

Entrepreneurial Culture and Performance of Smallholder Rice Processors in the Agro-geographical Zone A of Niger State, Nigeria.

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ABSTRACT

The purpose of this study is to investigate the role entrepreneurial culture plays to improve the performance of small holder rice processors in Agro-geographical Zone A of Niger State Nigeria. Small holder rice processors are not able to meet up with global standards due to their use of primitive instruments, the country's low adoption of technology and subsistence farming has both made a substantial contribution to farmer's low productivity. Creativity, innovativeness, openness to change, proactiveness and risk taking are essential entrepreneurial dimensions that can enhance productivity amongst groups or businesses. To investigate the effect of entrepreneurial culture on the performance of small holder rice processors. The study employs the survey research method, utilising questionnaires and interviews to collect data, the data will be analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Through this analysis, the study aims to generate key findings and make meaningful contribution to the body of knowledge on entrepreneurial culture. It will highlight how smallholder rice processors who work in clusters and engage in rice processing can leverage entrepreneurial culture dimensions to enhance productivity in this sector.

Keywords: Entrepreneurial culture, performance, small holder rice processors, PLS-SEM

1. INTRODUCTION

Agriculture is an everyday word, it is common globally, the food we consume links us to a wide global network of farmers, processors, dealers, food producers, retailers, and numerous other parties participating in the food supply chain. A population that is predicted to increase from 7.5 billion people today to around 10 billion by 2050 will depend on the global food system to feed them with safe and nourishing foods (Deka and Goswami, 2022.; Henriyadi et al 2022.; Neupane et al.,2022). In addition to more mouths to feed, the demand for crops, meat, fish, and dairy will increase as wages rise in developing nations. The agricultural sector globally plays a pivotal role in the economy, agriculture has been associated with the production of essential food crops (Al-Amin et al., 2021; Falola and Mukaila, 2022). Agriculture plays a vital role in Nigeria and is a major employer of labour, millions of individuals also make their living from the agro-food industry (Obialor et al., 2022; Sennuga, 2023). As a

result, agriculture is essential to ensuring both economic growth and food security. In the meantime, Nigeria's agricultural sector has encountered difficulties as a result of the farmers' low productivity due to inadequate agricultural financing, the farmers' low level of education, and their use of primitive instruments, the country's low adoption of technology and subsistence farming has both made a substantial contribution to farmer productivity (Falola and Mukaila, 2022). Most individuals in extreme poverty worldwide reside in rural areas where food processing is sometimes the most significant economic activity. Today, there are an estimated 570 million farms globally, and millions of people are employed or labour in food industries (Kimotho and Ogol 2021).

Nigeria has seen extremely low yields per hectare over the past few years as a result of shortages in the provision of inputs like seedlings and fertiliser as well as insufficient irrigation and harvesting methods, which reduce productivity and yield rates.

Inefficient agricultural practices, such as using hoes and cutlasses lower productivity because they are expensive and time-consuming. Nigeria's agricultural output has decreased in quality as a result of their failure to adopt advanced mechanised technologies; the present agricultural output is insufficient to supply all the food that the expanding population needs, widening the country's food supply and demand imbalance (Ubabudu and Bakare, 2023).

About 2 million metric tons of milled rice is produced annually in Nigeria, largely at cottages by small-scale processors and their cooperative societies (Abubakar et al., 2023). The government need to give due attention to rice processing, as the rice value chain provides a source of livelihood for a lot of Nigerians especially the smallholder rice processors who are the major players in the rice value chain (Abdullahi et al., 2020). Entrepreneurial culture is a very enduring and stable feature that is frequently passed down over generations, it is found to hold across many nations worldwide (Pocek et al.,2022).These small holder rice processors have received interventions from the Nigerian government and international organisations, some of these interventions are the Operation Feed the Nation (OFN), Agricultural Development Project (ADP), National Fadama Development Project (NFDP), Agricultural Food Security and Nutrition Strategy (AFSNS), Anchor Borrowers Programme (ABP) and International Fund for Agricultural Development-Value Chain Development Programmes (IFAD-VCDP) but yet face a lot of challenges (Kagbu et al., 2023)

2. Objectives

The aim of this study is to investigate Entrepreneurial Culture(EC) and the performance of small holder rice processors in Agro-geographical Zone A of Niger State. To achieve this, the study has the following five (5) specific objectives:

- i. Determine the effect of creativity on performance of small holder rice processors in the Agro-geographical Zone A of Niger State.
- ii. Ascertain the extent to which innovativeness affects the performance of small holder rice processors in the Agro-geographical Zone A of Niger State.
- iii. Evaluate the extent to which openness to change affects the performance of small holder rice

processors in the Agro-geographical Zone A of Niger State.

iv. To know the effect of proactiveness on the performance of small holder rice processors in the Agro-geographical Zone A of Niger State.

v. To determine the effect of risk taking on the performance of small holder rice processors in the Agro-geographical Zone A of Niger State.

3. Methods

The focus of this study is on small holder rice processors in the Agro-geographical Zone-A of Niger state, Nigeria. The geographical scope of the study will be 3 local governments from the Agro-geographical Zone A of Niger state which are Bida, Mokwa and Edati Local Government Areas. The respondents will be registered members of all the rice processing enterprises in these LGAs, 266 from Edati LGA,255 from Mokwa LGA and 185 from Bida LGA (IFAD-VCDP , 2023). In terms of variable scope, the study adopts Entrepreneurial culture (EC) as the independent variable, with five dimensions of creativity, innovativeness, openness to change, proactiveness and risk taking serving as proxies, while performance is the dependent variable with the non-financial performance proxy of productivity. As it relates to this study, methodological scope is the survey research methodology through the use of e-questionnaire for data collection. The study will adopt census-based method due to the not so large population. For this study a census sampling technique will be adopted. This is because the population size of 706 is manageable by time and resources, the population was gotten from the IFAD-VCDP, (2023). Hence, the questionnaire will be distributed to the 706 registered small scale rice processors in the selected three local government Areas in agro-geographical Zone A of Niger state, Nigeria. PLS-SEM will be used to analyse the data

4. Literature review

Culture

Culture has been recognised as important in explaining differentiation in the economic success of nations (Leff 1979; Pocek et al, 2022). Because such cultures value innovation and creativity, the culture that the entrepreneur creates is crucial (Danish et al., 2019). Therefore defining the elements that characterise a national entrepreneurial culture is a challenging task, since there are many different

factors that may contribute to the overall emergence of a culture that nurtures and favours the creation of new ventures. Here we will focus on two set of values that are often associated to the culture of entrepreneurship: the values of creativity, innovation and risk taking on the one hand and the value of individualistic action and individual responsibility on the other hand (Pocek, 2022). The role of entrepreneurial culture is widely acknowledged as fundamental to the development of innovation (Villena-Manzanares *et al.*, 2018).

Entrepreneurial Culture (EC)

Entrepreneurial culture is a concept that has been an area of interest recently; EC is viewed by Hanson *et al.* (2019) as a system of common values, customs, beliefs, guidelines and assumption held collectively within an organisation or community. It is said to be the attitude, values, skills and strength of people working in an organisation or community to make money (Danish *et al.*, 2019). "EC is defined as from creating a culture to a culture of creation" (Prasetyo, 2019). The 3rd definition by Prasetyo (2019) defines EC as intended to be a call for the development of entrepreneurial talents in the creative and cultural sectors to contribute more to economic development intellectually, pedagogically, and practically. He highlighted the importance of the cultural sector to society. In addition to the economic significance, the creative sector has outstanding social benefits, particularly through the promotion of diverse artistic mediums and the preservation of cultural heritage. Engidaw (2021) refers to "entrepreneurial culture" as the entirety of dynamic and innovative approaches and strategies used by business owners to adapt to environmental changes, as changes occur rapidly in a developing economy.

Entrepreneurial culture is the guiding behaviour of entrepreneurs that lead to superior performance according to Buccieri *et al.* (2021) resource deficiencies can be contended with by aggressively pursuing and taking advantage of distinctive capabilities. By this, performance can be driven through EC. Entrepreneurship, on the other hand, is frequently associated with human attributes such as creativity, innovative thinking, imagination, patience, tolerance, proactiveness, and opportunism as a change agent (Adeyeye *et al.*, 2019).

The heart of entrepreneurial culture is about seizing new opportunities, taking chances and developing

new ideas, along with innovation, creativity and risk taking. Entrepreneurial culture entails a lot of sharing and team work, innovation and creativity, spirit of initiatives, risk taking, innovative capacity (Formica, 2020; Munyoro and Phiri, 2020). These studies look at entrepreneurial culture in the same light as the main dimensions are highlighted.

In this work, we define the entrepreneurial culture as one that encourages a dynamic and creative place to work, fostering individual initiative, autonomy and a participatory decision making. For a long time, entrepreneurship has been considered a critical factor in gauging socioeconomic growth of states and regions within a state, indicative of a country's overall economic posture (Chabani, 2021). Our position is in line with those authors who suggest the existence of a positive link between EC and performance.

Antecedents of EC

The antecedents of entrepreneurial culture frequently interact and influence one another, resulting in a dynamic environment that either promotes or inhibits entrepreneurial culture. The interaction of these elements is critical in determining individuals' and organisations' attitudes and behaviours towards entrepreneurship (Donaldson, 2021).

Individual characteristics such as emotional intelligence, self-efficacy, and personality qualities are examples of antecedents of entrepreneurial culture. According to research, higher extroversion, conscientiousness, and openness scores, as well as lower agreeableness and neuroticism scores, are positively associated with entrepreneurial culture, Entrepreneurship is undertaken by individuals who sincerely feel they have discovered a unique answer to an unmet demand. Furthermore, cultural values have been proven to influence entrepreneurial behaviour, and different locations or cultures are likely to have distinct elements influencing entrepreneurial aspirations (Canestrino *et al.*, 2020).

Societal ideals that recognise and value entrepreneurial successes help to shape an entrepreneurial culture. Recognising and appreciating entrepreneurial initiatives fosters a good atmosphere for budding entrepreneurs (Abrarul Haq *et al.*, 2021). The availability and accessibility of new technologies can help entrepreneurs overcome entrance restrictions. A technologically advanced environment fosters

innovation and entrepreneurship (Igwé et al., 2020). As a result, a combination of individual factors, cultural norms, technologies and personal attitudes might function as antecedents to entrepreneurial culture (Nuseir et al., 2020)

Importance of EC

Creativity and original ideas are fostered in entrepreneurial cultures, risk-taking is projected, failure is tolerated, learning is promoted, product, process, and administrative innovations are championed, and continuous change is considered as a source of possibilities (Adeyeye et al., 2019). Entrepreneurs must constantly learn new skills and expertise in order to manage the hurdles of beginning and growing a firm. This culture of constant learning adds to a society's overall growth of human capital (Hanson et al., 2019).

A more proactive, risk-taking, and opportunity-seeking mindset might result from an entrepreneurial culture. This cultural shift has the potential to influence not only company practices, but also society attitudes towards change and innovation (Roy et al., 2019). Some scholars of entrepreneurial culture who have focused solely on the characteristics of entrepreneurship believe that while many businesses appear to be local and small, they also involve such bodies that are mostly practiced in their domain and rely solely on their local channels for start-ups and growth (Buccieri et al., 2020).

In conclusion, an entrepreneurial culture is critical for driving economic development, promoting innovation, and establishing a dynamic and resilient business environment. It is critical in moulding individuals', organisations', and society' attitudes towards embracing change, taking chances, and finding possibilities for growth and progress (Prasetyo, 2019).

The dimensions of EC are discussed below:

Creativity: Creativity as described by Danish et al. (2019) is the ability to generate fresh and useful ideas in every situation. Creativity in agriculture refers to using creative problem-solving and inventive thinking to increase productivity, sustainability, and resilience in the face of a variety of obstacles. In order to progress the agricultural sector, individual farmers, researchers, legislators, and industry players can all contribute to this

ingenuity. Creating an environment that values and promotes the discovery of new ideas, fosters curiosity, and allows for some risk-taking is part of encouraging and developing creativity. It is a dynamic and ever-changing element of human cognition that can be developed and portrayed in a variety of ways (Prasetyo, 2019).

Innovativeness: innovation is the primary reason for starting a business enterprise, the motivation to start a business could be the opportunity to innovate or introduce a new technology, but the most common reason is innovativeness as stated by Shane, Kolvareid and Westhead, (1991): Danish et al., (2019) in The heart of entrepreneurship is innovation and it is the launch of a new product, procedure, market, raw material source, or organisational structure (Adeyeye, 2016). Scholars have traditionally emphasised intense innovativeness as a key driver of new Venture performance, this is because innovativeness is characterised by disruption and discovery to produce cutting-edge product designs (Buccieri et al., 2019). When contemplating entrepreneurial culture in an organisation, firm or business, one of the most crucial components for the growth and success of such an enterprise is innovation (Danish et al., 2020). Innovativeness helps business start-ups chase prospects because it also helps them advance their situations on the lookout and work on the quality and quantity of their things and administrations.

Entrepreneurial culture has been argued to be a powerful force within organisations that can enhance employees' innovative abilities, fuel a desire for firm growth, provide opportunities to fail and try again, encourage a wide range of new ideas and experimentation, and develop organisational learning abilities with a market focus. Entrepreneurial culture centred on innovation is critical in this period of high competitiveness, leaving organisations with no choice but to be entrepreneurial or die (Adeyeye et al., 2019). If businesses must survive, grow and make profit, the culture of innovation is important and an innovator can be a successful entrepreneur because they introduce new technologies into already existing structures and produce new ideas (Carland, 1984; Danish et al., 2019)

Openness to change: openness to change could indicate that an organisation or a community has the (1) willingness to support the change, and (2)

positive attitude towards the possible effects of the change. Therefore, "the essential primary condition for successful planned change" is a firm's receptiveness to changes that are being planned (Danish et al., 2019). Openness to change as explained in the Schwartz theory has two motivators, self-direction (independent thought and action, choosing, creating, exploring) and stimulation (excitement, novelty and challenge in life). Openness to change and willingness to adjust is one challenge faced by small holder enterprises (Moon et al., 2020). Innovative thinking has been crucial in drawing public attention at the local government level, and it gives rational arguments for local government programmes (Rachmawati and Permana, 2015).

Proactiveness: Proactivity is a fantastic opportunity attitude that includes releasing cutting-edge goods and competitive services in the market as well as managing the expectation of potential demand to bring about change and influence the community. Instead of only reacting to future events as they happen, proactivity is the ability to plan for and adapt to new goods and services (Al-Mamary and Alshallaqi, 2022). Proactiveness is willingness to show consistent desire to take initiative when faced with diverse circumstances, they bring up innovative solutions to challenges or situations (Păunescu, 2024).

Risk taking: is a very essential tool in entrepreneurship, Risk is the arbitrary likelihood of a major breakdown, potential financial loss, or any unfavourable natural occurrence while engaging in an activity or working. Risk is a personality attribute that affects how people view entrepreneurship (Al-Mamary and Alshallaqi, 2022). Weather risk is one of the integrated kinds of risk in the agricultural sector (Lomovskykh et al., 2021). There are risks in agriculture everywhere, and managing them can be challenging. Divergent views on the definition of risk and the appropriate methods for measuring it are one cause of these challenges, Uncertainty about the variables influencing the returns on agricultural production inputs gives rise to risks in the agricultural sector (Tigre and Heshmati, 2023). The farmers in developing countries are risk averse, a lot cannot be said about their risk preference because Farmers have different risk-taking behaviours, risk-averse farmers choose input levels based on the mean and variation of outputs, which is different from risk-takers' and risk-neutral farmers' ideal input

levels. Anis *et al.*, (2020) discussed risk-taking as an individual's or organisation's inclination to engage in daring actions such as entering an unknown new institution or dedicating a big amount of resources to endeavours with unclear consequences.

Performance

The term performance first appeared in the 1950s, when it was used alongside efficiency. Later, in the 1960s and 1970s, performance became associated with institutionalisation, productivity, and conformity (Charles and Ochieng, 2023). The performance of the agro-business sector will eventually have a great effect on food security and nutritional outcome, the performance of the agro sector can be measured using some criteria such as key performance indicators (KPI) (Omololu and Nwafor 2018). The performance of the rice processing sector will eventually have a great effect on food security and nutritional outcome as the performance is affected by several factors such as the business operation, level of financial literacy of employees to help the minimise loss and maximise profit, the synergy among the employees, that is team work spirit which can give them a competitive edge over other enterprises through providing better product and services to customers (Olomola and Nwafor 2018; Idowu 2023; Fasiha et al 2024). By emphasising "new combinations" of forces of production that contribute to technological advancement, Schumpeter's (1934) works gave credence to the concept of entrepreneurship. (Orakwue and Ignisi, 2020)

Productivity measures include value-added per worker, crop yield per acre, and total output divided by total input. Productivity is fundamentally a ratio of economic output (or set of outputs) to economic input (or set of inputs). Productivity increases means that more output is obtained from the same or fewer inputs. Improved productivity in the agriculture sector are crucial for economic and employment development, however the thinking on how they interact is still evolving. Early economic development scholars ignored the prospect of intra-sector productivity gains, focusing solely on employment transformation, and saw agriculture as providing a deep pool of cheap labour that would need to flow into more productive manufacturing and service sectors as soon as they could begin developing (Jayne *et al.*, 2021). Productivity is the

relationship between the output of a manufacturing or service system and the input utilised to generate that product. Productivity is seen as the relationship between outcomes and the time required to obtain them (Adoga *et al.*, 2024).

Rice processing in Nigeria

Although it is regarded as a cash crop for farmers, rice is one of the most popular staple foods and a significant grain in Nigeria, making it one of the most lucrative types of farming. The nation consumes over 7 million tons of rice annually. Nigeria is the largest producer of rice in Africa, producing about 8,435,000 tonnes annually, followed by Egypt, Madagascar, Tanzania and Mali according to the Food and Agriculture Organisation of the United Nations (FAO, 2022).

There are two types of rice processing operations: primary and secondary. While the latter just involves rice milling and packaging, the former involves paddy parboiling, which also includes soaking, steaming, and drying. Because the vitamins and minerals in the kernels are maintained, parboiling adds value to rice and improves the nutritional value. Parboiling repairs rice cracks, reducing breakage and increasing milling yields, it also modifies the cooking properties of milled rice and confers protection against pest insects that prey on it during storage (Abubakar *et al.*, 2023). The restriction on rice imports drove up the cost of imported rice, attracting Nigerians' attention to locally produced rice (Obiora *et al.*, 2023). Utilising contemporary inputs is a widespread practice in agricultural product processing nowadays in order to boost productivity. But the majority of smallholder farmers in underdeveloped nations cannot afford these expensive and modern inputs because they are not always available (Tigre and Heshmati, 2023).

The review by Abubakar *et al.*, (2023) stated that, there have been conventional techniques for preparing rice before more advanced ones appeared. Traditionally, the technique involves pounding in the dirt with a pestle, rubbing on the floor, beating with clubs, and threading under people's feet or animal hooves. The updated procedure makes use of contemporary equipment and methods for processing rice, such as false bottom technology for cleaning and parboiling. The methods are as follows: milling (de-husking, de-bran), drying (tempering and drying in the sun), and de-stoning (removal of stones, rocks, pebbles, and

sands). Considering the critical role these rice farmers play in improving their rice processing skills to ensuring food supply and food security for Nigeria and especially Niger State. As seen in the study by (Chinwe and Anthony, 2023). In Nigeria, where there is intense competition, SMEs that adopt an entrepreneurial culture are better positioned to accomplish economic development and enhance the success of their agro- enterprises.

Conceptual framework

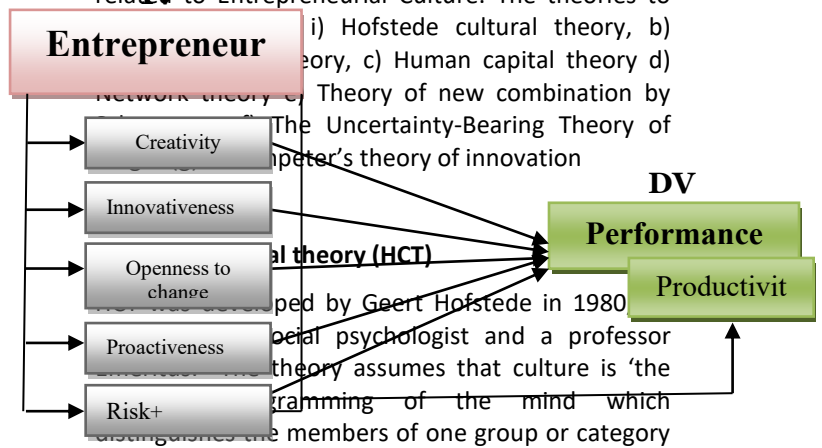
Based on the researcher's review on entrepreneurial culture, creativity, innovativeness, openness to change, proactiveness and risk taking are very enduring and stable features and it is an operational procedure in order to remain competitive on a worldwide scale. The objective of this research is to examine the effect of entrepreneurial culture on the performance of small holder rice processor in the agro-geographical zone A of Niger state. Entrepreneurial culture (creativity, innovativeness, openness to change, proactiveness and risk taking) being the independent variable and performance (productivity) is being the dependent variable.

Figure 1: Conceptual framework

Source: researcher's review (2025)

Theoretical framework

This section of the study discusses five main theories related to Entrepreneurial Culture. The theories to be discussed are: a) Hofstede cultural theory, b) Human Capital Theory, c) Human Capital Theory, d) Theory of new combination by Schumpeter's theory of innovation, e) The Uncertainty-Bearing Theory of Schumpeter's theory of innovation. The Uncertainty-Bearing Theory of Schumpeter's theory of innovation was developed by Geert Hofstede in 1980. Geert Hofstede is a social psychologist and a professor of cross-cultural management. His theory assumes that culture is 'the programming of the mind which distinguishes the members of one group or category'.



of people from another' (Roessger et al., 2020). He identified four cultural dimensions for classifying countries: individualism/collectivism 'the degree to which a population prefers to act as individuals rather than as members of a group' power distance 'the extent to which a society accepts the fact that power in institutions and organisations is distributed unequally' uncertainty avoidance 'the extent to which a society feels threatened by uncertain and ambiguous situations' and masculinity-femininity 'the extent to which the dominant values in society are 'masculine' that is, assertiveness, the acquisition of money and things'. Hofstede Later went ahead to add a fifth dimension called the long-term orientation, which describes the extent to which a culture values future-oriented aims. Recently before his death in 2020, he added a sixth dimension, indulgence, which describes the degree to which a culture values the free expression of human desires over their regulation by social norms. The HCT developed by Geert Hofstede, states there are cultural differences in EC, but there is a framework used to understand the differences in culture across countries and to discern the ways that business is done across different, He is best known for developing one of the earliest and most popular framework for measuring cultural dimensions in a global perspective (Roopchund, 2021). Culture consists of the unwritten rules of the social game. It is *the collective programming of the mind that distinguishes the members of one group or category of people from others'* (Hofstede, 2011). At the same time, Hofstede strived to avoid over-socialised social anthropology, he added that he is not insinuating that people are programmed the way computers are but people's behaviour is only partially predetermined by their cultural values (Hofstede and Minkov, 2010).

Despite the popularity of Hofstede's model, some critics have argued that his conceptualisation of culture and the impact on people's behaviour might be incorrect. The most cited criticism of his work is by Professor Brenden McSweeney (Royal Holloway, University of London and Stockholm University), who argues that Hofstede's claims about the role of national culture indicates too much determinism that might be linked to fundamental flaws in his methodology. However, although Hofstede dimensions are important, nonetheless Suddle et al. (2010) argue that Hofstede did not really spell out clearly the correlation between entrepreneurship and culture in these dimensions.

While the Hofstede dimensions are conceptually attractive and are available for a large number of countries, they reflect general cultural characteristics and have not been developed to rank societies/organisations in terms of their specific entrepreneurial culture (Suddle et al., 2010).

Endogenous growth theory

Paul Romer and Robert Lucas are the two notable economists that developed this theory in the late 1980s. This theory highlights the impact of internal forces on economic growth, including human capital investment, innovation, and public sector involvement. According to endogenous growth theory, economic growth is impacted by both exogenous and endogenous variables, including government policies and interventions (Shen *et al.*, 2021; Rijalet *et al.*, 2023). The EG theory suits studies that involve economic growth and public sector development strategies, endogenous growth theory. According to Chandra and Chandra, 2022 endogenous growth happens as a result of internal factors rather than external forces. It can also be regarded of as growth caused by the activity of economic agents in the system.

The government has the ability to influence the determinants of economic growth through appropriate policies and actions (Rijal *et al.*, 2023). Productivity in agriculture can be analysed using the endogenous growth theory, this theory posits that knowledge and innovation are key drivers of productivity growth; it states that policies that promote education, research and development enhance productivity. Sefa *et al.*, (2021) in his work done in Ghana, used this theory to analyse factors of agricultural productivity, it was found that research and development, education, access to credit facilities drives productivity in the agricultural sector.

Social learning theory (Bandura's theory)

This theory was developed by Albert Bandura (1977), he showed how self-efficacy, or confidence in one's own talents, influences people's choices, their level of effort, and their feelings when executing certain tasks. Additionally, Bandura found that learning happens through social modeling as well as through these beliefs. This led to the development of social cognitive theory (1986), which maintains that an individual's behaviour, cognition, and environment all interact to determine their functioning rather

than any one of those factors taking centre stage. This theory emphasised that observation, modeling and imitating the behaviour, attitude and emotional reaction of others is important. Albert Bandura's theory emphasises that the attitudes, skills and behaviours of people are learnt through observation, imitation and modeling of others within the same social environment. It says that learning is not purely behavioural, but occurs through the interaction of cognitive, behavioural and environmental influences this concept is known as the reciprocal determinism.

This Social learning theory has valuable insight into how individuals acquire new knowledge without direct experience, it is not without criticism, it is criticised for underestimating individual agency and contextual factors, such as socio-economic limitations, access to resources, and structural barriers that affect learning outcomes. Furthermore, it often assumes that observation opportunities and positive role models are equally available to all learners, which may not hold true in rural or resource-constrained environments (Amsari et al., 2024). This theory can be used to understand how farmers and processors adopt new technologies in their processing methods, or sustainable practices by observing peers, extension officers, or cooperative leaders. For example, when one processor successfully adopts improved milling or parboiling techniques, others in the community may imitate this behavior after seeing the benefits. However, the effectiveness of this learning process is often limited by socio-economic constraints such as inadequate access to equipment, training, or market that prevent imitation from translating into practice.

So, while Bandura's theory helps explain the diffusion of innovation among smallholder rice processors, it must be complemented by an understanding of the structural and contextual realities that shape learning and behavior in rural agricultural systems.

Empirical review

Three different dimensions of the relationship between entrepreneurial culture and entrepreneurship-friendly policies were explored by (Pocek et al., 2022). First, they investigated which sorts of entrepreneurship policies cater to a broad population as opposed to a specific population of prospective beneficiaries, these policies that cater for a broad population are more likely to have an impact on entrepreneurial culture. Second, they

examined how public policies on entrepreneurship impact many aspects that have historically been connected to entrepreneurial culture, such as the widespread acceptance of creativity, innovation and risk. Thirdly, they examined whether the influence of entrepreneurship policies on culture is greater in environments where an established entrepreneurial culture already exists as opposed to nations where the cultural background is weaker. Pocek et al., 2022 examined the relationship between entrepreneurship policies and entrepreneurial culture for a group of 36 OECD nations from the years 2002 to 2014 using data on entrepreneurial culture and entrepreneurship-friendly policies gathered by the Global Entrepreneurship Monitor (GEM) database along with a wide range of other data sources at the country level, other factors that could affect EC such as levels of corruption, income per capita, level of unemployment and effective implementation of government policies. We adjust for a wide range of additional variables, including unemployment rates, per capita income, general levels of corruption, and the efficacy of governmental policies, that are also expected to have an impact on entrepreneurial culture. Since data was collected from different countries, the fixed effect panel estimator was used and the dimensions of entrepreneurial culture used are creativity, risk taking and innovation. The study found a positive relationship between GDP and entrepreneurial culture and found a moderate relationship between unemployment and entrepreneurial culture. Government support and policies, taxes and bureaucracy are associated with positive increase of entrepreneurial culture.

A study on the effect of entrepreneurial culture on innovation in a negative business environment" the case of Greece done by Falaras and Moschidis (2022). The study proposed a model to find out the effect of entrepreneurial culture on innovation. Using institutional framework as a mediating factor, the study was done in the wine industry. The population of the study was wineries in Greece, questionnaires were administered to get information from respondents. The data were analysed using the partial least squares (PLS) algorithm and the SMART-PLS software because the model includes latent, the effect of entrepreneurial culture and institutional framework on innovation was examined as well as the role of institutional framework as a mediator. It was discovered that entrepreneurial culture has a statistically significant positive impact on innovation.

Here it is emphasised that success for entrepreneurs ultimately rests with them. The review contributes to the interaction between the internal and external environment as it concerns entrepreneurship and innovation.

In order to understand how quality management (QM), information technology (IT), and entrepreneurial culture (EC) interact and affect the performance of Indian small and medium-sized IT-enabled service firms (SMEs), Basu and Bhola (2022) in their article aimed to empirically model and examine these interactions, this was done through the use of higher order structural modeling to analyse both direct and indirect pathways. Cross-sectional research design was used in conjunction with a quantitative technique. Approximately 1,380 service SMEs received structured surveys by email and in-person. The proposed research model was empirically tested and the hypothesis are analysed. Confirmatory factor analysis (CFA) employing maximum likelihood estimation was used to validate the model. Additionally, the mediating effect of higher order construct is identified and tested in this study. It was found that the results show a weak manifestation of market-oriented and entrepreneurial activity and validate the role of IT and QM as mediators in the paths of IT performance and QM→EC, respectively. The findings show that IT and QM are complimentary resource elements, pointing to mutually beneficial connections between them. The importance of QM as a mediator in improving performance outcomes through IT benefits is highlighted in analyses, as is the impact of EC adoption by businesses on their performance in the dynamic and unpredictable world of today.

Performance of Agro-businesses

The review by Bahri et al 2021, to identify the determinants of the performance of the rice milling industry based on the Resources Based View (RBV) was conducted in the in Aceh Province represented by Aceh Besar District, Pidie Regency, and North Aceh Regency. The SEM-PLS method was used to analyse the data collected from farmers who had over 1 year experience in value chain, production cost and rice trading volume.

Njuguna and Wanjohi 2021, in their study “effect of business process re-engineering on performance of agro-processing firms in Nairobi city county” This study assessed how the performance of agro-processing companies in Nairobi City County was

impacted by organisational restructuring, knowledge management, information technology skills, and process monitoring. The target population for the study, which employed a descriptive research methodology, consisted of all 177 agro-processing companies in Nairobi City County that were registered with the Kenya Association of Manufacturers. The research employed a basic random sampling methodology, selecting 65 firms. The study included primary and secondary data, with primary data coming from questionnaires and secondary data coming from the companies' financial filings. A pilot study was carried out prior to the actual data collecting. The distribution of the results was properly described using descriptive statistics, and the Pearson's coefficient of correlation was utilised to quantify the degree and direction of the relationship between the variables can be measured. Tables and graphs were used as tools to communicate quantitative data. The link between the dependent and independent variables was examined using multiple regression analysis. The results of the study showed that the performance of agro-processing companies is influenced by organisational restructuring, knowledge management, information technology skills, and process monitoring taken together. The results showed that the four predictors may account for 77% of the variation in the performance of agro-processing enterprises, suggesting that other factors not included in this study could account for the remaining 23% of the difference in performance. According to the study's recommendations, agricultural processing companies should reorganise their operations to better meet their goals. The conclusions drawn from knowledge management Agro processing companies should increase their knowledge management spending in light of research showing that knowledge management increases an organisation's efficiency and preserves knowledge inside the business. Additionally, agricultural processing companies planning to implement business process reengineering ought to make investments in information technology tools and equipment and properly train their employees on how to utilise these resources to reduce operating costs, boost productivity, expedite processes, and improve the quality of products and services. Finally, the study suggested that agro processing companies periodically monitor the status of their processes by collecting and evaluating data and information in a methodical manner.

The study by Webb and Layton (2023) on creativity being a driving force for nurturing developmental skills for digital performance after the covid-19 pandemic, artists had to quickly adapt to digital modes of operation. A qualitative research approach (exploratory research) was employed and highlighted how artists used creativity to perform digitally under restrictive conditions. Creative use of digital technologies improves performance but most importantly, creativity is important as it serves as a driver for performance than technical and digital skills, that is, creativity is more important than the best technology and creativity not technology leads to performance.

This study by Nguyen *et al.* (2023) investigates the connections among organisational innovation, financial success, and the inside-out and outside-in perspectives of strategists in Vietnamese SMEs. For the study, 382 managers from all levels of Vietnamese SMEs provided the team with cross-sectional data based on the resource-based approach and the dynamic capabilities view. SMES that have been in operation for at least five years were used to ensure they survived through the covid-19 pandemic. Partial Least Squares structural equation model was used in the investigation. The study shows that organisational creativity has a favourable impact on financial success and mediates the relationship between financial performance and views. The results highlight how crucial it is for businesses to embrace an outside-in viewpoint and cultivate a creative culture in order to improve productivity and competitiveness. The significance of taking organisational creativity into account as a mediator in the relationship between strategy and financial success is further highlighted by their findings.

Loan *et al.* (2023) examine the link between factors and the business performance of women-owned small and medium-sized firms (SMEs) in Vietnam, with an emphasis on entrepreneurial orientated aspects such as innovation, risk taking, and proactiveness. A systematic questionnaire was used to collect data from 350 female entrepreneurs of small and medium enterprises in Vietnam. The partial least squares structural equation modeling approach (PLS-SEM) was used to determine the cause and effect connection between exogenous and endogenous factors. The findings indicate that business owner's ability, human resource quality, access to finance, social capital, entrepreneurial

mindset, and government policies all have a favourable influence on enterprise business success. The link between the three aspects of entrepreneurial orientation and business success is investigated. In detail, proactiveness and creativity have a favourable association, however risk-taking has a negative impact on the business performance of women-owned SMEs.

Zannah and Mahat (2024) conducted an empirical study on the impact of innovation, risk taking, and proactiveness on the success of Nigerian small and medium firms. In addition, the microfinance institute played a moderating role. 340 questionnaires were issued to the owners and managers of SMEs, and 308 were successfully returned. Entrepreneurs improve the performance of small and medium-sized businesses through innovation, risk-taking, and proactiveness. The data in the study is analysed using the descriptive statistic Pearson correlation analysis. The findings indicate a substantial and favourable association between EO (innovation, risk-taking, and proactiveness) and the performance of small and medium-sized businesses in Nigeria. The study discovered that only innovation and proactiveness were statistically significant predictors of small and medium-sized firms in Nigeria, while risk-taking was shown to be statistically insignificant. The implications of the findings and recommendations were explored in the end.

Abodunde (2025) investigated mediating role of network ties in the relationship between innovativeness, proactiveness, and SMEs performance. 305 participants completed structural questionnaires, and data was analysed using structural equation model for path analysis with STATA version 15 (PA-SEM). The findings indicated that innovative capabilities have a favourable and considerable impact on small and medium-sized firm performance. Proactiveness was also identified as an important performance driver for small and medium-sized organisations. These findings suggest that network linkages to SMEs act as a performance mediator by providing access to significant external resources, expertise, and opportunities that might help them gain a competitive advantage. Furthermore, these links reflect the impact of inventive strength and proactiveness on performance, emphasising the necessity of external relationships in achieving firm performance. According to the findings, innovativeness,

proactiveness, and network links are significant predictors of SMEs performance outcomes.

Garcia *et al.* (2025) investigate the effects of access to finance, risk taking, and entrepreneurial experience on the business performance of women-owned SMEs in Metro Manila. The study adopted a quantitative descriptive study, collecting primary data from women entrepreneurs aged 25 to 64 living in Metro Manila. The regression study found that access to capital and risks taking have a positive and substantial impact on firm performance, but entrepreneurial experience has a positive but statistically negligible influence. The study provides significant information for female entrepreneurs, allowing them to make more educated decisions and develop better company strategies. It advises policymakers on how to encourage women-owned businesses while also laying the groundwork for future research on women's entrepreneurship.

Fintan and Mbura (2025) analysed how entrepreneurial marketing factors influence the success of small and medium-sized firms (SMEs) in Tanzania's agro processing sector. By combining insights from Resource-Based Theory and Entrepreneurial Marketing Theory, the analysis focused on three essential dimensions: client intensity, value generation, and proactiveness. Data was gathered from 255 SMEs in Dares Salaam, Tanzania, and analysed using Structural Equation Modeling (Partial Least Squares SEM) and the SEMinR package. The findings show that both customer intensity and proactiveness significantly boost SME performance, implying that prioritising customer-focused operations and taking a proactive approach might lead to better results. Interestingly, the study discovered that value creation does not have a direct correlation with SME performance, highlighting the need for a more nuanced strategy in the agro-processing sector. These findings have practical significance for agro-processing SMEs seeking sustained growth and competitiveness, while also increasing the theoretical knowledge of both Resource Based Theory and Entrepreneurial Marketing Theory.

The study by Abodunde (2025) looks at how network connectivity functions as a mediator between small and medium sized enterprises (SMEs) and their performance, positivity, and innovative strength. A well structured questionnaire was used to get data from a sample of 305 participants, STATA version 15 (PA-SEM) was used for data analysis using structural

equation model. They found out that the success of small and medium-sized businesses is positively and significantly impacted by creative skills. These results demonstrate that SMEs' network connections act as a performance mediator by giving them access to crucial outside resources, expertise, and chances to strengthen their competitive edge. The influence of innovative strength on performance is formed by the relationship with external contacts in attaining corporate success. According to research, innovation is an important indicator of SMEs' performance results.

Performance is a combination of administrative and entrepreneurial attributes, the farmers are expected to possess certain attributes, that is the administrative and entrepreneurial attribute, the entrepreneurial attribute refers to the creation of a portfolio of opportunities and the discovery of ways to capitalise on them, whereas the administrative attribute is observed from the decision-making and resource allocation behaviour according to the research based view (RBV) by Penrose 1959 (Bahri *et al.*, 2021).

5. Discussion and conclusion

The study focused on examining the effect of entrepreneurial culture on the performance of small holder rice processors in the agro-geographical zone A of Niger state, Nigeria. To achieve optimum productivity amongst small holder rice processors in the zone and to overcome the challenges they face, such as the lack of appropriate technology, internal factors such as entrepreneurial issues, the processors have to embrace certain entrepreneurial skills to meet up with standard requirements and also have to engage the use of modern processing techniques through technology adoption. Challenges could be mitigated by adopting and practicing an entrepreneurial culture of innovation, creativity, openness to change and risk taking. Niger state emerged and continues to be a significant contributor to the nation's agricultural output.

The significant contribution of the study to the field of entrepreneurship would be highlighted, possible solutions to the challenges faced by these small holder processors and best practices will be shown. Additionally, the limitations of the study, suggestions for further research/study and practical advice will be offered to scholars, policy makers and all stakeholders in this study area.

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