Farm management skills, entrepreneurial bricolage and market orientation

Catherine Komugisha Tindiwensi, John C. Munene, Arthur Sserwanga and Ernest Abaho
Business School, Makerere University, Kampala, Uganda, and
Rebecca Namatovu-Dawa
Department of Finance, Makerere University Business School, Kampala, Uganda

Received 8 August 2019
Revised 17 October 2019
Accepted 15 January 2020

Abstract

Purpose – This article investigates the relationship between farm management skills, entrepreneurial bricolage and market orientation in smallholder farms.

Design/methodology/approach – The study used quantitative approaches to survey 378 smallholder farms in Uganda. Data were analysed using Structural Equation Modelling to establish the relationship between farm management skills, entrepreneurial bricolage and market orientation.

Findings – Farm management skills positively predict market orientation while entrepreneurial bricolage partially mediates the relationship between farm management skills and market orientation.

Research limitations/implications – The study utilized a survey design, which provides a cross-sectional view. Given that market orientation of smallholder farms can vary during the farm growth process, it becomes more informative to analyse how the independent and mediating variables cause a variation at different levels of market orientation.

Practical implications – Farm management training programmes that emphasize financial management skills and employ a household approach should be strengthened to enhance smallholder market orientation. Strategies for enhancing market orientation should also entail bricolage as a complementary behaviour to farm management.

Originality/value – We introduce entrepreneurial bricolage to the market orientation debate. The study brings alive the significance of entrepreneurial bricolage in smallholder farming. It also confirms the role of farm management skills in enhancing the market orientation of smallholder farms.

Keywords Market orientation, Entrepreneurial bricolage, Smallholder farms, Farm management skills

Paper type Research paper

1. Introduction

Agriculture is poised to remain a key driver for economic development in most of Africa (Van Rooyen, 2014). Contrary to the large-scale production farming models prevalent in developed countries, African agriculture is predominantly smallholder. Close to 70% of Africa's population is involved in agriculture as smallholder farmers working on parcels of land that are, on average, less than 2 ha (Alliance for a Green Revolution in Africa (AGRA), 2017). The Food and Agriculture Organisation of the United Nations (FAO) uses the term "smallholder" to refer to limited resource endowment relative to other farmers in the sector. Quite often, smallholder farming is considered synonymous with subsistence farming with inherent low market orientation (Alexander *et al.*, 2017). It is estimated that roughly 80% of the world's extreme poor live in rural areas and depend largely on farming to make a living. Despite this

This article is derived from a research project titled "Commercialization of Smallholder Farms" that is funded by Makerere University Business School (MUBS). We appreciate the financial support from MUBS, for without it this research would not have been undertaken.

Journal of Agribusiness in Developing and Emerging Economies
Vol. 10 No. 5, 2020
pp. 717-730

2044-0839
DOI 10.1108/JADEE-08-2019-0111

appalling state, smallholder agriculture is seen as a promising path to prosperity especially since empirical evidence shows that commercialization of smallholder farms can be attained (Chapoto *et al.*, 2013; Muyanga *et al.*, 2013)

Most smallholder farms operate in a resource-constrained environment and are normally less financially endowed than other farms (Muyanga *et al.*, 2013; Wiggins *et al.*, 2011). It has also been argued that many of the skills associated with running a successful business are not necessarily skills that the farmers have. In the smallholder farming context, the management function is obscure given the complex interface between family, farm and business. Unfortunately, the strong social orientation often overshadows the need for profitable market participation.

In most parts of Africa, even with the growing domestic and regional markets, the transformation of small-scale subsistence farming to more commercially-oriented farming has been slow and difficult (Hazell, 2013). The concept of market orientation has been related to following market signals, producing more marketable products, pursuing a profit motive, organization-wide market intelligence and organizational business culture (Jaleta *et al.*, 2009; Kohli and Jaworski, 1990; Narver and Slater, 1990; Pingali and Rosegrant, 1995). The transition of smallholder subsistent farms to market-oriented commercial farms is expected to drive the modernization of Africa's agriculture, yet overwhelming evidence shows that smallholder farmers comprise the world's poor.

Whereas the need to attain greater market orientation in the resource-constrained smallholder farming is well acknowledged, few studies have explained how smallholder farms do with the limited resources to transit from subsistent production systems to market-oriented farms. We premise the study on the theory of entrepreneurial bricolage to explain the relationship between farm management resources, entrepreneurial bricolage and market orientation. The theory explains how entrepreneurs start and grow their businesses in scarce resource environments (Baker and Nelson, 2005). It argues that entrepreneurs render unique services by recombining existing elements for new purposes irrespective of institutional limits (Baker and Nelson, 2005; Senyard *et al.*, 2009). Firms are able "to create something from nothing" by applying combinations of resources at hand to new problems and opportunities. These resources may have been rejected or ignored by other firms (Senyard *et al.*, 2009).

The theory, thus provides a suitable framework for analyzing how the market orientation of smallholder farms can be attained. Unfortunately, it has been predominantly used in industrial setups and nascent and young firms with limited application to existing firms. This study transcends current research boundaries and extends entrepreneurial bricolage to older existing firms, such as smallholder farms. Understanding how innovative resource combinations in the smallholder farming context can be attained by "making do with whatever is at hand" (Levi-Strauss, 1967) will contribute to entrepreneurial bricolage debate from a developing country perspective. Furthermore, this article shows the relevance of entrepreneurial bricolage beyond startup to support the business transition to commercialization. The study also makes recommendations of how smallholder farms can use existing resources to solve new problems and seize new opportunities (Preece, 2013) for enhanced market orientation.

Hence, this article contributes to the current debate on entrepreneurial bricolage and extends its boundaries to mature businesses in the smallholder farming sector. We review existing literature; then present the methodology used and the study results that form a basis for discussion. Lastly, we draw conclusions and suggest practical, methodological and policy implications from the study.

2. Literature review

2.1 Market orientation in smallholder agriculture

Several studies have confirmed that market orientation is crucial for business success and that market-oriented organizations attain higher performance than non-market-oriented organizations (Na *et al.*, 2019). In smallholder agriculture, market orientation is a key dimension of commercialization (Yaseen *et al.*, 2018). It is often associated with more specialized systems (Pingali and Rosegrant, 1995). Extant literature portrays the key components of market orientation as customer focus, competitor orientation, interfunctional coordination, market intelligence and long-term focus and survival (Kohli *et al.*, 1993; Narver and Slater, 1990). The customer occupies a central position, and as such, the organizational culture aims at ensuring that all employees are committed to continuously creating superior customer value. The smallholder context is peculiar, with most smallholder farms traditionally subsistent and predominantly producing food for home consumption. They rely largely on family labour; the majority have no external farm employees, and they also have limited market information or capacity to conduct independent market research. In addition, the concept of customer value creation is hardly considered, given both the commodity nature of most agricultural products and the spiteful farmer-trader relations.

Market orientation has been defined in different ways; but the most prominent is the definition given by Kohli and Jaworski (1990, p. 6) as "*the organization-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization wide responsiveness to it.*" It is also viewed as "the extent to which an actor in the marketplace uses knowledge about the market, especially about customers, as a basis for decision-making on what to produce, how to produce it, and how to market it" (Trienekens *et al.*, 2018) In the context of smallholder agriculture, market orientation debate has largely been influenced by Pingali and Rosegrant (1995) who proposed three farming systems depending on the level of market orientation – "subsistence systems," "semi-commercial systems" and "commercial systems." According to Pingali and Rosegrant, a "commercial farming system" has the highest market orientation.

Market-oriented farming is also concerned with escalating the profit and wealth motives of the farms over the inherent social and cultural demands. A smallholder farm is market-oriented if "its production plan follows market signals and produce commodities that are more marketable" (Gebremedhin *et al.*, 2012). Contrary to traditional farming, where the farmer sells the surplus, market-oriented farms produce commodities for sale. This "market driven" approach acts contrary to a food security approach promoted by most developing agents. It is, thus, not surprising that the transition from subsistence to the market-driven farming system is expected to be externally driven (Kahan, 2013). In the FAO extension guide series, Kahan (2013) asserts that developing a market orientation should entail "building the capacity and skills of extension workers in farm management." A similar recommendation was made earlier by Gebremedhin *et al.* (2012), who argue for market-oriented extension services. They argue that such extension services expected to foster market orientation of farmers should be premised on agricultural marketing, including agricultural market information, facilitating market linkages, facilitating collective marketing and embracing agricultural value chain approach.

Over the years, the need for market orientation in the smallholder farming has been accentuated by the need to raise income for household welfare and the need to become more relevant given the economic changes characterized by market liberalization and globalization (Kahan, 2013). Market-oriented (commercial farms) have a distinct profit-market goal that is long-term in nature. It entails a wider scope of farm activities and often involves complementary and related diversification.

2.2 Farm management skills and market orientation

This article presents farm management skills as a farm resource that enhances market orientation. We adopt Kohli and Jaworski's definition of market orientation because of its comprehensiveness in defining the domains and scope of market orientation. It emphasises market intelligence regarding the needs of customers, as well as the dissemination and responsiveness to those needs at an organizational level. Most studies have focused on its components, measurement and outcomes (Kohli and Jaworski, 1990; Kohli *et al.*, 1993; Narver and Slater, 1990; Slater and Narver, 1998). It is also viewed as an organizational culture where all employees are committed to the continuous creation of superior value for customers (Narver *et al.*, 1998).

Within the smallholder farm context, the "organization" is a farming household, and "employees" are predominantly family members. They operate in farming household-constrained limits that are culturally grounded. Management plays a key role in the creation of market orientation, yet few studies have focused on how market orientation can be attained in smallholder farms given their peculiar farm management skills. The concept of "Farm management" has an implied connotation of "Farming as business" (Adams, 1921; Adenegan *et al.*, 2013). Farm management has broadly been accepted to involve three principal functions of planning, implementation and control along three key activity areas of production, marketing and finance (Kahan, 2013). In the smallholder context, the farmer owner is usually the manager with no external fulltime employees, and hence, rendering the management process obscure (Van Reenen and Davel, 1989). Farmers have to possess the skills needed to better manage their limited resources; however, many of the skills associated with running a successful business are not necessarily skills that the farmer has.

Moreover, most small farms rely on family ties and kinship relations as a farm resource. This has led to a generally held perception that for smallholder farms to better manage their farms, they need the assistance of extension workers. Unfortunately, extension workers in most developing countries focus on agricultural production and technology transfer (Kahan, 2013), thus leaving a gap in farm business management. A pronounced skills gap exists in developing countries where not only farmers but also the extension workers on whom they rely have inadequate managerial skills (Kahan, 2008).

Kahan (2013) argues that market-oriented farming requires that farmers are knowledgeable about farm management. Farm management is viewed as a process of decision-making that involves setting goals and objectives, farm planning, implementing the plan and monitoring its outcome. Indeed, extant literature has shown that agricultural land requires the availability of managerial skills for successful farming (Boehlje *et al.*, 2005; Brown and Weber, 2013). Unfortunately, the agriculture sector is perceived to have low management skills and will need to strengthen it to cope with the ever-changing farming environment (Omiti *et al.*, 2007).

2.3 Entrepreneurial bricolage-theoretical review

Several studies have emphasised the role of context in gaining a better understanding of management (Knight and Cross, 2012; Sheth, 2010). The blend of family, business and household in smallholder farms creates a peculiar context that defines what and how resources are applied to the farming business. Smallholder farms are known to operate in a resource-constrained environment; characterised by small plots of land, limited access to agricultural technology, credit and skills among others (Chapoto *et al.*, 2013; Jayne and Muyanga, 2011; Wiggins *et al.*, 2011). For ensuring relevance to the research question, this study is framed based on the theory of entrepreneurial bricolage because of its relevance to the smallholder farming context.

The concept of bricolage was introduced by Levi-Strauss (1967) as "Making do with whatever is at hand." It remained relatively undeveloped until it was revisited by Nelson and Baker (2003) in their *"Making that which is Old New Again: Entrepreneurial bricolage."* They coined the concept of "entrepreneurial bricolage" and introduced it as "a type of resourcefulness" that enables entrepreneurs to survive or even create robust and growing firms despite inadequate resources. It was the profound study by Nelson and Baker (2005), which detailed the theoretical domains and assumptions of entrepreneurial bricolage theory. This paved the way for several studies premised on its application (Gurca and Ravishankar, 2015; Stinchfield *et al.*, 2012; Witell *et al.*, 2017). The theory posits that firms are able to render unique services by recombining elements at hand for new purposes that challenge institutional definitions and limits (Nelson and Baker, 2005). In the context of market orientation in smallholder farms, it will imply the application of bricolage in market intelligence generation, following market signals, pursuing long-term goals and creating superior customer value.

The fundamental theoretical domains of entrepreneurial bricolage theory are "resources at hand," "recombination of resources for new purposes" and "making do" (Nelson and Baker, 2005). Their contribution extended to articulating the limitations of their conceptualization, as well as the relationships between the variables (Whetten, 1989). They argue that small firms "create something from nothing" by exploiting physical, social, or institutional inputs that other firms rejected or ignored. The theory also encompasses both the customers and the markets within which firms operate in rendering unique products and services.

They further argue that in resource-constrained environments, entrepreneurs do not enact institutional limits and tend to defy regulatory environments, creating contexts of resource construction (Endres and Woods, 2010). Such contexts are characterized by creativity, improvisation, tolerance for ambiguity, combinative capabilities, social skills and networking. This conceptualization has formed the conventional wisdom of entrepreneurial bricolage theory and induced the beginnings of a process model of bricolage and firm growth.

Given the profound, limited resources, entrepreneurs work with the theory gained prominence in explaining early-stage entrepreneurship in resource-constrained environments (Davidsson, 2016; Sunduramurthy *et al.*, 2016). Whereas the initial focus was on profit-motivated business start-ups, its application has been extended to social ventures, small businesses and in different sectors (Phillimore *et al.*, 2016; Sunduramurthy *et al.*, 2016). Its domains have also been extended to include utilizing "resources in new and innovative ways," "engaging a wide range of stakeholders as partners" (Sunduramurthy *et al.*, 2016), and innovation (Shen, 2018). For organizations to be successful, they combine resources to solve new problems and exploit opportunities (Senyard *et al.*, 2009).

Literature suggests a need for specific and specialized knowledge sets in addition to skillfully combining resources in the actions of the bricoleur. Although bricolage is considered an opportunity, others consider it as a second-best option with limited relevance in more established firms. Its advancement has also been extended to the epistemological orientation in bricolage studies. The field started off as predominantly interpretivistic in nature (Nelson and Baker, 2005), but recent trends suggest a positivistic objective orientation that employs quantitative methods (Davidsson, 2016; Senyard *et al.*, 2009).

3. Methodology

3.1 Study area

Data was collected from three major maize producing districts in Uganda, namely: Iganga, Kapchorwa and Kween. Maize was selected because of its successful transition from a food crop to a non-traditional commercial crop for smallholders in Uganda. A bulk of the

smallholder farmers, estimated at 1.8 million agricultural households, grow maize annually. The three districts were selected because of their significance in maize production in the country. Iganga is the leading maize producing district in Uganda with an annual production estimated at 303,262 MT, while Kapchorwa and Kween have the highest productivity (UBOS, 2011). For each district, the leading farmers' association was identified with the assistance of the District Production staff. The leading associations were preferred because they normally comprise market-oriented farmers that could effectively inform this study.

3.2 Sampling design and procedures

We determined a sampling frame of maize farms in the selected districts since they are fairly representative of smallholder farmers in Uganda. Maize is the leading crop grown by about 30% of agricultural households in Uganda (UBOS, 2011, 2014). The list of registered association members was consulted to identify smallholder farms, which were conveniently selected to participate depending on their availability and access. By applying *Yamane's Formula (1973)* to the 6,900 registered smallholder farms, a representative sample of 378 was determined. A questionnaire was administered to 470 smallholder farms to allow for non-response, of which 378 questionnaires were useable, giving a response rate of 80%.

3.2 Sample description

The sample comprised 378 smallholder farms that occupied between one and five acres of land (70%). They were established to meet both the food security and income needs of the farmers (91%), and the majority (62%) had been in existence for more than ten years. About 79% of the farms were operated on owned land while 18% were on hired land. Only 22% of the farms employed between one and three fulltime employees, while 68% relied solely on family labour with an average of four family members involved in the farm activities. However, during the peak season, most of the smallholder farms (71%) relied on casual workers with an average of two workers per season. Most of the farms were located less than 10 Km from marketing infrastructures, such as a tarmac road, a produce market and a store.

3.3 Measurement of variables

The variables were measured using measurement items structured in a questionnaire. The development of the instrument was based on an extensive review of existing measurement scales and empirical evidence for the study variables. The instrument was pilot-tested to ensure validity and reliability. Reliability was tested using the Cronbach's Alpha Coefficient, and a cutoff point of 0.7 was applied to all variables (`Field, 2009). Convergent and discriminant validity was established through Exploratory Factor Analysis (EFA) for item reduction. By using the Principal Component Analysis, convergent validity was based on commonalities. Only items with a factor loading of 0.6 and a Kaiser-Meyer-Olkin (KMO -Measure of Sampling Adequacy) above 0.7 were retained (Field, 2009). The retained items also had a Total Variance Extracted of equal or greater than 50% (Field, 2009).

We further confirmed that the data satisfied the assumptions for parametric tests of normality, linearity, homogeneity of variance and data independence (Field, 2009). The Confirmatory factor analysis shows that Farm management skills (FMGT) are perceived as the ability to maintain up to date production and financial records and assure proper accountability for farm produce from production to sale. Market orientation (MO) is viewed as the ability to conduct market research, understand the different buyer groups and regularly change the products to ensure that they are in line with what customers want. Entrepreneurial bricolage (EB) is understood as resource reallocation based on priority, use of existing farm resources for new uses and dealing with new challenges by applying a

combination of existing resources inexpensively available to smallholder farms. The measurement items were confirmed using CFA to establish the final retained items.

Market orientation was measured by three items: "In our farming business, we do a lot of market research"; "Understanding the different market buyer groups informs our product development efforts" and "We regularly change the products we produce to ensure that they are in line with what our customers want" (adapted from the MARKOR scale, Kohli and Jaworski, 1990). Farm management skills were measured by three items; "We maintain up to date production records"; "Proper accountability for the farm produce is always assured from production to sales" and "We maintain up to date financial records" (adapted from Kahan, 2013). Entrepreneurial bricolage was measured by three items: "We usually reallocate resources based on priority"; "We normally use existing farm resources/ materials for new uses" and "We deal with new challenges by applying a combination of our existing resources inexpensively available to us" (adapted from Davidsson, 2016; Senyard *et al.*, 2009).

Data were explored and analysed using IBM SPSS Version 23/ SPSS-AMOS. The missing values were identified using MCAR's Little test (<2%) and were replaced using linear interpolation as recommended by Field (2009). Outliers were managed by ensuring that the Z scores were within the range ±2.5 (Hair *et al.*, 2010).

3.4 Analytical framework

We employed Structural Equation modelling for hypothesis testing because of its ability to combine different analytical methods for hypothesis testing. It also provides unbiased estimates of mediation and suppression effects (Cheung and Lau, 2008) by confirming total, direct and indirect effects, as well as establishing the latent variables in the model. A path diagram was used to illustrate the relationships between the variables of the fitted model. We combined the Goodness of Fit Index (GFI), Incremental Fit Index (IFI) and the Root Mean Square Error of Approximation (RMSEA) to minimize both Type I and Type II errors, and considered the measurement cutoff points recommended by Hu and Bentler (1999).

4. Results

4.1 Description of smallholder farms

The study sample shows that smallholder farms occupy between one and five acres (64%) of land. About 79% of the farms were operated on owned land while 18% were on hired land. Of those that operated on owned land, 69% were family-owned and 22% were solely owned. Ninety-one per cent (91%) were established to meet both the food security and income needs of the farming households. Smallholder farms rely on family labour with an average of four family members involved in the farm activities. Only 22% of the farms employed one to three fulltime employees, but the majority (68%) had no fulltime employees. However, during the peak season, most of the smallholder farms (71%) relied on casual workers, ranging between one and nine workers per season. Smallholder farms appear to access modest marketing infrastructure. Fifty-two per cent (52%) of the farms were located less than 10 Km from a tarmac road; 51% were located less than 10 Km from a major market; 77% were located less than 10 Km from a store or warehouse.

4.2 Hypothesis testing

The SEM results show a significant positive correlation between Farm Management Skills and Market Orientation ($r = 0.593$). The results also indicate a positive correlation between Farm Management Skills and Entrepreneurial Bricolage ($r = 0.248$) and a positive correlation between Entrepreneurial Bricolage and Commercialization ($r = 0.335$). The regression results

show significant regression estimates for the hypothesized direct models, as demonstrated in Table 1.

An analysis of the standardized direct, indirect and total effects reveals that entrepreneurial bricolage partially mediates the relationship between farm management skills and market orientation. Both relationships between the independent variable and mediator and the between mediator and dependent variable are supported. The standardized estimates show the indirect effects of entrepreneurial bricolage on the relationship between farm management skills and market orientation. The total effects of farm management skills on market orientation increase when mediated (estimates; 0.638 < 0.728), indicating a partial mediation (Baron and Kenny, 1986). The hypothesized model that farm management skills and entrepreneurial practices predict market orientation has 61% explanatory power. A path diagram in Figure 1 shows the fit mediated model as per the recommended cut off Fit Indices by Hu and Bentley (1999).

5. Discussion

5.1 Farm management skills development

The results show that farm management skills enhance market orientation of smallholder farms, and entrepreneurial bricolage is a conduit through which farm management skills improve market orientation. This study confirms that farm management fosters market orientation of smallholder farms. The findings are in support of earlier findings that management is important for developing market orientation (Foley and Fahy, 2009; Jaleta *et al.*, 2009; Kahan, 2013; Kassim and Sulaiman, 2011). This is consistent with suggestions

Table 1.
Regression weights

			Estimate	S.E.	C.R.	*P*	Label
EB	←	FMGT	0.248	0.045	5.532	***	par_9
MO	←	FMGT	0.593	0.044	13.457	***	par_7
MO	←	EB	0.335	0.049	6.901	***	par_8

Note(s): *** denote significance level for *P* is 0.05

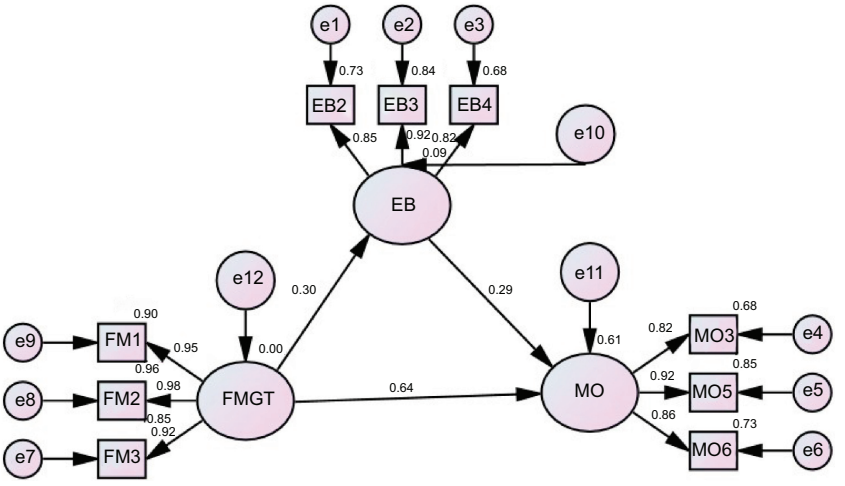

Figure 1.
Path diagram for the fit mediated model

(Chi-Square = 69.236; Degrees of freedom = 24; Probability level = 0.000; GFI = 0.962; NFI = 0.978; RFI = 0.968; TLI = 0.979; IFI = 0.986; CFI = 0.986; RMSEA = 0.071).

from Kodithuwakku and Rosa (2002), and McElwee (2005) that farmers need managerial skills for a successful farming business.

The findings also render support to suggestions of Narver *et al.* (1998) on the "programmatic" approach through which market orientation can be created. Indeed, Poole *et al.* (2013) argue for investment in rural education that creates appropriate skills for rural people to exploit local opportunities. This is also consistent with the suggestions of Kaneene *et al.* (2015) that technical and scientific skills in farm management can improve Africa's food system. Successful cases in Africa also show that market orientation of smallholder farms has been built through training programmes that enhance farm management skills of smallholder farmers (Lynch *et al.*, 2014; Vink *et al.*, 2014) in their quest to produce and supply products that can be competitive on the market.

Another contribution has been through synthesizing the critical farm management skills needed. Traditionally, farm management has been viewed as planning, implementation and control along the production, marketing and finance functions (Kahan, 2013). However, this study was able to tease out the prominence of financial management skills, especially the ability to maintain up-to-date production and financial records; and, ensuring proper accountability of farm produce from production to sale.

5.2 Entrepreneurial bricolage and market orientation

Bricolage is an entrepreneurial behaviour in resource-poor environments (Baker and Nelson, 2005). This study reveals that market orientation emerges as an outcome of entrepreneurial bricolage. This implies that smallholder farms that are able to "make do with whatever skill is available" are more likely to enhance their market orientation. As the shortage of resources is often a major challenge for smallholder farms (Chapoto *et al.*, 2013; Muyanga *et al.*, 2013; Wiggins *et al.*, 2011), they have to possess the skills needed to recombine limited resources.

Bricolage is upheld for its ability to quickly respond to the changing circumstances (Phillimore *et al.*, 2016). This even makes it a more relevant practice for African smallholder farmers who are expected to make a substantial contribution to feed the world's nine billion people in 2050 (Connolly, 2014). The explosive population growth rate, especially in Sub-Saharan Africa, fast urbanization, changing consumer preferences and more stringent quality standards (Lynch *et al.*, 2014; Mabaya *et al.*, 2014; Van Rooyen, 2014) will require smallholder farmers to keep abreast with change through bricolage. Empirical evidence shows that smallholder farms embrace bricolage in their quest to enhance market orientation. They use existing resources and materials for a new use, deal with new challenges by applying a combination of existing resources inexpensively available to them, and reallocating resources based on priority.

5.3 Entrepreneurial bricolage in farm management

The findings suggest that entrepreneurial bricolage is the conduit through which farm management skills enhance market orientation in smallholder farms. This concurs with recent studies that smallholder farmers have an entrepreneurial attitude, especially in the way they manage their farms (Rosairo and Potts, 2016). Extant literature depicts the heavy reliance of small farms on family labour, and farming households use family and kinship relations as a business-resource base (Carter, 1998). They are not only constrained in terms of physical resources but also farm management skills as well. Family defines a milieu for resource mobilization; hence, by applying bricolage, smallholder farms can draw on existing human resources that are inexpensively available to them to extend beyond the farm limits and enhance their market orientation.

The study affirms bricolage as a type of resourcefulness (Baker and Nelson, 2005). Indeed, the smallholder context fits well with suggestions of Halme *et al.* (2012), which consider

bricolage as "a social mindset combined with resourcefulness." Quite often, this "tight interwoven connection" between the farm and family is portrayed from the point of weakness, but it has emerged as strength in smallholder farms, consistent with the findings of Pearson *et al.* (2008). This entails extracting value from cooperation, social networks and contacts (Lee, 2010; Najib and Kiminami, 2011).

The social orientation (highly evident in smallholder farms) influences the way entrepreneurs engage a wide range of stakeholders in resource reallocation and recombination and utilizing resources in new and innovative ways (Sunduramurthy *et al.*, 2016). This allows farms to innovate and grow in the face of constraints, leading to initially unforeseen results (Senyard *et al.*, 2010). The overall outcome is value creation in terms of better market orientation and survival and longevity of smallholder farms (Stinchfield *et al.*, 2012).

6. Conclusion and implications

6.1 Conclusion

The study reveals that market orientation of smallholder farms can be attained through improved farm management skills based on recombining and utilizing the available, inexpensive resources. Enhancing market orientation of smallholder farms will require (1) acquisition of farm management skills and (2) sharpening the farmers' capacity to utilize existing farm resources, including human resources and materials for new uses and addressing new obstacles.

6.2 Methodological implications

A survey design was used to provide a cross-sectional view of the hypothesized model. Given that the market orientation of smallholder farms can vary during the farm growth process, it will be more informative to analyse how the independent and mediating variables cause a variation at different levels of market orientation. In addition, in-depth interviews with various stakeholders in smallholder farms would further deepen our understanding of the study variables.

6.3 Practical implications

A comprehensive programme to develop farm management skills is necessary to enhance the market orientation of smallholder farms. Its key ingredients should include (1) financial management skills training with emphasis on farm production and financial record-keeping; (2) a household approach that brings on board farm owners, available household family members and farm workers; and (3) integrating entrepreneurial bricolage as a complementary farm management skill.

6.4 Social implications

Interactive behaviour enables smallholder farms to extend beyond their resource limits; hence, interventions that are socially oriented will improve entrepreneurial bricolage and foster market orientation of smallholder farms. Strategies premised on social interactions with different stakeholders may be more effective in imparting the necessary skills.

6.5 Policy implications

Governments should invest in Farm Management training programmes and Farm Schools to enhance both formal and non-formal training. In cases where farm management programmes may be non-explicit, there will be a need for curriculum review and development for enhanced

farm management skills. In addition, incentives could be given to smallholder farms that employ skilled farm managers. This will create more employment and, more importantly, enhance the market orientation of smallholder farms.

6.6 Further research

The model shows a partial mediation; hence, other studies that build on this finding should be undertaken to explore other predictor variables for market orientation in smallholder agriculture. The obscure distinction between the smallholder farm, family and household presents research opportunities to further explore market orientation from different theoretical perspectives, such as the network theory perspective, informal business perspective and family business perspective. Further contribution can be made towards the role of self-employment theory, small business theory, lean start-up theory and complexity in providing a better understanding of market orientation in smallholder farms.

References

Adams, R.L. (1921), *Farm Management: A Text-Book for Student, Investigator, and Investor*, McGraw-Hill Book Company, Washington, DC.

Adenegan, K.O., Adams, O. and Nwauwa, L.O.E. (2013), "Gender impacts of small-scale farm households on agricultural commercialisation in oyo state , Nigeria", *British Journal of Economics, Management and Trade*, Vol. 3 No. 1, pp. 1-11.

Alexander, K., Case, P., Jones, M., Connell, J., Alexander, K., Case, P., ... and Connell, J. (2017), "Commercialising smallholder agricultural production in Lao people' s democratic republic", *Development in Practice*, Vol. 27 No. 7, pp. 965-980, doi: 10.1080/09614524.2017.1353064.

Baker, T. and Nelson, R.E. (2005), "Creating something from nothing: resource construction through entrepreneurial bricolage", *Administrative Science Quarterly*, Vol. 50 No. 3, pp. 329-366, doi: 10.2189/asqu.2005.50.3.329.

Baron, R.M. and Kenny, D.A. (1986), "The moderator-mediator variable distinction in social psychological research: conceptual , strategic , and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173-1182.

Boehlje, L.M., Doehring, T. and Sonka, S. (2005), "Farmers of the future: market segmentation and buying behaviour", *The International Food and Agribusiness Management Review*, Vol. 8 No. 3, pp. 52-68.

Carter, S. (1998), "Portfolio entrepreneurship in the farm sector: indigenous growth in rural areas?", *Entrepreneurship and Regional Development*, Vol. 10, pp. 17-32.

Chapoto, A., Mabiso, A. and Adwinmea, B. (2013), "Agricultural commercialization, land expansion , and homegrown large-scale farmers insights from Ghana", IFPRI Discussion Paper 01286, (August).

Cheung, G.W. and Lau, R.S (2008), "Testing mediation and supression effects of latent variables: bootstrapping with structural equation models", *Organizational Research Methods*, Vol. 11 No. 2, pp. 296-325.

Connolly, A.J. (2014), "A glimpse TM into the future: a lens through which to consider 'Africa's' rising", *The International Food and Agribusiness Management Review*, Vol. 17, Special Issue B, pp. 9-18.

Davidsson, P. (2016), "The field of entrepreneurship research: some significant developments", in Bogenhold, D., Bonnet, J.P., Dejardin, M. and de Lema, G.P. (Eds), *Contemporary Entrepreneurship: Multidisciplinary Perspectives on Innovation and Growth*, pp. 17-28, doi: 10.1007/978-3-319-28134-6.

Endres, A.M. and Woods, C.R. (2010), "Schumpeter's 'conduct model of the dynamic entrepreneur': scope and distinctiveness", *Journal of Evolutionary Economics*, Vol. 20 No. 4, pp. 583-607, doi: 10.1007/s00191-009-0159-3.

Field, A. (2009), *Discovering Statistics Using SPSS*, 3rd ed., Sage Publications, Los Angeles.

Foley, A. and Fahy, J. (2009), "Seeing market orientation through a capabilities lens", *European Journal of Marketing*, Vol. 43 No. 1, pp. 13-20, doi: 10.1108/03090560910923201.

Gebremedhin, B., Jemaneh, S., Hoekstra, D., Anandajayasekeram, P., Productivity, I. and Ababa, A. (2012), *A Guide to Market-Oriented Extension Services with Special Reference to Ethiopia*, Addis Ababa, Ethiopia.

Gurca, A. and Ravishankar, M.N. (2015), "A bricolage perspective on technological innovation in emerging markets", *IEEE Transactions on Engineering Management*, Vol. 1, pp. 53-66.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.A. (2010), *Multivariate Data Analysis*, 7th ed., Pearson Prentice Hall.

Hazell, P. (2013), *Comparative Study of Trends in Urbanization and Changes in Farm Size in Africa and Asia: Implications for Agricultural Research*, Independent Science and Partnership Council, CGIAR, Avenue Agropolis.

Hu L., and Bentler, M.P. (1999), "Cutoff criteria for fit Indices in covariance structure equation analysis: conventional versus new alternatives", *Structural Equation Modeling*, Vol. 6, pp. 1-55.

Jaleta, M., Gebremedhin, B. and Hoekstra, D. (2009), "Smallholder commercialization: processes , determinants and impact smallholder commercialization" (Discussion Papaer No 18).

Jayne, T.S. and Muyanga, M. (2011), "Smallholder-led agricultural commercialization: implications for CAADP country investment plans", *AAMP-GISAMA Policy Symposium*, April, Kigali, Rwanda: ACTESA/COMESA.

Kahan, D. (2008), *Economics for Farm Management Extension*, FAO, Rome.

Kahan, D. (2013), *Market-Oriented Farming: An Overview; 1 Farm Management Extension Guide*, FAO, Rome.

Kaneene, J.B., Haggblade, S. and Tschirley, D.L. (2015), "Special issue introduction: Sub-Saharan Africa's agri-food system in transition", *Journal of Agribusiness in Developing and Emerging Economies*, Vol. 5 No. 2, pp. 94-101, doi: 10.1108/JADEE-02-2015-0012.

Kassim, Z.A. and Sulaiman, M. (2011), "Market orientation and leadership styles of manaers in Malaysia", *International Journal of Leadership Studies*, Vol. 6 No. 2, pp. 230-245.

Knight, S.A. and Cross, D. (2012), "Using contextual constructs model to frame doctoral research methodology", *International Journal of Doctoral Studies*, Vol. 7, pp. 39-62.

Kodithuwakku, S.S. and Rosa, P. (2002), "The entrepreneurial process and economic success in a constrained environment", *Journal of Business Venturing*, Vol. 17, pp. 431-465.

Kohli, A. and Jaworski, B. (1990), "Market orientation: the construct, research propositions, and managerial implications", *Journal of Marketing*, Vol. 54 No. 2, pp. 1-18, doi: 10.2307/1251866.

Kohli, A.K., Jaworski, B.J. and Kumar, A. (1993), "MARKOR: measure of market orientation", *Journal of Marketing Research*, Vol. 30 No. 4, pp. 467-478, doi: 10.2307/3172691.

Lee, S.E. (2010), "The ties made in the harvest: Nicaraguan farm-worker networks in Costa Rica's agricultural exports", *Journal of Agrarian Change*, Vol. 10 No. 4, pp. 510-536.

Levi-Strauss, C (1967), *The Salvage Mind*, University of Chicago Press, Chicago.

Lynch, M., Mabaya, E., Bussiere, E. and Willigerd, M. (2014), "Bee natural Uganda: unlocking the potential of smallholder farmers in the west Nile", *The International Food and Agribusiness Management Review*, Vol. 17, Special Issue B, pp. 57-61.

Mabaya, E., Jackson, J., Ruethling, G., Marie, C. and Castle, J. (2014), "Wild fruits of Africa: commercializing natural products to improve rural livelihoods in southern Africa", *The International Food and Agribusiness Management Review*, Vol. 17, Special Issue B, pp. 69-74.

McElwee, G. (2005), *Developing Entrepreneurial Skills of Farmers SSPE-CT-2005-006500: D2: A Literature Review of Entrepreneurship in Agriculture*, University of Lincoln, Frick.

Muyanga, M., Sitko, N., Jayne, T.S. and Hichaambwa, M. (2013), "Medium scale farmer growth trajectories in Africa: implications for broad-based growth and poverty reduction", *Future Agricultures Conference on Political Economy of Agricultural Policy in Africa*, Roode Vallei Hotel, Pretoria, South Africa, March 18-20, 2013.

Na, Y.K., Kang, S. and Jeong, H.Y. (2019), "The effect of market orientation on performance of sharing economy business: focusing on marketing innovation and sustainable competitive advantage", *Sustainability*, Vol. 11, pp. 1-19, doi: 10.3390/su11030729.

Najib, M. and Kiminami, A. (2011), "Innovation, cooperation and business performance Some evidence from Indonesian small food", *Journal of Agribusiness in Developing and Emerging Economies*, Vol. 1 No. 1, pp. 75-96, doi: 10.1108/20440831111131523.

Narver, J.C. and Slater, S.F. (1990), "The effect of a market ortentatton on business profitabitity", *Journal of Marketing*, October, pp. 20-35, doi: 10.2307/1251757.

Narver, J.C., Slater, S.F. and Tietje, B. (1998), "Creating a market orientation", *Journal of Market-Focused Management*, Vol. 2 No. 3, pp. 241-255, doi: 10.1509/jmkg.70.4.37.

Omiti, J., Otieno, D., McCullogh, E. and Nyanamba, T. (2007), "Strategies to promote market-oriented smallholder agriculture in developing countries: a case of Kenya", *AAAE Conference Proceedings*, pp. 259-264.

Pearson, A.W., Carr, J.C. and Shaw, J.C. (2008), "Toward a theory of familiness: a social capital perspective", *Entrepreneurship: Theory and Practice*, Vol. 32, pp. 949-969, doi: 10.1111/j.1540-6520.2008.00265.x.

Phillimore, J., Humphries, R., Klaas, F. and Michi, K. (2016), "Bricolage: potential as a conceptual tool for understanding access to welfare in superdiverse neighbourhoods", No. 14/2016.

Pingali, P.L. and Rosegrant, M.W. (1995), "Agricultural commercialization and diversification: processes and policies", *Food Policy*, Vol. 20 No. 3, pp. 171-185.

Poole, N., Avarez, F., Penagos, N. and Vaźquez, R. (2013), "Education for all and for what? Life-skills and livelihoods in rural communities", *Journal of Agribusiness in Developing and Emerging Economies*, Vol. 3 No. 1, pp. 64-78, doi: 10.1108/20440831311321656.

Preece, S.B. (2013), "Social bricolage in arts entrepreneurship: building a jazzz society from scratch", *Artivate: A Journal of Entrepreneurship in the Arts*, Vol. 3 No. 1, pp. 23-34.

Rosairo, H. R. and Potts, D.J. (2016), "A study on entrepreneurial attitudes of upcountry vegetable farmers in Sri Lanka", *Journal of Agribusiness in Developing and Emerging Economies*, Vol. 6 No. 1, pp. 39-58, doi: 10.1108/JADEE-07-2014-0024.

Senyard, J., Baker, T. and Davidsson, P. (2009), "Entrepreneurial bricolage: towards systematic empirical testing", *Frontiers of Entrepreneurship Research*, Vol. 29 No. 5, pp. 1-14.

Senyard, J.M., Baker, T., Brunswick, N. and Steffens, P. (2010), *Entrepreneurial Bricolage and Firm Performance: Moderating Effects of Firm Change and Innovativeness QUT Digital Repository: 2010 Annual Meeting of the Academy of Management -Dare to Care: Passion and Compassion in Managemeny Practice & Research, 6-10 August 2010*, QUT Digital Repository, Montreal, Canada.

Shen, T. (2018), *When Less is More: Exploring the Antecedents of Entrepreneurial Bricolage and its Innovative Implication*, The State University of New Jersy, Newark, NJ.

Sheth, N.R. (2010), "The social context of entrepreneurship", *Journal of Entrepreneurship*, Vol. 19 No. 2, pp. 99-108, doi: 10.1177/097135571001900201.

Slater, S.F. and Narver, J.C. (1998), "Customer-led and market-oriented: let's not confuse the two", *Strategic Management Journal*, Vol. 19, (January 1997), pp. 1001-1006, doi: 10.1002/(SICI)1097-0266(199810)19:10<1001::AID-SMJ996>3.0.CO;2-4.

Stinchfield, B.T., Nelson, R.E. and Wood, M.S. (2012), "Entrepreneurial opportunities: bricolage, art, craft, engineering, and bricolage (summary)", *Entrepreneurship: Theory and Practice*, pp. 889-921, doi: 10.1111/j.1540-6520.2012.00523.x.

Sunduramurthy, C., Zheng, C., Musteen, M., Francis, J. and Rhyne, L. (2016), "Doing more with less , systematically? Bricolage and ingenieuring in successful social ventures", *Journal of World Business*, Vol. 51 No. 5, pp. 855-870, doi: 10.1016/j.jwb.2016.06.005.

Trienekens, J., van Velzen, M., Lees, N., Saunders, C. and Pascucci, S. (2018), "Governance of market-oriented fresh food value chains: export chains from New Zealand", *The International Food and Agribusiness Management Review*, Vol. 21 No. 2, pp. 249-268, doi: 10.22434/IFAMR2017.0063.

UBOS (2011), *Uganda Census of Agriculture 2008/09 at a Glance*, Kampala, Uganda.

UBOS (2014), *National Pupulation and Housing Census 2014: Main Report*, Kampala, Uganda.

Van Reenen, M.J. and Davel, J.A.H. (1989), *Farm Management: A Business Approach*, University of South Africa, Pretoria.

Van Rooyen, C.J. (2014), "Towards 2050: trends and scenarios for african agribusiness", *The International Food and Agribusiness Management Review*, Vol. 17, Special Issue B, pp. 19-39.

Vink, N., Bergh, M. and Novak, B.M. (2014), "Rooibos ltd: turning indigenous products into business opportunities", *The International Food and Agribusiness Management Review*, Vol. 17, Special Issue B, pp. 43-47.

Whetten, D.A. (1989), "What constitutes a theoretical contribution?", *Academy of Manaagement*, Vol. 14 No. 4, pp. 490-495.

Wiggins, S., Argwings-kodhek, G., Leavy, J. and Poulton, C. (2011), "Small farm commercialisation in Africa: Reviewing the issues (No. 23)", *Future Agricultures*.

Witell, L., Gebauer, H., Jaakkola, E., Hammedi, W., Patricio, L. and Perks, H. (2017), "A bricolage perspective on service innovation", *Journal of Business Research*, (March 2018), pp. 1-9, doi: 10.1016/j.jbusres.2017.03.021.

Yamane, T. (1973), *Statistics: An Introductory Analysis, 3rd ed*., Harper and Row, New York, NY.

Yaseen, A., Bryceson, K. and Mungai, A.N. (2018), "Commercialization behaviour in production agriculture: the overlooked role of market orientation", *Journal of Agribusiness in Developing and Emerging Economies*, Vol. 8 No. 3, pp. 579-602, doi: 10.1108/JADEE-07-2017-0072.

Corresponding author
Catherine Komugisha Tindiwensi can be contacted at: ctindiwensi@mubs.ac.ug