
ACCESS TO RESOURCES FOR PRODUCT DIVERSIFICATION AND PERFORMANCE OF INFORMAL DAIRY ENTERPRISES IN KENYA**Ann N. Kariuki & Mike A. Iravo**

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Abstract

Resources and capabilities are key drivers to good performance of African business firms. However, limited evidence exists on the extent to which access to resources for use in product diversification affects performance of informal business enterprises in Africa. The empirical results indicated that access to resources in the form of excess raw materials (milk), finances and skills on value addition to milk was positively associated with performance of informal dairy enterprises. The results also suggest that value addition had led to increased sales, made the businesses generate more profits, had made them more competitive and had resulted in accumulation of more wealth. However, sales of milk were more compared to those of value added dairy products. Profits generated per week were more in selling milk compared to those of value added dairy products. Based on the findings, the paper discusses the strategy, policy as well as the research implications for the informal dairy sector in Kenya.

Key Words: Dairy, Informal, Performance, Product Diversification, Resource Access

1. INTRODUCTION

Dairy production in Kenya is smallholder dominated with raw milk sales accounting for the bulk of the milk traded and creates more employment per 100 litres traded than other pathways through which milk is sold in the country (Muriuki, 2003). Milk based enterprises in the informal sector contribute to employment creation with 600,000 to 800,000 small scale farmers being self employed and 365,000 jobs having been created along the marketing chain (Kiptarus, 2005). The sector also supports over 1.8 million smallholder households engaged in dairy production (Republic of Kenya, 2010). The government has legalized the informal sector in recognition of the role it plays in employment creation, improvement of food security, alleviation of poverty and the increased contribution it makes to the Gross Domestic Product (GDP) of the country. The informal sector enterprises range from smallholder dairy farmers, milk bars, mini-dairies to cottages paying an annual license fee of between \$10 and \$50 (Export Processing Zone, 2005). Despite the major contribution it makes to the economy, there has been slow uptake of product diversification into value added dairy products by the informal sector with high costs involved and lack of access to resources being cited as some of the limiting factors (Pedersen and McCormick, 2000; Republic of Kenya, 2011).

Past studies have revealed that resources and capabilities in the form of raw materials, finances and human resource skills are key drivers to good performance of African business firms (McMichael, 2013; Perez-Aleman, 2012; Tvedten *et al.*, 2014). This alludes to how critical it is for small scale milk vendors in the informal dairy sector to have access to these resources for them to be able to diversify their product range. This will enable them grow their businesses which has a crucial impact on the performance of their enterprises. Most informal businesses are constrained in terms of these resources as they struggle to use the meager available resources to start their businesses, carry out their day to day activities, grow their businesses while at the same time use the same resources to meet their basic survival needs (Bolo *et al.*, 2011). Research indicates that most businesses in Africa operate on small scale under resource constraints and while not undertaking radical innovations, these businesses still venture into risky initiatives (Pedersen and McCormick, 2000; Tvedten *et al.*, 2014). Product diversification is one of the risks that these small scale businesses undertake as they struggle to grow and survive in an increasingly competitive market.

Suggestions have been made on the need to gain a better understanding of the internal resources and capabilities that enable performance in African business enterprises often characterized by high informality status (Tvedten *et al.*, 2014). This paper is a response to this call. It is based on an empirical investigation of informal dairy enterprises in Kiambu County, Kenya. It seeks to contribute to existing literature by investigating the extent to which informal dairy enterprises access resources and possess capabilities for engaging in product diversification and their effect on performance. It also seeks to provide policy recommendations on strategies that can be adopted to enhance access to resources by small scale milk vendors (SSMVs) to diversify their product range which will result in higher growth and improved performance of their enterprises. The paper is structured as follows; first is a review of the theoretical framework on the resource based view in relation to product diversification. Second is a review of literature on the various resources and capabilities required for product diversification and their influence on performance of business enterprises. Third is the methodology employed in the study. Finally, based on the review of literature, the paper gives recommendations for future research.

2. LITERATURE REVIEW

Past studies indicate that availability of resources leads to an expansion in diversification (Hashai and Delios, 2011; Pearson II and Robinson, 2011). There is a strand of knowledge that says that the resource situation of the organization is a key factor in choosing a diversification strategy particularly underutilized resources, which is likely with related developments (Chatterjee and Wernerfelt, 1991). This is supported by Grant (1998) who argued that some of the most important sources of value creation within a diversified firm are the ability to apply common general management capabilities, strategic management systems and resource allocation processes to different businesses. A similar argument was advanced by Pearson II and Robinson (2011) who asserted that opportunities to build value via diversification strategies are usually found in market-related, operating-related and management activities with the opportunities centering on cost reduction, improving margins or providing access to new revenue sources. A different perspective argues that excess financial resources may be used to venture into unrelated developments, if other resources and competencies are difficult to develop or grow quickly (Chatterjee and Wernerfelt, 1991). The central argument underlying these propositions is that if an organization has excess resources which are underutilized, it is likely to venture into related diversification whereas if the organization has excess financial resources, it is likely to venture into unrelated diversification. This could explain the limited diversification into value added dairy products due to the fact that the dairy sector particularly the informal sector, experiences inadequate resources (Republic of Kenya, 2008; Bolo *et al.*, 2011).

The Resource Based View (RBV) of the firm has been used to explain the product diversification and performance relationship by various researchers (Benito-Osorio *et al.*, 2012; Grant, 1991; Sukpinach and Rugman, 2007). The RBV theory states that for a firm to enjoy sustained competitive advantage (SCA), it must acquire and control valuable, rare, inimitable and non-substitutable (VRIN) resources and capabilities, plus have the organization (O) in place that can absorb and apply them (Barney, 1991). Resources are inputs into the production process and can be categorized into six types: financial resources, physical resources, human resources, technological resources, reputational and organizational resources (Grant, 1991). There are different perspectives on the RBV in relation to resources and capabilities and the performance outcome of firms that undertake product diversification. One perspective is that capabilities include what a firm can do as a result of teams of resources working together and can be used as the basis of broadening a firm's product range which leads to superior performance with related diversification (Grant, 1991). This is supported by Yuan *et al.* (2004) who argued that based on the RBV, firms diversify not only because of the efficiency gained from the economies of scope and synergy but because of exploiting their distinctive capabilities that enable them maximize the utilization of resources such as inputs, knowledge and markets. These arguments point to the importance of having access to resources and capabilities when pursuing related product diversification strategy which leads to superior performance of businesses.

A different perspective on the RBV theory indicates that there exists a non-linear relationship between the degree and range of product diversification and performance of firms (Liu and Hsu, 2011; Sukpinach and Rugman, 2007). Specifically, Sukpinach and Rugman (2007) indicate that product diversity can lead to better performance when the strategic resources and capabilities are increasing but may lower performance as the product scope exceeds the range of rent-yielding resources as the costs exceeds the benefits generated. This is supported by Benito-Osorio *et al.* (2012) who argued that that the specific type of diversification strategy that a firm adopts and its performance are conditional on its pool

of resources and capabilities by primarily diversifying into related businesses. The central argument in these propositions is that in the RBV, related diversification leads to better performance based on the ability to share resources and capabilities among business units. On the other hand, if a firm pursues unrelated product diversification, gains are usually offset by the high costs of managing an increasingly diverse portfolio. Based on the arguments presented, it is hypothesized that:

Hypothesis: Access to resources for pursuing related product diversification strategy positively influences performance of informal dairy enterprises.

2.1. Access to Finances for Value Addition in the Informal Sector

Past studies indicate that small scale milk vendors (SSMVs) often cite lack of access to credit as limiting their ability to purchase equipment that is necessary to carry out their trade and pay for licenses (Asareca, 2009; Karanja, 2003; Kiptarus, 2005). The enterprises require the financial resources to grow and expand their businesses by venturing into product diversification activities as well as capital investment in necessary equipment. Increasing evidence suggests that small scale enterprises in the informal sector hardly have access to finances from mainstream formal financial institutions (Pedersen and McCormick, 2000). They therefore resort to alternative sources of capital such as friends and relatives to finance their businesses. Often, the same relatives as well as the business overheads will draw finances from the business in the course of time making it difficult to accumulate any substantial savings that can be used for product diversification activities (McMichael, 2013; Pedersen and McCormick, 2000). As a result, most of them limit their sales to raw milk with a few engaging in limited product diversification to value added milk products that can fetch better prices in the market.

Evidence contained in literature suggests that access to credit from financial institutions is characterized by bottlenecks in terms of bureaucratic conditions and formalities which range from having a Personal Identification Number (PIN), an account with the bank, having an acceptable cash flow in the account, being a member of a cooperative society, delivering milk to big processors, having a business proposal endorsed by the ministry, in addition to the high costs charged for interest rates (Muia *et al.*, 2011; Muriuki, 2011; Republic of Kenya, 2010). All these conditions are beyond the capability of the dairy enterprises in the informal market to comply with presenting a challenge in accessing finances for use in diversifying their product range. Most creditors prefer to lend to well resourced farmers who can afford to provide the collateral asked as a pre-condition for financing (McMichael, 2013). The lack of collateral and limited number of financial institutions in the rural areas makes it very difficult for the SSMVs to access credit from formal financial institutions (Muia *et al.*, 2011). This suggests that the informal sector has largely been alienated from the mainstream formal financial service sector based on the conditions placed on it.

There are many opportunities to be exploited by SSMVs in the growing dairy sector in Kenya. However, to tap into these opportunities, they need to have access to inputs, which they can use to add value to milk and also have good market linkages for their dairy products (Muia *et al.*, 2011; Wambugu, 2011). Gelb *et al.*, (2009) argue that different business environments have different costs and benefits of formality or informality and in turn may give rise to different probabilities of access to services such as finance. The formal dairy sector has a great advantage over the informal sector as most dairy cooperatives offer credit facilities to their members against the milk they deliver (Pelrine, 2009; Wambugu, 2011). The government of Kenya and other sector players have a vital role to play in creating a conducive environment that can enable the informal sector participants access credit at a low cost from alternative

sources (Kurwijila and Bennet, 2011). Through such support and with milk and value added dairy products forming a major portion of the Kenyan diet (Pelrine, 2009), farmers and SSMVs can be in a position to invest in product diversification and access other market opportunities available (Kurwijila and Bennet, 2011). The informal sector has been documented as using innovative sources of funding such as welfare and table banking as an alternative source of finance to diversify and run their businesses (Baiya and Kithinji, 2010). This is an informal source of financing based on contributions from a group of people which are then given to members based on a rotational basis. This is supported by Pedersen and McCormick (2000) who argue that informal enterprises in Africa often utilize financial, human resources and production inputs that are not useful to the formal sector.

2.2 Skills and Training on Value Addition

New knowledge and information is essential in imparting the skills needed by small scale businesses to run and diversify (Perez-Aleman, 2012). Small scale enterprises in Africa have been documented as being able to develop coping strategies in the absence of formal structures to support them by exchanging credit and information among themselves to facilitate their growth and performance (Tvedtenet *al.*, 2014). It has been argued that the highly educated Africans in the business world are becoming an important driver to future African growth (Tvedtenet *al.*, 2014). This includes small scale enterprises. The preceding arguments point to skills and information as being key resources in pursuing a diversification strategy in the informal and small scale enterprise sector in Africa. With the significant contribution that the informal dairy sector makes to the country, training the participants on standards required for dairy products is therefore paramount (Kurwijila and Bennet, 2011).

Prior to the legalization of the informal dairy sector in Kenya, SSMVs could not acquire training in dairy product handling yet continued with their trade amidst harassment by regulatory authorities (Hooton and Omoro, 2007). The legalization of the informal sector has seen organizations such as the Dairy Traders Association (DTA) organize training opportunities for the SSMVs on how to process various value added dairy products such as *mala* (fermented milk) and yoghurt as well as milk handling techniques (Baiya and Kithinji, 2010; Muriukiet *al.*, 2010). The DTA also ensures inclusiveness in its training programmes with 30% of participants being women and drawn from milk bar operators to mobile milk traders and milk transporters with the information being shared with farmers (Muriukiet *al.*, 2010).

The dairy policy that legalized the informal sector outlines measures on the training of SSMVs on safe milk handling, processing techniques as well as the development of low cost appropriate technologies in the informal sector (Hooton and Omoro, 2007; Leksmonoet *al.*, 2006). A civil society organization called Strengthening Informal Sector Training and Enterprise (SITE) which manages a Department for International Development (DFID) funded project to transform small and medium enterprises in the informal market has been instrumental in the training of the SSMVs on dairy product handling (Leksmonoet *al.*, 2006). The authority tasked with regulation of the dairy sector, Kenya Dairy Board (KDB) in partnership with other stakeholders has also played a crucial role in the training of informal sector participants especially on quality concerns on the handling of dairy products (Baiya and Kithinji, 2010; Kurwijila and Bennet, 2011). The KDB strategic plan 2005-2009 outlined a strategy on developing a training curricula and materials on different categories of SSMVs (Leksmonoet *al.*, 2006). This is supported by Muriuki (2003) who advocated for the use of targeted training manuals as a cheaper method to use and for relevance purposes in all the informal milk market pathways from producers,

mobile transporters to milk bars. All these efforts point to the increased recognition that skills on milk handling and value addition to dairy products are vital to the improved performance of the SSMVs.

An evaluation report on the results of capacity building efforts to impart skills and knowledge on a variety of topics directed at the SSMVs who are said to have great potential in growth prospects, indicated that there have been significant gains realized after that training (Republic of Kenya, 2011). The training directed at equipping the SSMVs with value addition skills into higher value added products suggested that more of them were engaging in value addition activities. For instance, the percentage of farmers carrying out value addition had increased from 7.3% to 30.6%, percentage of farmers processing mala (fermented milk) had increased from 2.8% to 8.8% while the percentage of farmers processing yoghurt had increased from 0.5 to 8.8% (Republic of Kenya, 2011). The figures undoubtedly show that there have been significant strides made by SSMVs to engage in value addition activities after being equipped with the requisite skills.

2.3 Surplus Milk as a Raw Material for Value Addition

Evidence contained in literature suggests that milk losses especially due to spoilage are common in Kenya (Muiaet *al.*, 2011; Muriuki, 2003; TechnoServe, 2008). Muriuki (2003 p.44) points out that milk losses can also be attributed to “forced consumption” of evening milk which could instead be converted into income if the milk were marketed. The losses are further compounded by the surplus milk produced during the rainy season in Kenya which cannot be absorbed by the domestic market (Wambugu, 2011). Estimates point out that 40% of raw milk produced is lost due to lack of proper cooling and bulking facilities (StichtingNederlandseVrijwilligers, 2013). Small scale dairying especially through the informal sector has been suggested as having the potential to reduce the milk losses and generate employment in processing of the milk to value added dairy products and also in marketing (Republic of Kenya, 2011). The preceding arguments suggest that the excess milk produced during the rainy season in the country as well as the milk lost from spoilage and forced consumption can instead be converted into value added products.

Value addition to raw milk provides profitable entrepreneurial opportunities to the SSMVs (Kipatarus, 2005; Republic of Kenya, 2011). The government of Kenya in its dairy master plan has recognized the importance of value addition to milk as a pathway to wealth creation (Republic of Kenya, 2010). However, despite the potential gains to be made in adding value to raw milk, the efforts made as well as the resources invested to train them, uptake of value addition technologies by SSMVs is still low (Muriuki, 2011; Republic of Kenya, 2011). This is supported by statistics indicating that milk accounts for the largest contribution to total dairy products sold with a percentage of 84% in the informal dairy sector (Techno Serve, 2008). The underlying argument in these propositions is that value addition to milk has the potential to generate more income to the SSMVs, create employment, improve food security, and reduce poverty while at the same time result in increased economic growth to the country.

3. METHODOLOGY

The study was conducted in Kiambu County in Kenya and has 12 sub-counties namely: Gatundu South, Gatundu North, Ruiru, Thika, Githunguri, Kiambu, Limuru, Kikuyu, Lari, Juja, Kiambaa and Kabete. The county has an estimated 337,000 dairy farmers (County Government of Kiambu, 2013). Due to the fact that small scale vendors are not easily tracked and statistics in the informal dairy sector are not available, to obtain data one has to rely on the use of recall information (Kaitibieet *al.*, 2010). Based on

these facts, the information obtained from respondents on performance was based mainly on recall. Kiambu County is dominated by milk bars who sell raw milk and other dairy products (Kaitibie *et al.*, 2010). The milk bars were mainly targeted in this study as they have a business premises and therefore have the potential to undertake value addition to milk. Each sub-county was treated as a cluster and then quota sampling was used to identify 32 respondents from each cluster. Quota sampling is used where the sample frame does not indicate strata or cluster membership of the sampling units in which case a given number of respondents from each stratum is decided by dividing the total sample size by the minimum number of clusters to obtain the number to be within each cluster (Alreck and Settle, 2004). Quota sampling was used to ensure that the sample proportionately represents the various dairy enterprises in all the sub-counties. The total sample size was 384 respondents. As a pre-condition, to be included in the sample, the dairy enterprise must have been operating in the informal dairy sector during the study period.

3.1 Data Collection Procedure and Analysis

A semi-structured questionnaire was used as the data collection instrument which contained closed-ended as well as open-ended questions. The questionnaire was divided into three parts, namely; dairy entrepreneur's background designed to capture basic information about the target entrepreneur, access to inputs, intended to capture information relating to the access to resources required for product diversification and dairy enterprise performance, intended to collect data on variables to be used as measures of performance. The questionnaire was administered to respondents through personal interviews as well as drop and pick method. Because likert scales were used, cronbach's alpha test of reliability was used to measure the internal consistency of items in the questionnaire; when a measure is internally consistent, all of the individual questions or items making up that measure should correlate well with the others (Cramer and Howitt, 2004). According to Mugenda and Mugenda (1999), cronbach's alpha is a general form of the Kuder-Richardson (K-R) 20 formula and is based on the split-half reliabilities of data from all possible halves of the instrument, its use reduces the time required to compute a reliability coefficient in other methods and results in a more conservative estimate of reliability which helps to avoid erroneous conclusions. A high coefficient implies that there is high consistency among the items in measuring the concept of interest. According to Field *et al.*, (2012), a value of 0.7 is an acceptable value for cronbach's alpha while values substantially lower indicate an unreliable scale. Validity of the instrument was tested using content and substantive validity. Content validity considers the extent to which the contents of a test are relevant to and representative of the construct definition while substantive validity considers the extent to which responses of a test are consistent with the construct definition (Salkind, 2010). The questionnaire was pre-tested with 33 respondents to ensure that quality data was collected. The selection of the sample dairy enterprises to be pre-tested depended on the proximity and willingness of the respondents to participate in the exercise. The questionnaire was discussed with the respondents to identify any shortcomings in the instrument. Information arising out of the pre-testing exercise was used to make the necessary adjustments before undertaking the main data collection exercise.

To measure access to resources, structured questions were used to find out the sources of business finance as well as access to other resources used by the dairy entrepreneurs to diversify their product range while a five point likert scale ranging from "strongly disagree" to "strongly agree" was used to assess the perceptions of the dairy entrepreneurs toward access to resources such as credit financing as well other resources used in diversification. Semi-structured questions were also used. To measure dairy enterprise performance, which is the dependent variable, a five point likert scale ranging from "strongly

disagree” to “strongly agree” was used to determine dairy entrepreneur’s perceptions on the performance of their products over the last three years in terms of profits and sales. Analysis of data collected was done using descriptive statistics including mean and standard deviation. Hypothesis testing was done using Pearson’s correlation coefficient to determine the relationship between the independent variable and the dependent variable and is used in bivariate relationships (Levin *et al.*, 2010). Pearson’s correlation coefficient was suitable because likert scales were used in this study. According to Levin *et al.*, (2010) likert scales are interval scales and where interval scales are used in a study, Pearson’s correlation coefficient is the most appropriate tool for data analysis. Data is presented using tables.

4. PRESENTATION AND DISCUSSION OF FINDINGS

A response of 250 filled questionnaires was generated representing a response rate of 65%. With regard to gender, 56.8% (n= 142) respondents were female while 43.2% (n = 108) were male indicating that more women compared to men are engaged in the informal dairy sector. On the highest level of education acquired by the respondents, 11.6% have a degree, 39.6% have a diploma, 46.8% have secondary education and only 2% have only primary education as the highest level of education acquired. This indicates that the sector is attracting a high number of well educated people with over 51% having acquired tertiary education. This could be attributed to the fact that majority of the people graduating from universities and colleges have difficulties getting formal employment.

The sources of funding for use in product diversification for the respondents were varied. As part of the financing used for product diversification into value added dairy products, 61.6% used sales proceeds from other products sold, 60% of the respondents used owner savings, 22.9% used contributions from family members and friends, 18.8% used a loan from a bank while only 6.9% used financing from a cooperative society. This indicates that the most commonly used source of finance by the respondents was sales proceeds from other products sold followed by owner savings while the least used source was loans from banks and cooperatives. As noted by Pedersen and McCormick (2000), this may point to the fact that formal financial institutions such as banks and cooperative societies shy away from financing informal sector businesses. Multiple sources of financing were used though some respondents preferred to use one source of funding only. For instance, 27.8% of the respondents used sales proceeds from other products sold as the only source of financing the business, 10.9% used owner savings entirely to finance the business while 1.8% used contributions from family members and friends to entirely finance the business. None of the respondents used a cooperative society or a loan from a bank to entirely finance the business. This may indicate the risk averseness of the respondents to loans as a source of financing their businesses or limited amounts of money that can be accessed through these sources which may not be sufficient.

The descriptive statistics on the extent to which the dairy entrepreneurs had access to various resources for use in product diversification to value added dairy products sold, show that 74.8% of the respondents indicated that they got a lot of milk that can be used for value addition, 61.6% indicated that they possessed the skills required to add value to milk, 78.8% indicated that extension officers did not provide the training required for value addition to milk, 60% indicated that they knew where they could obtain training on value addition to milk while 74.3% disagreed that it costs a lot of money to obtain training on adding value to milk. The results suggest that most of the respondents had the raw material in terms of milk, had skills as well as the finances required to obtain training on value addition to milk. They

also seem to suggest that extension officers had provided training on value addition only to a limited number of respondents and that they had knowledge of other sources from where they could obtain such training. On the extent to which availability of finances for use in product diversification had affected profitability of their businesses, 68.4% of the respondents were of the opinion that availability of finances was critical to diversification and profitability, 13.9% were of the opinion that availability of finances was not a great challenge in diversification and profitability, 13.1% were of the opinion that availability of finances moderately affects diversification and profitability, 3.3% were of the opinion that availability of finances would lead to expansion in diversification and profitability and only 1.2% were of the opinion that availability of finances had no effect on diversification and profitability of the business. On the skills that the respondents possessed on producing diversified dairy products that had an effect on the sales of the business, 95.1% indicated that they had skills on producing milk based drinks such as tea, 89.2% had skills on processing yoghurt and *mala* (fermented milk) while 7.2% indicated that they possessed skills on milk cultures which had resulted in increased sales. The results indicate that majority of the respondents believe that access to resources such as finances and possessing the skills required to undertake product value addition into diversified dairy products had a positive effect on profitability and sales of the business.

Table 1 shows the descriptives for access to resources for product diversification and performance. Having excess milk, finance to purchase raw materials, provision of training by extension officers and access to more finances are important in producing a variety of dairy products with the means ranging from 3.48 to 4.12. However, willingness to pay to obtain training on producing a variety of dairy products was not very important in the decision to produce a variety of dairy products ($\bar{X} = 2.31$, $SD = 1.10$). The results point to the importance of having access to resources when making the decision to undertake value addition to milk to produce diversified products. With regard to performance, sales of milk per litre were more compared to sales of value added milk products per litre ($\bar{X} = 3.71$, $SD = 1.25$). The dairy enterprises had experienced a steady growth in sales over the last 3 years due to value addition to milk ($\bar{X} = 2.90$, $SD = 1.22$). On profitability of the dairy enterprises, profits had improved over the last 3 years due to value addition to milk ($\bar{X} = 3.01$, $SD = 1.35$). However, the rate of return on profits per week was more in selling fresh milk compared to that of value added dairy products ($\bar{X} = 3.61$, $SD = 1.35$). On competitiveness, the businesses had an advantage over competitors for the last 3 years due to value addition to milk ($\bar{X} = 2.78$, $SD = 1.21$) while the perception was that the entrepreneurs thought that they would not have accumulated the wealth they had were it not for value addition to milk ($\bar{X} = 2.74$, $SD = 1.39$). On the other hand, the perception that the costs of adding value to milk had increased substantially which had reduced profits was not an important factor in measuring performance ($\bar{X} = 2.20$, $SD = 0.97$). The results indicate that sales of milk are more compared to those of value added dairy products which resulted in more profits per week in selling milk compared to value added dairy products. Sales of the enterprises had also increased due to value addition to milk. However, the results also suggest that value addition had made the businesses generate more profits, had made them more competitive and had resulted in accumulation of more wealth.

Table 2 shows the results of correlations on access to resources for use in product diversification in relation to performance of the dairy enterprises. Access to resources positively affects performance (r

(250) = 0.23; $p < 0.001$). The regression model of access to resources against profitability was found to be significant ($F(1,248) = 13.69$, $p < 0.001$). The resulting goodness of fit was $R^2 = 0.05$ indicating that 5% of the variability in Y is explained by access to resources index. There was no multicollinearity in the model because the Variance Inflation Factor (VIF) = 1.00. The regression equation was:

$$Y = 1.87 + 0.29 \text{ access to resources}$$

where; Y = Dairy enterprise performance

The constant could be explained by other variables like value addition, level of technological innovation and access to markets.

5. CONCLUSION AND IMPLICATIONS OF THE STUDY

The paper sought to investigate the extent to which informal dairy enterprises in Kiambu County in Kenya access resources and possess capabilities for engaging in product diversification and the effect on performance. It also endeavoured to provide policy recommendations on strategies that can be adopted to enhance access to resources by small scale milk vendors (SSMVs) to diversify their product range which will result in higher growth and improved performance of the enterprises. The findings of the study indicate that most of the respondents used multiple sources of funding to finance their product diversification activities with a majority of them using sales proceeds from other products sold and owner savings. Other sources included contributions from family members and friends, cooperatives and loans from banks. Findings also indicate that very few of the respondents used financing from the cooperatives and banks underscoring the findings of (Muia *et al.*, 2011; Pedersen and McCormick, 2000) that banks are not willing to lend to SSMVs. This could suggest that in light of lack of access to finance from formal financial institutions, the SSMVs had resorted to financing their businesses from other alternatives available to them. Findings also suggest that most of the respondents had raw material in the form of excess milk and also possessed the relevant skills required for undertaking value addition into diversified dairy products, though most of them had not acquired the training from extension officers. This indicates that the informal dairy enterprises have the capability to undertake value addition activities into higher value products. Value addition had resulted in improved performance of the dairy enterprises in terms of profits, sales, competitiveness and wealth accumulation, though the rate of return on profits per week was more in selling raw fresh milk compared to that of value added dairy products. The findings supported the hypothesis that there is a positive correlation between access to resources in the form of raw materials, finances and skills in relation to performance of the dairy enterprises in the informal dairy sector in Kenya.

The government of Kenya can play a crucial role in increasing the pool of funds through targeted group funding in the form of the youth enterprise fund and the women's fund. Information should also be availed to the dairy enterprises on other government institutions that offer low cost financing to small scale businesses. With most banks requiring a business plan as a pre-condition to financing, training should be provided on its preparation and sensitization done by sector players on the need for record keeping. This is because it was noted that a large number of the dairy enterprises do not keep records. Formal financial institutions should be sensitized on the need to embrace the informal dairy sector in financing given that it is legal in Kenya and has been cited as contributing greatly to the economy. They can have a segment on the informal dairy sector and relax collateral requirements to it. Given that the

SSMVs get regular cash flow with payment for dairy products sold being done almost immediately, they can be encouraged to deposit their sales proceeds into an account held with the bank. The SSMVs can then be provided with loans based on the amount of money deposited from the proceeds. This can also act as an incentive to encourage saving from which further investments and expansion of the businesses can be done. Dairy sector players should also enhance training on value addition for the entrepreneurs that have no skills on adding value to milk. This can be done at group level or based on regional clusters. This paper provides initial findings on the relationship between access to resources for pursuing related product diversification strategy and performance of informal dairy enterprises in Kenya, a developing country.

5.1 Limitations and Recommendations for Future Research

Findings of the study point to the fact that most of the dairy enterprises in Kiambu County had excess milk that could be used for value addition. Majority of them also possessed the skills required to undertake value addition to milk which had a positive effect on performance of the businesses. There is need to conduct studies in other parts of the country known to be large producers of milk such as Nyandarua, Nakuru and Eldoret to find out if they also have excess milk that can be used for value addition. The sources of finances for use in product diversification needs to be explored in different parts of the country especially on sources like *chamas* (merry go rounds) and table banking concepts which are becoming preferred informal sources of funding businesses especially for women (Startup Academy, 2014). This is because findings from this study indicated that most of the respondents in the study area were women. The performance outcome of access to resources for product diversification in terms of profits generated by informal dairy enterprises needs to be explored further in different parts of the country, in order to gain more insight into this relationship. Programme specific and targeted strategies can then be formulated and implemented based on specific outcomes.

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APPENDIX**Table 1: Descriptive statistics for access to resources and performance of dairy enterprises**

	N	Mean	Std.	
			Deviation	Variance
If I had excess milk, I would produce more dairy products	250	3.8080	1.05812	1.120
If I had finances to purchase raw materials, I would produce more dairy products	249	4.0522	.89425	.800
If extension officers provided the training i needed, I would produce more dairy products	248	3.4758	1.06062	1.125
I would not be willing to pay to obtain any training on producing a variety of dairy products	250	2.3120	1.09703	1.203
If I obtained more finances, I would produce more dairy products	250	4.1160	.90433	.818
My sales for milk per litre are more in relation to sales of value added milk products per litre	249	3.7149	1.25202	1.568
My profits have improved over the last 3 years due to value addition to milk	249	3.0120	1.34549	1.810
I think I would not be where I am in wealth accumulation if not for value addition to milk	242	2.7438	1.39370	1.942
My business has had an advantage over competitors for the last 3 years due to value addition to milk	250	2.7760	1.21148	1.468
The costs of adding value to milk have increased substantially which has reduced my profits	247	2.1984	.96962	.940
I have experienced a steady growth in sales over the last 3 years due to value addition to milk	250	2.8960	1.22113	1.491
My rate of return on profits per week is more in selling fresh milk compared to that of value added dairy products	250	3.6080	1.34967	1.822
Valid N (listwise)	236			

Table 2: Correlations Between Access to Resources and Performance of Dairy Enterprises

		performance	X1
performance	Pearson Correlation	1	.229**
	Sig. (2-tailed)		.000
	N	250	250
X1	Pearson Correlation	.229**	1
	Sig. (2-tailed)	.000	
	N	250	250

** . Correlation is significant at the 0.01 level (2-tailed).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.229 ^a	.052	.048	.86328	.052	13.687	1	248	.000

a. Predictors: (Constant), X1

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.200	1	10.200	13.687	.000 ^a
	Residual	184.823	248	.745		
	Total	195.023	249			

a. Predictors: (Constant), X1

b. Dependent Variable: performance

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.874	.308		6.077	.000		
	X1	.293	.079	.229	3.700	.000	1.000	1.000

a. Dependent Variable: performance

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