

A REVIEW OF THE ENTREPRENEURIAL BEHAVIOR OF FARMERS: AN ASIAN- AFRICAN PERSPECTIVE

Abstract

This paper is based on literature review on the subject of entrepreneurship. Specifically, the review focusses on the components of entrepreneurial behavior of farmers. The research is based on over 50 publications on entrepreneurship or related subject, the majority of which are journal and scholarly articles. The paper revealed the following components of entrepreneurial behavior possessed by farmers: innovativeness, achievement motivation, decision making ability, risk orientation, coordinating ability, information seeking behavior, self-confidence, planning ability, and cosmopolitaness. Research findings further revealed that farmers possess low, medium and high levels of these components but the majority of farmers fall under the medium level. This has been attributed to varying levels of the following factors; education level attained by the farmer, household annual income, age, marital status, land and livestock holding, farming experience, training exposure, and participation in various social and extension activities. However, research on entrepreneurial behavior has been limited to dairy, vegetable and floriculture farmers in Asia with a few examples from Africa. Future research outside Asia needs to focus on entrepreneurial behavior of smallholder farmers and how they can open market opportunities, and spur economic growth and development, especially of agro-based countries in Africa and elsewhere.

Key words: Entrepreneurship, entrepreneurial behavior, smallholder farmers

Introduction

During the 1940s and 1950s business historians pioneered the study of entrepreneurship (Jones and Wadhwani, 2006). Joseph Schumpeter and Alfred Chandler were at the fore of this research agenda. However the study of entrepreneurship ran into formidable methodological roadblocks, and attention shifted to the corporation, leaving the study of entrepreneurship fragmented and marginal (Jones and Wadhwani, 2006). Nevertheless, there has been a renewed interest on entrepreneurship globally (Al-Harrasi, Al-Zadjali, and Al-Salti, 2014). Entrepreneurship is perceived as an engine for economic growth and employment creation (Wong, Ho and Autio, 2005). It has been recognized for initiating technological change leading to socio-economic development of societies (Chaudhari, Hirevenkanagoudar, Hanchanal, Mokashi, Katharki and Banakar, 2007; Balasaravanan and Vijayadurai, 2012; Abeyrathne and Jawadana, 2014; Gamit, Durgga, Bhabhor, Tyagi, and Rathod, 2015). In most developing countries, including in Africa, entrepreneurship has the potential to unlock opportunities in agribusiness and spur economic growth and development. David (2012) argued that entrepreneurship is a requisite for farming communities if small holder farmers are to survive in an ever-changing and increasingly complex global economy. According to Jones and Wadhwani (2006), there are opportunities for advancing awareness on the historical role of culture and values on entrepreneurial behavior, using more careful methodologies than in the past, and seeking to specify the importance of

culture relative to other variables. The purpose of this paper is to identify and review the entrepreneurial behavior of farmers from literature.

Research Methodology

This paper is based on literature review on the subject of entrepreneurship. Specifically, the desk study focuses on the components of entrepreneurial behavior of farmers. The research is based on over 50 publications on entrepreneurship or related subjects, the majority of which are journal and scholarly articles.

Defining entrepreneurship and entrepreneurial behavior

Definitions of entrepreneurship differ in focus and breadth, which has also influenced its measurement. Hisrich and Peters (1989) and Asaman and Mensah (2013) defined entrepreneurship as the process of creating something new and valuable by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risk, and receiving the resulting rewards of monetary and personal satisfaction. Herron and Robinson (1993) view entrepreneurship as a set of behaviors that initiates and manages the reallocation of economic resources with the purpose of value creation. Uddin and Bose (2012) argue that entrepreneurship is the process of identifying opportunities in the market place before committing actions and necessary resources to exploit the opportunities for long term personal gain. Pihie (2009) concurs with Uddin and Bose's assertion that entrepreneurship involves discovering and assessing opportunities. Tekale, Bhalekar and Shaikh (2013) understand entrepreneurship as the capacity for innovations and caliber to introduce innovative techniques in business operations. It brings new ideas, offers individuals to enjoy self-employment, economic development, innovation, job creation, and social development (Turker and Selcuk, 2009). Caird (2013) perceives an entrepreneur as an enterprising person with a tendency of starting up managing projects and businesses. This review supports views by Herron and Robinson (1993), Uddin and Bose (2012), Tekale, Bhalekar and Shakh (2013) and Caird (2013) and defines entrepreneurship as any behavior or innovation that enables individuals to identify opportunities, devise new ideas, establish and manage businesses and earn profits.

Entrepreneurship contributes to multidimensional development in several ways viz., assembling and harnessing various inputs, bearing the risks, innovating and imitating the techniques of production to reduce the costs and increase its quality and quantity, expanding the horizons of the market, and coordinating and managing the manufacturing unit at various levels (Balasaravanan and Vijayadurai, 2012; Rathod et al., 2012; Patel, Patel, Babodia and Sharma, 2014; Chaurasiya, Babodiya, Somvanshi, Gaur, 2015; Gamit et al., 2015). According to Ijaz, Yasin and Zafar (2012), the entrepreneurial process constitutes two components, (a) *an event*, it is the implementation of new ideas, product or services; (b) *an agent*, it is the person or an individual who carries out the process of an event with responsibility. The agent is the personal characteristic that differentiates the entrepreneur from the non-entrepreneur. Personal characteristics have significant impact on entrepreneurial behavior (Guerrero, Riaalp, and Urbano, 2008).

Entrepreneurial behavior has dramatically increased in last few decades as it is a catalyst for development in many countries that have emerging trends in their socio economic development (Zain et al., 2010). The behavior of individuals as entrepreneurs can be highlighted as a major contributing factor to entrepreneurship development (Rathod et al., 2012) and has an impact on an individual's profit making (Abeyrathne and Jayawardena, 2014). Empirical evidence suggest entrepreneurial behavior as a function of the characteristics of the person and the environment (Chell, Haworth and Brearly, 1991).

Components of entrepreneurial behavior

The term entrepreneurial behavior has been operationalized as a composite skill, the resultant of mix of many qualities and traits (Patel et al., 2014; Chaurasiya et al., 2015). Entrepreneurial behavior is regarded as a function of seven components including innovativeness, achievement motivation, decision making ability, economic motivation, risk orientation, leadership ability, and cosmopoliteness (Balasaravanan and Vijayadurai, 2012; Kulkarni and Jahagirdar, 2015). Although Chaudhari et al., 2007 disregarded economic motivation and leadership ability as components for entrepreneurial behavior, the scholars added coordinating ability, planning ability, self-confidence and information seeking behavior to the rest of the entrepreneurial components revealed by Balasaravanan and Vijayadurai (2012) and Kulkarni and Jahagirdar (2015). To the nine components of entrepreneurial behavior reported by Balasaravanan and Vijayadurai (2012), Tekale et al., (2013) added profit orientation. Murali and Jamtani (2003) also reported 10 components of entrepreneurial behavior, five of which were similar to what was reported by Tekale et al., (2013) viz., innovativeness, achievement motivation, risk orientation(risk taking), self-confidence (confidence), and information seeking behavior (knowledge) and the other five components were unique viz., manageability, persuability, hope of success, persistence and feedback usage. Solanki and Soni (2004) identified 15 indicators of entrepreneurial behavior viz., decision making ability, economic motivation, knowledge of improved technology, ability to coordinate available resources, risk taking ability, ability to solve problems, credit orientation, self-confidence, scientific orientation, communication skills, experiences, market orientation, achievement motivation, perceiving opportunities, and perceiving management. There are common components of entrepreneurial behavior viz., risk orientation, achievement motivation, innovativeness, decision making ability, information seeking behavior, coordinating ability, self-confidence, cosmopoliteness, and planning ability, in order of importance. These are discussed below.

Discussing components of Entrepreneurial Behavior

Research on agricultural entrepreneurial behavior has been mostly conducted in Asia, particularly in India and Sri Lanka where the focus was on dairy and vegetable farmers. The following entrepreneurial behavior components were studied: risk-taking, achievement motivation, innovativeness, and decision making ability, information seeking behavior, coordinating ability, self-confidence, cosmopoliteness, and planning ability.

Calculated Risk-taking,

Risk- taking is defined as engagement in behaviors that are associated with some probability of undesirable results (Furby and Beyth-Marom, 1992). The ability to bear risk is a prime factor in entrepreneurial behavior (Misra and Kumar, 2000). Misra and Kumar (2000) added that an entrepreneur needs to take the right level of risks to ensure success. Although the duo did not qualify nor quantify the right level of risk, their argument points out to calculated risk or risk continuum. Caird (2013) reported that one who scores high for calculated risk taking may have the following qualities;

- Decisive, being able to act on incomplete information and good at judging when incomplete information is sufficient for action
- Self-awareness with the ability to accurately assess one's capabilities
- Analytical, being good at evaluating but attainable goals
- Effective information management using information to calculate the probability that your actions will be successful.

In a study conducted by Kumar et al. (2012) to establish the relationship between entrepreneurial behavior index and selected traits of dairy farmers in India, risk taking was ranked fourth by respondents after self-confidence, hope of success, and knowledgeability. This finding suggests that although "risk" maybe an important factor in entrepreneurship, it is not the only determinant of entrepreneurial activities. There are other traits such as self-confidence, hope of success and knowledgeability, which influences entrepreneurship.

Another study by Ahmed et al., (2011) on entrepreneurial characteristics of agripreneurs under the scheme of agriclinics and agribusiness centres in India, revealed that most of the respondents (59.2 percent) had medium level of risk taking ability followed by 30 percent of respondents who had high level while 10.8 percent had low level of risk taking ability. A similar trend was reported by Bhagyalaxmi, Rao and Sudarshanreddy (2003); Suresh (2004); Rathod, Nikam, Landge and Hatey (2012); and Boruah, Borua, Deka, Borah (2015). Results by Ahmed et al. (2011) were contested by Bhagyalaxmi et al. (2003); Suresh (2004); and Bheemappa, Natikar, Birradar, Mundinamani and Havaladar (2014) who found out that the majority of farmers possess medium level of risk orientation, followed by farmers with low level of risk orientation with the least proportion of farmers having high risk orientation.

Although the aforementioned scholars presented mixed results on risk orientation possessed by farmers, they all agreed that the majority of farmers had medium level of risk. Murali and Jhamtani (2003), Tyagi *et al* (2003) and Palmurugan (2006) asserted that the majority of entrepreneurs, involved in farming and allied activities possess medium level of risk taking ability. Kumar et al. (2011) attributed the medium level of risk to farmers' innovativeness, change proneness and development mindset. Kulkarni and Jahagirdar (2015) argued that risk bearing capacity of individuals depends upon personal, psychological, socio-economic characteristics such as age, land holding, and scientific orientation. The duo added that medium age, medium land holding and medium scientific orientation of farmers accounted for their medium risk orientation. Goleman (1995) added another perspective that individuals take risk when faced with tough situations.

Achievement motivation,

Achievement motivation was defined by (Heckhausen, 1967) as striving to increase or to keep as high as possible, one's own capabilities in all activities in which a standard of excellence is thought to apply and where the execution of such activities can, therefore either succeed or fail. Caird (2013) described one with high need for achievement to possess the following qualities;

- Orientation towards the future
- Reliance on own ability
- Optimistic
- Strong task orientation
- Effective time management
- Results-oriented with yourself and others
- Restlessness, driven and energetic
- Opinionated in defense of your ideas and views
- Determination to ensure your objectives are met when difficulties arise
- Responsible and persistent in pursuit of aims
- Oriented towards challenging but realistic goals
- Willingness to work long and hard when necessary to complete tasks

Research has revealed mixed results about the level of achievement motivation possessed by farmers. Chaurasiya et al., (2015), found out that the majority of the agripreneurs (70 percent) had medium level of achievement motivation, followed by 16.7 percent of the respondents who had low level of achievement motivation and 13.3 percent had high level of achievement motivation. A similar was reported by Ahmed et al., (2011); Patel et al., (2014); and Kulkarni and Jahagirdar (2015).

Tekale et al., (2013) reported a slightly different but related trend. The scholars discovered that the majority of farmers (50 percent) in Maharashtra State in India had medium level of achievement motivation, followed by 37 percent who had high level of achievement motivation, and 13 percent had low level of achievement motivation. The results were in conformity with findings by Bheemappa et al., (2014); Boruah, Borua, Deka and Borah, (2015).

Porchezhiyan et al., (2016) found out that the majority (60.8 percent) of farmers had high level of achievement motivation followed by 21.7 percent who had medium level of achievement motivation and 17.5 percent had low level of achievement motivation. The results were supported by findings by Rathod et al. (2012).

Despite wide variation in research findings, many of the above studies are in agreement that the majority of farmers had medium level achievement motivation. Annual income and economic motivation for the majority of farmer respondents might be the reason why they had medium level of achievement motivation (Gamit et al, 2015; Porchezhiyan et al., 2016). The higher the annual income a farmers earns, the higher the goals he sets for himself (Tekale et al, 2013).

Innovativeness or creative tendency

Schumpeter (1934) considered the following to best describe innovation;

- Introducing a new product or modifications brought to an existing product
- A new process of innovation in an industry
- The discovery of a new market
- developing new sources of supply with raw materials, and
- Other changes in the organization.

Caird (2013) asserted that innovativeness or creative tendency entails coming up with new ideas. She added that an innovative person is imaginative, inventive, versatile and able to draw on personal resources for projects or problem solving.

A study on the effect of entrepreneurship education on the entrepreneurial behavior of graduates in Tanzania conducted by Nyello, Kalufya, Rengua, Nsolezi and Ngirwa (2015), concluded that 67 percent had high level of creative tendency while 33 percent had low level of creative tendency. Results were contrary to the findings by several other researchers who found out that the majority (50 - over 90 percent) of dairy and rose farmers in India and Sri Lanka had medium level of innovativeness, followed by those with high level of innovativeness and farmers who had low level of innovativeness were the least (Ahmed, et al., 2011; Patel et al., 2014; Abeyrathne and Jayawardena, 2014; Boruah et al., 2015; Kulkarni and Jahagirdar, 2015; Gamit et al., 2015; Porchezhiyan, Sudharshan and Umamageswari, 2016). Conflicting research findings may be attributed to differences in respondents typology (farmers *versa vis* students) or differences in geographical location (Asia *versa vis* Africa).

According to Wanyonyi and Bwisa (2015), innovativeness of farmers is influenced by their age and marital status. Other possible reasons for medium level of innovativeness among farmers include but are not limited to education level, annual income (Tekale et al., 2013), years of farming experience, marginal and small land holding, medium level of livestock possession (Porchezhiyan et al., 2016), medium information seeking behavior and disinclination to take risk for innovative practices (Rathod et al., 2012).

Additional research on entrepreneurial behavior covering different groups of people and different continents and countries will bring confidence to the above findings and assertions.

Decision making ability,

Reason, 1990 states that decision-making is the process of selecting a logical choice from among the available options. The scholar added that when trying to make a good decision, a person must weigh the positives and negatives of each option, and consider all the alternatives.

Empirical evidence has revealed two main trends of farmer decision making ability. On one hand, research has revealed that the majority (68.3 percent) of the farmers were found to be of moderate decision making ability, followed by 17.5 percent of farmers with poor decision making and 14.2 percent of farmers had good decision making ability (Boruah et al., 2015). These results supported findings by Rathod et al. (2012), Patel et al. (2014), and Chaurasiya et al. (2015). On the other hand, Vijaykumar (2001) found out that the majority of farmers had medium decision ability, followed by high decision making ability and by low decision making ability. Vijaykumar results were later confirmed by Chaudhari et al. (2006), Ahmed et al. (2011), and Porchezhiyan et al. (2016). Albeit research has revealed lesser farmers having poor to good

decision making ability, the majority of farmers had moderate decision making ability. This is attributable to farmers' educational level, better communication behavior, annual income, and possession of medium size of land holding. Wanyonyi and Bwisa (2015) showed that there is a positive association between perception and decision making ability. Tekale et al. (2013) added that the higher the annual income a farmer earns, the higher his decision level is and the opposite is true. A direct relationship was also found between decision making ability and educational level, communication behavior, and land holding (Ahmed et al, 2011; Rathod et al, 2012; Kulkarni and Jahagirdar, 2015).

Information seeking behavior,

Information plays a significant role in daily professional and personal lives and people constantly are challenged to take charge of the information needed for work, fun and everyday decisions and tasks (Reddy S and Reddy M, 2005).

In a study done by Manivannanan and Tripathi (2007), they revealed that the majority of dairy farmers in Tamil Nadu, India, had medium level of information seeking behavior followed by those with high and low levels of information seeking behavior. These results are consistent with the findings of Boruah et al. (2015). However, on the contrary, Lawrence and Gangali (2012) had dissimilar research findings. They found out that that the majority (56 percent) of farmers had medium information seeking behavior, followed by 26 percent of farmers who had low information seeking behavior and 18 percent had high information seeking behavior. Lawrence and Gangali's findings were supported by Solanki and Soni (2004), and Patel et al. (2014).

Acheampong, Frimpong, Adu-Appiah, Asante B.O and Asante, M.D (2017) research findings were also different from the above scholars. In their study on rice farmers in Ghana, Acheampong et al. (2017) found out that the majority of respondents had high information seeking behavior and utilization which implies respondents' willingness to seek and use information for enhanced productivity.

Coordinating ability,

Coordination is the interrelation of functions, structures, and resources in an organizational context (Viinamäki 2004), which can take place at different levels (Mangham, 1986) or possess different dimensions. It involves the establishment of communication channels between people who are executing different tasks (Vanagas and Stankevic, 2014).

Research has revealed mixed results coordinating ability. Thirty seven percent of the vegetables farmers in Sri Lanka had a high coordinating ability, followed by 31.6 percent who had low coordinating ability and 31.4 percent had moderate coordinating ability (Abeyrathne and Jayawardena, 2014). These results are consistent with those of Tekale et al. (2013) who found out that the majority (55 percent) of dairy farmers in Maharashtra State in India had a high level coordinating ability, followed by 34 percent in the medium level category and 11 percent with low level of coordinating ability. Tekale et al. (2013) added that the probable reason for high followed by medium coordinating ability of dairy farmers might be due to their medium and young age, higher education and higher annual income which helped them to undertake the different dairy activities in time dimensions.

Contrary to the above findings, Patel et al. (2014) revealed that the majority (68.8 percent) of the dairy farmers had medium level of coordinating ability, followed by 16.2 percent who had high coordinating ability and 15 percent that had low level of coordinating ability. This finding agree with the findings by Chandramouli, Meti, Hirevenkangoudar and Hanchinal (2007), Chaurasiya et al. (2015), Gamit et al. (2015), and Porchezhiyan et al. (2016).

In another study by Boruah, Borua, Deka and Borah (2015), it was revealed that 64.2 percent of respondents had moderate level of coordinating ability, followed by 20 percent of respondents who had poor coordinating ability and 15.8 percent of respondents that had good coordinating ability. The findings supported results by Rathod et al, (2012). Gamit et al., (2015) posited that most of the respondents were educated up to secondary level, possessed medium herd size and had medium level of experience in dairy farming, which might have restricted their coordinating ability to a medium level.

Albeit research findings were mixed, the majority of scholars agree that the majority of farmers had medium level of coordinating ability. Solanki and Soni (2004) also reported that the majority of entrepreneurs had medium level of coordinating ability.

Self-confidence,

Self-confidence, defined as an individual's self-assessed probability of being a high type (Falk, Huffman and Sunde, 2006). According to Al-Hebaish (2012), there is relationship between general self-confidence and academic achievement. He added that a significant number of studies reported the positive correlation of self-confidence with grades in language courses.

Research has shown mixed results on farmers' self-confidence. Wankhede, Sagane and Mankar (2013) revealed that the majority of farmers had medium level of self-confidence followed by low and high levels of self-confidence. The findings are in conformity with empirical evidence reported by Murali and Jamtani (2003) and Boruah et al, (2015).

Ahmed et al., (2011) found that the majority of the respondents (69.2 percent) had medium level of self-confidence, followed by 23.3 percent under high level of self-confidence, the rest (7.5 percent) had low level of self-confidence. These findings supported results by Bhagyalaxmi et al., (2003) and agree with the findings of Chaurasiya et al., (2015).

Rathod et al. (2012) observed that 48.7 percent of respondents had high self-confidence, followed by 43.3 percent of respondents who had medium level self-confidence and 8 percent of respondents had low self-confidence. The self-confidence level in the study area was based on achievement motivation, economic motivation and decision making ability which led to confidence for gaining monetary benefits.

Porchezhiyan et al.,(2016) revealed that nearly two-third of the respondents (77.5 percent) had high level of self-confidence followed by low (15.8 percent) and medium (6.7 percent) level of self-confidence respectively. This finding is in line with the earlier reports (Chaudhari et al., 2007). High levels of achievement motivation, economic motivation and decision making ability build confidence in an individual which might be the reasons for high level of self-confidence.

Despite a wide range of research findings on this component, most researchers converges to the finding that the majority of farmers had medium self-confidence (Patel et al., 2014, Abeyrathne and Jayawardena, 2014, Gamit et al., 2015). The reason for medium level of self-confidence might be literacy level and exposure to extension services (Ahmed et al, 2011). Ahmed et al. (2011) further discovered a direct relationship between self-confidence and exposure to extension services and literacy levels as measured by the educational level. The more the number of years spent in school, the higher the farmers' confidence level.

Cosmopoliteness

According to Kulkarni and Jahagirdar (2015), cosmopoliteness is the degree to which a farmer is oriented outside his community to seek for information. Kulkani and Jahagirdar (2015) further observed that, 43.3 percent of rose growers of Dharwad district in India belonged to medium level cosmopoliteness category, followed by high (31.7 percent) and low (25 percent) cosmopoliteness respectively. Results are in line with findings by Rathod et al, (2012), Boruah et al, (2015).

Chaurasiya et al., (2015) observed that 57.5 percent of respondents had medium level of cosmopoliteness followed by 27.5 percent who had low cosmopoliteness while 15 percent of respondents possessed high level of cosmopoliteness. Similar findings were reported elsewhere (Saha et al 2003, Patel et al, 2014).

Porchezhiyan et al.,(2016) revealed that most of the respondents (80 percent) had high level of cosmopoliteness, 10.8 percent had medium level and 9.2 percent had low level of cosmopoliteness. This might be due to their better economic condition, personal interest and active participation in extension activities. This finding is in line with the previous report (Chaudhari et al, 2007) that majority of the respondents had high level of cosmopoliteness.

Overall, the majority of farmers fell under the medium category because of their medium economic motivation category and marginal land holding, leading to moderate participation in various social and extension activities (Rathod et al., 2012, Kulkarni and Jahagirdar, 2015). Cosmopolite channels are relatively more important at the knowledge stage, and localite channels are relatively more important at the persuasion stage in the innovation decision process. Possession of this trait explains the degree to which an individual conveys confidence in his own capability to complete a task or meet a challenge.

Planning ability,

Planning abilities are any skills that allow an individual to look ahead and accomplish goals or avoid emotional, financial, physical or social hardship. Chauhan and Patel (2005) revealed that the majority of the farmers had medium level planning ability, followed by high and low levels of planning ability. Results are consistent with findings by Chaudhari (2006) and Tekale et al. (2013) who added that this might be due to dairy farmers giving importance to the activities, which would help them in future.

Boruah et al., (2015) revealed that 73.3 percent of respondents had moderate level of planning ability, while 18.3 percent and 8.3 percent of respondents had poor level and good level of planning ability respectively. These results are parallel to the findings by Patel et al. (2014), and Charasiya et al. (2015).

A study by Porchezhiyan et al. (2016) showed that 44.2 percent of the respondents had low level of planning ability; whereas 39.1 percent had medium level of planning ability and 16.7 percent had high level of planning ability. These results are similar to those reported by Chaudhari et al. (2007).

Despite the conflicting results discussed above, most researchers agree that the majority of farmers had medium planning ability (Lawrence and Ganguli, 2012, Gamit et al, 2015). Low level of planning activities might be attributable to old age, low training exposure, marginal land and medium livestock holding with low level of exposure to new dairy farming practices.

Conclusion

Research on entrepreneurial behavior has been largely limited dairy farmers and a few vegetable farmers in Asia, especially in India and Sri Lanka. There are a few researches conducted on farmers in Africa and other continents. More common components of entrepreneurial behavior are innovativeness, achievement motivation, decision making ability, risk orientation, coordinating ability, information seeking behavior, self-confidence, planning ability, and cosmopolitaness. Research has revealed that albeit farmers possess low medium and high level of these components, the majority of farmers fall under the medium level. This has been attributed to varying levels of the following factors; education level attained by the farmer, household annual income, age, marital status, land and livestock holding, farming experience, training exposure, participation in various social and extension activities. Although there has been research on entrepreneurship, covering topics including entrepreneurial intentions, entrepreneurship intensity, entrepreneurial characteristics, entrepreneurial self-efficacy, and antecedents of entrepreneurial values across continents, there has been little research on entrepreneurship in agriculture globally. There is need for future research in Africa and other continents to look into the components of entrepreneurial behavior of farmers and how it unlocks opportunities for them in an ever-changing macro-economic environment. Entrepreneurial research in agriculture has the potential to trigger technological advancement, economic growth and development in African economies, the majority of which are agriculture-driven.

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569 **Connecting Statement**

570 Chapter four discussed the following components of entrepreneurial behavior from literature;
571 innovativeness, achievement motivation, decision making ability, risk orientation, coordinating
572 ability, information seeking behavior, self-confidence, planning ability, and cosmopoliteness.
573 Research findings have showed that the majority of people (farmers) had medium level of the
574 aforementioned components of entrepreneurial behavior. However, some farmers possessed high
575 or low levels of the components of entrepreneurial behavior. A wide range of research findings
576 may be attributed to differences in respondents' typology or applicable to limited geographical
577 locations. For example, research on entrepreneurial behavior has been limited to dairy, vegetable
578 and floriculture farmers in Asia, mostly Sri Lanka and India. There are few cases reported from
579 Africa, in Tanzania and yet they majority of farmers (smallholder farmers) reside in Africa.

580 Future research outside Asia needs to focus on entrepreneurial behavior of smallholder farmers
581 will bring confidence to the above findings and assertions. Smallholder farmers in Africa are
582 constrained with market access problems and have attempted to deal with their challenges by
583 forming farmer groups (collective action). Research may also focus on discovering the
584 relationship (if any) between entrepreneurial behavior of smallholder farmers and market access.
585 Taking one of the African countries as a study area, Chapter five attempts to address the
586 aforementioned research gaps.