establishment and registration of the new entities to accommodate structural changes in their businesses. Provision of business administrative support was reported mainly by smallholder deciduous fruit producers in equity share schemes.

Business administrative support is a skill that one acquires through training and is very important for any entity conducting business. Entities that comply with business regulations can sell their products to different markets. As such, administrative business support can be considered a valuable resource. Because business administrative support is a skill acquired through training and is not readily available on smallholder farms, it can be regarded as a scarce resource. To facilitate the access of smallholder deciduous fruit producers to business administration support, strategic partner administrative clerks also help smallholder deciduous fruit farms with administrative services. This makes business administrative support an imitable and substitutable resource. Administrational business support in this regard cannot support farming enterprises.

Slightly over 2 (2.34) % of strategic partners financed the seasonal productions of smallholder deciduous fruit producers. Some strategic partners also offered financial assistance in the form of loans and advanced payments to smallholder deciduous fruit producers. As much as this service ensures production of good quality fruit, this form of support has received criticism in the value chain literature, with the main argument being that smallholder producers

become locked into these relationships and become dependent on these buyers. This support also has implications for the distribution of benefits to smallholder deciduous fruit producers, as in some strategic partnerships, some producers must first pay up these loans or any investments made by the strategic partner before any dividend payments could be disbursed.

Financial capital is a factor of production and plays an important role in facilitating the integration of smallholder deciduous fruit producers into high-value chains. For example, the production of deciduous fruit requires financial capital to buy fertilizers, chemicals, herbicides, and technology to improve productivity. As such, financial capital can be regarded a valuable resource. Since not all smallholder deciduous fruit producers have access to financial capital or have it readily available to them without terms and conditions, financial capital can be classified as a rare resource. The provision of credit by strategic partners to facilitate access of smallholder deciduous fruit producers to financial capital with the use of the harvest as collateral makes financial capital an imitable and substitutable resource. As a result, financial capital cannot sustain agricultural enterprises.

Twenty-three (23.02) % of the respondents reported that their strategic partners offered a combination of technical advice, business administrative support, and financing of seasonal production, in addition to marketing and related logistics. Only 0.79% of the respondents reported that their strategic partners also shared market information with them, while 9.52% offered technical support in combination with market information. Slightly more than 3 (3.17) % of the respondents indicated that their strategic partner offered packing services. It is important to note that these services are offered in addition to marketing and related logistics.

Market information plays a vital role in ensuring that the production of deciduous fruit meets consumer demand in global value chains. Through the collection and collation of market information, producers can add value to meet consumer tastes and preferences in targeted market segments. The ability of market information to add value to products makes it a valuable resource. Because market information is not readily available to smallholder deciduous fruit producers, it is considered a rare resource. Compiling market information involves market intelligence, which cannot be imitated or substituted. The competitive advantage thus lies in the process of compiling market information, which includes conducting market research and collating and processing of the information, rather than in the market information as an output. Readily available market information, on its own, therefore, cannot serve as a source of sustainable competitive advantage.

**Correlation of the high-value chain environment of smallholders**

**Table 10: Correlation matrix for a high-value chain environment of small farmers**

| Variables | M (SD) | (1) | (2) | (3) |
|---|---|---|---|---|
| Market access (1) | 12.77 (3.78) | 1 | | |
| Strategic Partnership (2) | 4.15 (1.20) | -3.369** | 1 | |
| Market performance (3) | 2.98 (0.81) | 0.158 | -0.240** | 1 |

**Source**: Survey, 2020

** $p < 0.01$

The researcher performed a correlation analysis between market access, strategic partnerships, and market performance. Although a positive correlation between market access and strategic partnerships was expected due to the important role strategic partners play in enhancing the market access of smallholder deciduous fruit producers in high-value chains, the opposite was found. The correlation between market access and strategic partners is negative, which means that increased participation of strategic partners results in decreased market access.

This could be attributed to the fact that only 57.1% of the fruit, on average, was exported (first grade); the rest (second and third grade) was sold to local markets, some of which were accessible to smallholder deciduous fruit producers who conducted their own marketing. The study also found a negative correlation between market performance and strategic partnerships. Correlation between market access and strategic was not expected, given the role strategic partners play in the coordination and facilitation of market access for smallholder producers in high-value chains, and this aspect is investigated further in the following sections.

**Effects of Strategic Partnership Factors on the Resources and Sustainability of Smallholder Deciduous Fruit Farming Enterprises in High-Value Chains**

The results of the effects of strategic partnership factors on the resources and sustainability of small-scale deciduous fruit growing enterprises in high-value chains are presented in Table 11.

**Table 11: The effects of strategic partnership factors on the resources and sustainability of smallholder farming enterprises in high-value chains**

| | | | 95% confidence interval | | | | |
|---|---|---|---|---|---|---|---|
| **Predictor** | **Estimate** | **SE** | **Lower** | **Upper** | **T** | **p** | **Std Estimate** |
| Intercept | 37.307 | 4.071 | 29.245 | 45.369 | 9.163 | < .001 | |
| **Model 1** | | | | | | | |
| Investment | -0.347 | 0.054 | -0.453 | -0.241 | -6.489 | < .001 | -0.487 |
| **Model 2** | | | | | | | |
| Commitment | -0.072 | 0.788 | -1.632 | 1.488 | -0.091 | 0.927 | -0.007 |
| **Model 3** | | | | | | | |
| Quality | -0.322 | 0.099 | -0.517 | -0.126 | -3.259 | 0.001 | -0.011 |
| Quality ✻ Contract | -0.012 | 0.021 | -0.053 | 0.030 | -0.556 | 0.579 | -0.064 |
| Investment Quality | 0.007 | 0.004 | -0.002 | 0.014 | 1.53 | 0.129 | 0.265 |
| Investment Quality ✻ Contract | -1.934 | 9.04-4 | -0.002 | 0.002 | -0.213 | 0.831 | 0.175 |

**Source: Survey data, 2020**

To facilitate the production of high-quality fruit that meets the requirements of high-value chains in smallholder deciduous fruit farming enterprises, strategic partners invested resources specific to the production of deciduous fruit. From Table 11 above (Model 1), the specific investments of the strategic partners in smallholder farms present a negative but significant effect on the resources and sustainability of smallholder deciduous fruit farming enterprises, $\beta = -0.48693$, $t(123) = -6.4893$, $SE = 0.05349$, $p < 0.001$. This result shows that strategic partners invest resources in smallholder farming enterprises to primarily complement their own supply contracts and maintain their competitiveness in high-value chains. Through these specific investments, small farmers can produce good quality fruit, which enables them to get access to the market. Supporting smallholder deciduous fruit farming enterprises was never part of the initiative.

Before investing in smallholder deciduous fruit farms, strategic partners require that smallholder producers commit to sell (all) their produce to them. In Model 2, the commitment of smallholder deciduous fruit producers to strategic partnerships also had a negative but insignificant effect on the resources and sustainability of smallholder deciduous fruit farming enterprises, F (3,122) = 12.27, p = 0.927.27. This shows that the commitment required from smallholder farmers is just a way of strategic partners to safeguard their investment against opportunistic behaviour, e.g., input diversion and side selling by smallholder deciduous fruit farmers.

As business partners, it is crucial for smallholder deciduous fruit farmers and strategic partners to have a good working relationship to achieve business goals. Model 3 included the quality of the relationship between smallholder deciduous fruit farmers and strategic partners. Although good relations between smallholder farmers and strategic partners were maintained, these had a significant but negative effect on the resources and sustainability of smallholder deciduous fruit farming enterprises, β = -0.01075, t (119) = -3.2586, SE = 0.09874, p = 0.001.

Through the maintenance of good relations between the two parties, smallholder farmers were able to get access to markets for their deciduous fruit, while strategic partners were able to get additional fruit to complement their supply base and sustain their competitiveness in high-value chains.

As part of their commitment to the partnership, smallholder farmers entered into agreements (contracts) with their strategic partners.Depending on the willingness of strategic partners to invest, the terms of agreements varied from short to long-term and ranged from formal (written) contracts to informal (verbal) agreements.contract was added in Model 3 after adding the quality of relationship, the effect on the resources and sustainability of smallholder farming enterprises became insignificant. In terms of the reasoning given on the effect presented by commitment on the resources and sustainability of smallholder farming enterprises, contracts were also a way for strategic partners to safeguard their investment against opportunism. The addition of investment to quality of relationship and the addition of investment and contract to quality of relationship also resulted in an insignificant effect.

Table 12 below presents the overall results of the model for the effects of strategic partnership factors on the resources and sustainability of smallholder deciduous fruit farming enterprises.

**Table 12: Model fit measures**

| | | | | | | | Overall Model Test | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Model** | **R** | **R²** | **Adjusted R²** | **AIC** | **BIC** | **RMSE** | **F** | **df1** | **df2** | **P** |
| 1 | 0.415 | 0.172 | 0.158 | 1105 | 1116 | 18.8 | 12.76 | 2 | 123 | < .001 |
| 2 | 0.481 | 0.232 | 0.213 | 1097 | 1111 | 18.1 | 12.27 | 3 | 122 | < .001 |
| 3 | 0.520 | 0.270 | 0.233 | 1097 | 1119 | 17.6 | 7.34 | 6 | 119 | < .001 |

**Source:** Survey data, 2020

Model 1 accounted for approximately 16% (Adjusted R2) of the variance, Model 2 accounted for approximately 21% (Adjusted R2) of the variance, with Model 3 explaining approximately 23% (Adjusted R2) of the variance. All three models were significant ($p < 0.001$).

In general, the results showed that the first model is significant, F (2,123) = 12.76, $p < 0.001$, Adjusted R2 = 0. 158. Investment by strategic partners was significantly associated with the resources and sustainability of smallholder deciduous fruit farming enterprises. The second model is significant, F (3,122) = 12.27, $p < 0.001$, Adjusted $R^2$=0.213. The commitment of the farmers to strategic partnerships is significantly associated with the resources and sustainability of smallholder deciduous fruit farming enterprises. Model 3 is significant F, (6,119) = 7.34, $p < 0.001$, Adjusted $R^2$=0.233. The quality of relationships between smallholder deciduous fruit farmers and strategic partners

and its interaction with contract and investment is significantly associated with the resources and sustainability of smallholder deciduous fruit farming enterprises.

**Table 13: Comparison of the models**

| Model | | Model | $\Delta R^2$ | F | df1 | df2 | p |
|---|---|---|---|---|---|---|---|
| 1 | - | 2 | 0.0599 | 9.52 | 1 | 122 | 0.003 |
| 2 | - | 3 | 0.0382 | 2.08 | 3 | 119 | 0.107 |

**Source:** Survey data, 2020

From Table 13 above, the second model (Model 2), which included commitment, shows a significant improvement over the change of the first model (Model 1), F (1,122=9.52, $p < 0.005$, change in R2 = 0. 0599. In general, when investment was added to the model, the variable represented 17% of the variance, while the second model, including commitment, represented 23% of the variance. The improvement in the change in R2 between Model 2 and Model 3 was not significant, $p = 0.107$.

The comparison of the models for the effects of strategic partnership factors on the resources and sustainability of smallholder deciduous fruit farming enterprises indicated that the second model (Model 2), which included commitment, showed significant improvement (change in R2) from the first model change (Model 1), which included specific investments by strategic partners. However, the improvement between Model 2 and Model 3 (which included the quality of the relationship) was not significant. Thus, specific investments by strategic partners and the commitment of smallholder deciduous fruit producers to strategic partnerships significantly explain the negative effect presented by strategic partnerships on the development of resources by smallholder deciduous fruit producers and the sustainability of their fruit farming enterprises. These findings support the findings of Humphrey and Schmitz (2002); Giuliani (2005); Bolo (2010); and Liu (2020) that strategic partners lock in smallholder producers in production functions, generating low returns, and lock them out of value addition functions that have potential to sustain their income growth in high-value chains.

**Conclusions and recommendations**

The resources invested by strategic partners in smallholder deciduous fruit farming enterprises only facilitated the production of good quality fruit for high-value chains and had no potential to sustain smallholder farming enterprises. These investments ensured the production of additional fruit to complement the supply base of the strategic partner. To safeguard their investment against opportunistic behaviour by smallholder farmers, strategic partners entered into agreements with smallholder farmers in which smallholder farmers committed to sell (all) of their produce to them. This strategy increased productivity in commercial farms and / or exporting firms and maintained their competitive advantage in high-value chains. Therefore, the initiation of strategic partnerships was a strategic response by commercial farmers and/or exporting firms to increase their productivity and sustain their competitive advantage in high-value chains, rather than a learning platform and vehicle for smallholder farmers to develop marketing capabilities and sustain income and farming enterprises in high-value chains.

If smallholder producers wish to grow as entrepreneurs, so that they can sustain their deciduous fruit farming enterprises, they should consider marketing arrangements outside of strategic partnerships, as these do not contribute to the development of resources that are necessary to sustain income growth in high-value chains.

**Implications for Smallholder Deciduous Fruit Farmers**

Integration in high-value chains through strategic partnerships cannot sustain smallholder agricultural enterprises, as farmers cannot learn and develop the marketing capabilities necessary to sustain their farming enterprises. This has implications for the sustainability of smallholder deciduous fruit farmers' livelihoods.

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