Journal DOI: 10.36713/epra1013|SJIF Impact Factor (2021): 7.473 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 8 | Issue: 10| October 2021 -Peer-Reviewed Journal

CROWDSOURCING AND ENTREPRENEURIAL PERFORMANCE OF AGRICULTURAL BUSINESSES IN RIVERS STATE

KALIO, Okosimiema Florence[1], Prof. B. Chima Onuoha[2]

[1]*Doctoral Candidate, University of Port Harcourt Business School, University of Port Harcourt, Port Harcourt, Rivers State, Nigeria.*

[2]*Department of Management, Faculty of Management Sciences, University of Port Harcourt, Port Harcourt, Rivers State, Nigeria.*

ABSTRACT

The study crowdsourcing and entrepreneurial performance of agricultural businesses in Rivers State. This study filled a gap in literature as it has to do with crowdsourcing and entrepreneurial performance in Rivers State as there is scanty evidence that crowdsourcing has been used in influencing entrepreneurial performance. Crowdsourcing was predicted crowd wisdom and crowd creation while entrepreneurial performance was measured with product quality and service quality. The relationship between the variables was determined with four (4) research questions and four (4) hypotheses. The study used a correlational study design. The population of the study 275 top management or chief executive officers of agricultural businesses in Rivers State. The sample size of 165 was determined using Taro Yamene formula. Therefore, one hundred and sixty-five (165) copies of the questionnaire were distributed to solicit for the primary data. Bowleys proportional allocation formula was used to allocate the questionnaires. Itemizing the five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha coefficient was used in testing the reliability and only items that return alpha value of 0.7 and above were considered. The descriptive statistics of means and standard deviation were used for the univariate analysis to test the hypotheses; the spearman rank order correlation coefficient was used in analyzing the bivariate analysis. The data analysis was facilitated using Statistical Package for Social Sciences (SPSS). The findings showed that there is a significant relationship between crowdsourcing and entrepreneurial performance. The study concluded that crowdsourcing significantly influences entrepreneurial performance of agricultural businesses in Rivers State. The study contributed to knowledge by validating that there is a significant relationship between crowdsourcing significantly influence entrepreneurial performance. The study recommended that entrepreneurs should encourage Rivers State government to encourage agricultural business.

KEY WORDS: ***Crowdsourcing, entrepreneurial Performance, Crowd Creation, Crowd Wisdom, Product Quality, Service Quality***

INTRODUCTION

Advancement in technology is affecting the performance of most agricultural businesses as they do not possess the expertise to meet market demands. Shephard and Ahmed (2000) observed that around the globe, there is rapid organizational evolution as a result of growing technology introduced into the market with high customer demands and with short product life cycle. The fact that there are high customer demands is enough problem for the business as the objective of the business is to meet the demands of the customer and also make returns for the shareholders.

Oladele and Kareem (2003) submits that it is an accepted fact that having the funds to buy most of the trending equipment is not an issue but having the human expertise to operate the modern agricultural equipment is another problem in disguise. Acquiring knowledge for the operation and usage of the new equipment is a progression that affect the passe of innovation. Akande (1999) maintained that business organizations in the Nigerian agricultural sectors still lack the expertise and experience labour force to use and utilize the recent advance technology that are introduced for farming. This implies that inefficiency may set in, and they may not be able to meet the

prevailing market demand thus, they will prefer to use the previous known equipment or implements.

From the foregoing, it is clear that the major setback in the usage of advanced technology is human induced. Part of the problem is that most agricultural businesses are sole proprietors with limited managerial knowledge to meet up with the objectives of the business. Also, some of the employees also lack the capability to understand the professional demands of the trade they are plying on as they still dwell with the traditional way of doing agricultural business.

With limited time scale, it has become obvious that most sole proprietors need the assistance of professionals who have the wealth of expertise on some areas of agricultural development so that they can meet up with using easy techniques and processes that comes with advanced technology. There is need for upgrading of their products and services to meet their teeming and overwhelming customer needs. Möller et al., (2005) assumes that companies are waking up to the fact that they cannot posses all the relevant valuable information hence, they have to make use of the knowledge that is resided outside of the company boundaries through what is known as network of knowledge and technological bonds.

Johannessen and Olsen (2010) submits that from extant literature review, there are evidence that entrepreneurial companies rely on the traditional internal research and development to increase their innovation capabilities but there is a recent shift towards increasing focus on both open and customer-driven innovations from outside boundaries of the companies. Entrepreneurial firms are now depending on externally developed knowledge sources in order to generate radical innovations. This pressing need of integrating external sources of knowledge has forced many firms to shift from a closed to an open innovation model.

This is possible through leveraging on crowdsourcing where ideas and solutions are developed, produced, implemented, and commercialized. Crowdsourcing enables firms to seek for collaboration from the open environment which has capabilities in research and development. Exploring this collective expertise from diverse population is relevant to service (Sørensen et al., 2013; Mina et al., 2014; Allen et al., 2018; Piyathasanan et al., 2018) because participating actors outsource their expertise within an open environment to the benefit of the user.

There is evidence that many best global brands are actively applying crowdsourcing to tap into external creative resources in their innovation processes (King & Lakhani, 2013; Roth et al., 2015). Experienced actors make inputs for ideas, thereby representing a "voice of the customer" (Dahan & Hauser, 2002). Therefore, interaction with the crowd allows the entrepreneur to share problems with the others and get in return both need based information (i.e., what is the problem?) as well as solution-based information that guides companies in finding out what a potential new product or service should do (Von Hippel, 2005; Terwiesch & Ulrich, 2009).

However, the importance of seeking external assistance from the expertise of through crowdsourcing has been applied in several aspects of business performance such as human capital, recruitment of freelancers with a specific expertise to fulfill a certain job, test new products (Zogaj et al., 2014); and to finance products, investment projects, or entire companies (Mollick, 2014). Albeit, there are no evidence or there is scanty literature to establish the relationship between crowdsourcing and entrepreneurial performance of agricultural business. Based on this gap in literature, this study will examine the relationship between crowdsourcing and entrepreneurial performance of agricultural business in Rivers State

1.1. Statement of the Problem

Private individuals and organizations are seriously using crowdsourcing in solving problems (Chesbrough, 2011), idea development (Howe, 2008; Magnusson, 2009) and brand creation (Burmann, 2010) yet there is limited usage of crowdsourcing in facilitating innovation processes in entrepreneurial business. It has been a difficult task to encourage and introduce entrepreneurs to use both internal and external sources of innovation to generate new ideas and problem solving.

Simula et al., (2012) stated that crowdsourcing can generate knowledge that entrepreneurs can use in addressing business to business (B2B) and business to consumer (B2C) challenges. Previous study shows strong evidence that entrepreneurs tend to interact with closed contacts that provides only little additional information to the entrepreneur's beliefs during the objectification of an idea (Ruef et al., 2003). This closed information makes the entrepreneur to be limited with the customers' needs and desires as well (Zahra & Nambisan, 2012). This means that entrepreneurial businesses have not fully exploited the advantages with crowdsourcing.

Aim and Objectives of the Study

The aim of this study is to investigate the relationship between Crowdsourcing and Entrepreneurial Performance in agricultural business in Rivers State. The objectives of the study are to:

i. Assess the relationship between crowd wisdom and product innovation.

ii. Examine the relationship between crowd wisdom and service innovation.
iii. Identify the relationship between crowd creation and product innovation.
iv. Ascertain the relationship between crowd creation and service innovation.

LITERATURE REVIEW

Theoretical Framework

The term resource-based view was first introduced by Wernerfelt (1984), who theorized about the value of focusing on a firm's resources rather than its products. Wernerfelt (1984: 172) posits that a resource "meant anything which could be thought of as a strength or weakness of a given firm". According to Barney (1991: 102) "firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness".

The Resource-based theory of entrepreneurship states that social capital or social network are embedded in a larger social network structure that constitutes a significant proportion of their opportunity structure (Clausen, 2006). Shane and Eckhardt (2003: 333) says "an individual may have the ability to recognize that a given entrepreneurial opportunity exists but might lack the social connections to transform the opportunity into a business startup. It is thought that access to a larger social network might help overcome this problem".

Reynolds (1991) social network in his four stages in the sociological theory mentioned that stronger social ties to resource providers facilitate the acquisition of resources and enhance the probability of opportunity exploitation (Aldrich & Zimmers, 1986). Other researchers have suggested that it is important for nascent founders to have access to entrepreneurs in their social network, as the competence these people have represents a kind of cultural capital that nascent ventures can draw upon in order to detect opportunities (Aldrich & Cliff, 2003, Gartner *et al*., 2004., Kim *et al.*, 2003).

Becker (1975) emphasized that the human capital entrepreneurship theory has two factors which are education and experience. The knowledge gained from education and experience represents a resource that is heterogeneously distributed across individuals and in effect central to understanding differences in opportunity identification and exploitation (Anderson & Miller, 2003, Chandler & Hanks, 1998, Gartner *et al.*, 2005, Shane &Venkataraman, 2000).

Crowdsourcing can lead to sustainable competitive advantage only when used to exploit differences in strategic resources. The RBV offers a solid conceptual framework to study the complementary assets that allow firms to exploit the potential benefits of crowdsourcing. The RBV has successfully been applied to study the complementary capabilities that facilitate the implementation of information systems and the use of information technologies (IT) in organisations (Devece *et al.*, 2017; Wade & Hulland, 2004). The same approach can be used to study crowdsourcing because crowdsourcing is based on Web 2.0, which helps collective knowledge sharing and innovation.

1.2. Crowdsourcing

The concept of crowdsourcing is a complex phenomenon and has no globally accepted definition. Howe coined the term "crowdsourcing" in Wired Magazine in 2006 and suggested a definition crowdsourcing, indicating how the defined work of an individual within an organization or a corporate team was assigned to an undefined and large community of people in form of an open call (Howe, 2006a: 6). The use of the term open call process made crowdsourcing to be related to other common business practices because the open call process overlaps with open innovation in innovation literature (Chesbrough, 2006) and open source in computer science literature (Daniel, Agarwal, & Stewart, 2013; Roberts, Hann, & Slaughter, 2006).

Howbeit, crowdsourcing differs significantly from such business practices like reverse auction, request for quotes (RFQ), or request for bidding (RFB) in terms of task specificity and membership. Piller and Walcher (2006) argued that task specificity is the degree to which the inputs for a task are specified. Membership openness refers to the extent of filtering in the selection process of external participants (i.e., suppliers) for a particular task (Chesbrough, 2006; Lakhani et al., 2007). In reality, crowdsourcing has a high level of membership openness because each agent (i.e., individuals, teams, and/or organizations) can self-select to participate for a particular task.

By reason of the above, Howe (2009) amended his definition to explain that the act of crowdsourcing involved some type of payment or recognition to make a distinction from established peer production and stated that crowdsourcing is a compound word of crowd and outsourcing to indicate the practice of turning to a body of people (the crowd) to obtain needed knowledge, carry out specific tasks, involve online communities in solving problems. Whitla (2009: 15) also aligns by stating that "Any member of the crowd can then complete an assigned task and can be paid for their efforts in crowdsourcing".

Howe (2009) accordingly defined crowdsourcing as "the act of taking a job traditionally performed by a designated agent (usually an employee)

and outsource the task to an undefined, generally large group of people in a form of an open call". The critical underlining feature of Howe (2009) definition of crowdsourcing is that the organization outsource an internally performed function through the use of the open-call format to a large network of potential suppliers, i.e., a crowd.

In lieu of the above, Whitla (2009: 15) defined the crowdsourcing concept as the "outsourcing of activities by a firm to an online community or crowd in the form of an open call". One similar attribute of the definition is that the organization chooses to outsource task related to a large pool of talented people to complete work faster for miscellaneous areas of business, such as idea creation, product innovation and development, marketing and user-integrated support and promotion (Whitla, 2009). According to Garrigos-Simon (2012) crowdsourcing enables organizations to complete work, called tasks, faster by using the crowd than it could by using its employees. Tasks that can be accomplished through the use of crowdsourcing range from rather uncomplicated business activities to complex project scenarios (Tapscott & Williams 2006; Whitla 2009).

Estellés Arolas and González-Ladrón-de-Guevara (2012) recently attempted to create a global definition to describe any given crowdsourcing activity. They analyzed 209 related documents and found 40 original definitions for the term crowdsourcing; consequently, they extracted common elements from these definitions in order to create a single, consistent and all-inclusive definition. Estellés-Arolas and Gonz´alez-Ladr ´on-De-Guevara (2012) asserted that "crowdsourcing is a type of participative online activity in which an individual, an institution, a nonprofit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task; of variable complexity and modularity, and; in which the crowd should participate, bringing their work, money, knowledge and/or experience, always entails mutual benefit. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and use to their advantage that which the user has brought to the venture, whose form will depend on the type of activity undertaken."
The essential components of crowdsourcing are the following:

i. The use of an open call to a "crowd" (in which the level of openness is debated);
ii. A task that needs to be undertaken (solving problems or generating ideas);
iii. The fact that the compensation can be economic, social, or related to self-esteem.
iv. Involves using information technology to engage crowd

Given the multidisciplinary nature of crowdsourcing, it is difficult to define it; as there are plethora of definitions from expert literature which look at crowdsourcing from different points of view (Estellés-Arolas and González-Ladrón-de-Guevara 2012; Saxton et al. 2013; Geiger and Schader 2014; Zhao and Zhu 2014). Such examples are new idea and innovation creation (Piller & Walcher, 2006; Howe, 2008; Ebner et al., 2009; Leimeister et al., 2009; Poetz & Schreier, 2012; Stieger et al., 2012), idea evaluation and decision making (Rosen, 2011; Hossain, 2012; Blohm et al., 2016; Magnusson et al., 2016), design contests (Lampel et al., 2012), creativity (Cabiddu et al., 2013; Hossain & Kauranen, 2015), microtasking (Alonso & Mizzaro, 2012; Chandler & Kapelner, 2013), problem solving (Brabham, 2008; Chesbrough, 2003, 2011; Jeppesen & Lakhani, 2010), marketing, advertising, and brand building purposes (Burmann, 2010; Whitla, 2009), co-creation for new product development (Afuah & Tucci, 2012; Tran et al., 2012; Girotra et al., 2010; Poetz & Schreier, 2012; Zogaj et al., 2014), crowd testing (Leicht et al., 2017), crowdfunding (Mollick, 2014), or crowdwork (Durward et al., 2016).

From extant literature scholars often used various terms to describe and classify the concept of crowdsourcing; Boudreau and Lakhani (2013) classified crowdsourcing into four categories such as contests, collaborative communities, complementors, and micro tasking. Simula and Ahola (2014) also classified crowdsourcing into four categories such as internal crowdsourcing, community crowdsourcing, open crowdsourcing, and crowdsourcing via a broker. Prpic et al. Shukla, Kietzmann and McCarthy (2015) identified four types of crowdsourcing: (1) crowd voting; (2) idea crowdsourcing; (3) micro tasking and (4) solution crowdsourcing.

However, Howe (2006) had proposed four types of crowdsourcing strategies based on the focus of the applications: crowd wisdom or collective intelligence, crowd creation or user-generated content, crowd voting and crowd funding (Brabham, 2013). This researcher therefore will make use of crowd wisdom and crowd creation for this study.

Journal DOI: 10.36713/epra1013|SJIF Impact Factor (2021): 7.473 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 8 | Issue: 10| October 2021 -Peer-Reviewed Journal

Crowd Wisdom

Crowd wisdom is an aspect of crowdsourcing that depends on the wisdom of the crowd. Surowiecki (2004) opined that a qualified crowd would make wise decisions and accurate judgments with the abundant information collected by the consisting individuals. The crowd has large number of participants who shares their idea from the information you display and sought for solution. The crowd has the elements of being large and filled with diverse and abundant information but the entrepreneur has to ensure that the information from the crowd is truly comprehensive rather than duplication of the same information in diverse expressions.

Crowd wisdom makes the entrepreneur to gather information and ideas from a pool of crowd believed to be intelligent enough on the solution sought for. Crowd wisdom is a crowdsourcing approach that enables socially constructed co-creation by providing scalability, diversity, and flexibility beyond the boundaries of an entrepreneur's social network (Leimeister et al., 2009; Jeppesen & Lakhani, 2010). Mollick and Rob (201c6) opined that an entrepreneur can use crowd wisdom to co-create opportunities with potential market stakeholders and observing how consumers respond to their actions as well as giving them more flexible access to human resources or financial support. It also helps the entrepreneur to reduce uncertainty and ensuring iterative development, learning, and resource support.

Crowd wisdom has been useful to the extent that it has been remarked as a mechanism for accessing collective intelligence for the purposes of discovering new ideas which is good for entrepreneurial opportunity creation. It is the view of Surowiecki (2004) that crowd wisdom is a process of collecting ideas from a large group of participants instead of harnessing the brainpower of a few experts. Large group of experts have the potential of creating new ideas and effectively solving problem, lowering costs and shortening product development cycles (Brabham, 2008; Vukovic, 2009).

There are two underlying benefits of crowd wisdom which are error reduction and knowledge aggregation. Larrick et al., (2011) avowed that error reduction and resource/knowledge aggregation are two characteristics of crowd wisdom. Armstrong (2001) submits that error reduction is achieved as although an individual decision maker might be prone to biases and errors (such as individual entrepreneurs or mentors in our context), the principle of statistical aggregation minimizes such errors by combining multiple perspectives. This researcher therefore, supports Armstrong (2001) argument that error reduction is possibly achieved when you hear from crowd because an individual whether is an expert or not may have some biases but that the principle of statistical aggregation makes it possible to combine other opinion and minimize the level of error that may be obtained.

Ho_1: There is no significant relationship between crowd wisdom and product innovation.

1.2.1. Crowd Design

Dickie and Santos (2014) proposed that Crowd-Design refers to "an emerging modality of product development and production systems that utilize the knowledge and resources available to crowds, usually through the internet, for the purpose of solving problems and/or creating content". This opportunity is used by manufacturing companies to outsource some activities to partnering companies. In some cases, the internet has been useful to entrepreneurs as they have outsourced their designs to the crowd for quality check and for critical component process generation (Fathianathan & Panchal, 2009).

In addition to outsourcing manufacturing designs, organizations are also using crowdsourcing as a process for yielding solutions for certain products and services in both incremental and breakthrough innovations which has encouraged users (von Hippel, 2005; Bogers *et al*., 2010; *apud* Frey *et al*., 2011). The innovative platform (innonatives.com, 2016) presents a generic model of Crowd-Design process that embraces the stages that correspond to the Rozenfeld *et al*.'s (2006) PDP model.

Its Crowd-Design process starts with a problem requested by an 'owner'. This owner could be a company or an individual. The problem is displayed at a platform (online or differently) as a challenge and is shared with the crowd as an open call to contributions. During the process of sending contributions (that can be ideas, concepts and/or solutions), the crowd can comment, share information, and also vote on the proposed solutions sent in. Throughout the process, the owner can provide the participants with information in case of doubt. In the end of the process, the best solutions can be manufactured through a crowdfunding campaign, but also by marketplace or auction.

Wood and McKinley (2010) submits that the objectification stage gives the entrepreneur the opportunity to start a sense-making process to validate the viability of their conceptualized idea by gaining feedback. For this to be possible the entrepreneur must have a viable social tie. Wood and McKinley (2010) therefore suggests that an entrepreneur needs social ties of experts who has the capacity to confirm that the idea is viable to adopt or to reject the opportunity even completely. Foss et al., (2008) supports this view by stating that crowd objectification process entails the entrepreneurs having access to experienced experts

who are also capable of further evaluating and developing initial ideas.

In a situation that the entrepreneur is making use of crowdsourcing, then entrepreneur will make do with the business knowledge, technical expertise in the not enough domain of the business organization. Without access to such social resources, an entrepreneur has only little chances to reduce uncertainty and finally objectify the idea (Haynie et al., 2009). However, even if they have access to a small network of social contacts, they might face representativeness bias by relying on and generalizing from small samples rather than comprehensively surveying a huge number of experts (Fischhoff et al., 1977). Limited access to social resources can further have crucial effects on the success of the opportunity enactment as entrepreneurs tend to recruit employees or obtain funding from their individual social network (Hsu, 2004).

1.3. Entrepreneurial Performance

Van Vuuren (1997) stated that entrepreneurial performance is the achieving of set entrepreneurial goals. It means that before entrepreneurial performance will be said to have happened there must be set goals which the entrepreneur strives to meet up with base on the record time which has been set by the entrepreneur. If at the end of the period the entrepreneur checks with the goals that has been set prior to the set time and found that the goals were not attained them there is no entrepreneurial performance but in the case that what has been achieve is measurable to the goals then it is accounted that there is performance.

Entrepreneurial performance according to Ladzani and Van Vuuren (2002) is how well the firm utilizes the available opportunities to grow the business idea. By implication of the assertion, it means that entrepreneurial performance is not just about the accounting period it has to do with how well the entrepreneur used the opportunities very well. Another aspect of the definition is the idea generation which is key. Performance is measured when the entrepreneur considers drives towards making good with the opportunities that came their way. To measure entrepreneurial performance for this study the researcher made used of service innovation and product quality.

Ho_3:There is no significant relationship between crowd creation and product innovation.

Product Quality

Kotler et al., (2011) defined product quality as the characteristics of a product or service that has ability to satisfy stated or implied customer needs. By product quality references are made on those physical features that makes a product different from similar product. This difference could be identified with how the users considers the product meeting their needs. Product quality can be understood by the features of the quality as perceived by the consumers.

Ahn et al. (2004) defined product quality as the actual functionality of the product, consistency between the quality specification and real quality of the physical product. Every product has its actual features which is seen as the functional aspect of the product by design. Product quality emphasizes that the functional perspectives are characteristics which the products must have; that means that there are laid down specification for the product and it is expected that the product is consistent with that specification before the customers could count on the product as being reliable and durable. Thus, product quality is the characteristics of a product that contribute to its ability to satisfy customer needs. Firms considers the customers and benchmarking for the features of the product quality.

Product conformance according to Juran (1974) is defined as the compliance to specified standard. Before you can assess a product for compliance there must be specifications which are stated, and which must be followed in the production of the product. It is usually the firm that make those standard specifications so that they can measure their cost of production and also monitor the progress of the product as it competes with similar products in the market.

Garvin (1984, 1987) contend that product conformance is the extent to which a product's design and operating characteristics meet predetermined standards. There are characteristics which a product should meet before it can be said that the product has met conformance. These characteristics are quality performance criteria such as features, maintainability, durability, technical stability, aesthetics, and perceptions of what the product is supposed to be (Garvin,1996). Garvin (1987) further explained that the failures for conformance were as a result of defecting rate of production units or the incidence of service calls. Other measures of failures could be due to misspelled tags or bad structure that do not lead to service or repair. Howbeit, there are other existing nonconformance failures such as design, standard, specification, procedure, or requirements.

Acceptance has been used as customer acceptance, users acceptance, market acceptance and product acceptance in various fields of discipline such as computer science and business (Davis, 1989; Kollmann, 1998; Ba, Whinston & Zhang, 2003; Amberg, Fischer& Schroeder,2005; Ho & Ko, 2008; Kittl, 2009), construction projects (Krips, 2011), marketing and service sciences(Wünderlich, 2009; Pai & Yeh, 2015), psychology (Ajzen & Fishbein, 1980), education (Tinto, 1975; Simon, 2001), sociology (Lucke, 1995), and innovation science (Rogers, 2003).

Journal DOI: 10.36713/epra1013|SJIF Impact Factor (2021): 7.473 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 8 | Issue: 10| October 2021 -Peer-Reviewed Journal

Ho_2: There is no significant relationship between crowd wisdom and service innovation.

1.3.1. Service Quality

Service quality according to Parasuraman, Zeithaml and Berry (1988) is the difference between customer expectations and perceptions of service. Service quality has the aspect of customer expectation and the perception of the performance of the service being rendered. It does not just happen; it is about the judgmental assessment of the customer concerning the service. Especially as it has to do with value from the services customers are paying for.

Oliver (1997) posits that service quality is the result from customer comparisons between their expectations about the service they will use and their perceptions about the service company. Three features were highlighted from this definition, and they are that service quality is the result from customers. This means that the firm extracts information from the users of the product and use it for value judgement about their product. Service quality is about customers' expectations about the service they will use. Before the service the customers have made some prescriptions and speculations of what they think the service will be like and how they want it to be like. Finally, the definition has their perception of the service company. This is usually about the brand name and the prices of the product and the conclusion they have about using the services of the firm.

Zeithaml, Bitner and Gremler (2006) define responsiveness as willingness to help customers by providing them with quick and prompt service. This has to do with the promptness of the service delivery to customers. By promptness it means how fast and accurate can the firm provide the service for the waiting customers. According to Wilson, Zeithaml, Bitner and Gremler, (2008) responsiveness has to do with how the firm communicates to customers need by the length of time that the customers have to wait before they get assistance or attended to. The willingness of the firm to specifically respond to the problems of the customers.

Andaleeb and Conway (2006) defined reliability as the ability to perform a promised service consistently and precisely. Customers want firms to continue with the service delivery pattern that they know and prefer rather than the changes they make which might not be welcoming by the customers. Reliability is about the ability and transparency of the firm to capably handle their business relationship and transactions with their customer in a manner that is befitting to both parties. Especially when it has to do with handling customers services such as problem-solving, right-on time provision of services and keeping error-free records.

Yang and Fang (2004) posit that reliability consists of accurate order fulfillment; accurate record; accurate quote; accurate in billing; accurate calculation of commissions; keep services promise. Certain customers have records with the firm and wants the firm to keep the right and accurate records that are reliable. Emphatically, customers want to be at home with the firm that keeps records and those not manipulate their transactions to suit them. When a customer discovers some level of discrepancies in record keeping and transactions, they lose trust and commitment to the relationship. Thus, Parasuraman *et al.*, (1988) avowed that reliability is the most important factor in conventional service.

Ho_4: There is no significant relationship between crowd creation and service innovation.

2. METHODOLOGY

According to Ahiazu (2003) there are two broad research designs commonly adopted in management sciences. They are survey and case study. This study is a survey design because it only studied samples from the population and because the study is a correlational study being that it examined the relationship between crowdsourcing and entrepreneurial performance. The population of the study 275 agricultural businesses collected from the records of ministry of agriculture in Rivers State. The Taro Yamene's formula was used to determine the sample size of 163. The Bowley (1964) proportionate allocation formula was used distributing the questionnaire among the 163 respondents

The method of data collection is the questionnaire method. The questionnaire was presented to selected top managers of the various agricultural business industries in Rivers State. The questionnaire consists of nine (9) sections. The questionnaire is designed with open-ended questions, check-list questions. Additionally, the questionnaire items were gauged on five-point Likert scale (strongly agree to strongly disagree; where "strongly agree is 5 points, and strongly disagree is 1 point).

In this study face validity was conducted to ensure the validity of the items on the content is measuring the intended construct.

The qualitative data was analyzed using Spearman Rank Correlation Coefficient. The choice of the Spearman Rank Correlation Coefficient is informed by the fact that, the aim of the study is to determine the strength of the relationship between the variables (Polit & Beck, 2012). Also, the data are ordinal in nature. Data analysis was facilitated using SPSS (Statistical Package for Social Science) version 23.

Journal DOI: 10.36713/epra1013|SJIF Impact Factor (2021): 7.473 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 8 | Issue: 10| October 2021 -Peer-Reviewed Journal

DATA ANALYSIS AND DISCUSSION

Questionnaire Administration and Retrieval

Table 4.1:Administration and Retrieval of Questionnaire

	Number of Cases	Percentage
Copies of Questionnaire Administered	163	100
Copies of Questionnaire Retrieved/Returned	158	94.04
Completed but Unusable Copies of Questionnaire	8	4.76
Completed and Usable Copies of Questionnaire	150	89.28

Source: Field Work Data,2021, SPSS Result

From Table 4.1, it is observed that 163 questionnaires were administered to respondents. 158 questionnaire representing 94.04 percent were returned. However, out of this number 8 copies of questionnaire representing 4.76 percent were completed but unusable questionnaire while 150 copies of questionnaire were correctly filled and thus suitable for data analysis.

Presentation of Results on Testing of Hypotheses

We had proposed four hypotheses in chapter one to examine the relationship crowdsourcing and entrepreneurial performance.

4.4.2: Relationship between Crowd Wisdom and Product Quality

Table 4.1 Correlations Matrix for Crowd Wisdom and Product Quality

			Crowd Wisdom	Product Quality
Spearman's rho	Crowd Wisdom	Correlation Coefficient	1.000	.736**
		Sig. (2-tailed)	.	.000
		N	150	150
	Product Quality	Correlation Coefficient	.736**	1.000
		Sig. (2-tailed)	.000	.
		N	150	150

Source: Research Data August 2021 and SPSS output version 23.0

Table 4.1 illustrates the test for the two previously postulated bivariate hypothetical statements. The results show that for:

Ho$_1$: *There is no significant relationship between Crowd Wisdom and Product Quality of agricultural Business in Rivers State.*

The correlation coefficient (r) shows that there is a significant and positive relationship between crowd wisdom and product quality of agricultural business in Rivers State. The *rho* value 0.736 indicates this relationship and it is significant at p 0.000<0.05. The correlation coefficient represents a high correlation indicating a strong relationship. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between crowd wisdom and product quality of agricultural business in Rivers State.

Ho$_2$:*There is no significant relationship between leadership and top management commitment and improvisation of agricultural firms in Rivers State.*

Journal DOI: 10.36713/epra1013|SJIF Impact Factor (2021): 7.473 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 8 | Issue: 10| October 2021 -Peer-Reviewed Journal

4.4.2.2: Relationship between crowd wisdom and service quality

Table 4.2 Correlations Matrix for Crowd Wisdom and Service Quality

			Crowd Wisdom	Service Quality
Spearman's rho	Crowd Wisdom	Correlation Coefficient	1.000	.652**
		Sig. (2-tailed)	.	.000
		N	150	150
	Service Quality	Correlation Coefficient	.652**	1.000
		Sig. (2-tailed)	.000	.
		N	150	150
		N		

Source: Research Data August 2021 and SPSS output version 23.0

Table 4.2 illustrates the test for the two previously postulated bivariate hypothetical statements. The results show that for: The correlation coefficient (r) shows that there is a significant and positive relationship between crowd wisdom and service quality of agricultural business in Rivers State. The *rho* value 0.855 indicates this relationship and it is significant at p 0.000<0.05. The correlation coefficient represents a high correlation indicating a strong relationship. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between crowd wisdom and service quality of agricultural business in Rivers State.

Ho_3: *There is no significant relationship between crowd creation and product quality of agricultural business in Rivers State.*

The correlation coefficient (r) shows that there is a significant and positive relationship between crowd creation and product quality of agricultural business in Rivers State. The *rho* value 0.652 indicates this relationship and it is significant at p 0.000<0.05. The correlation coefficient represents a high correlation indicating a strong relationship. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between crowd creation and product quality of agricultural business in Rivers State.

4.4.2.3: Relationship between Customer focus and organizational resilience

Table 4. 3 Correlations Matrix for Crowd Creation and Product Quality

			Crowd Creation	Product Quality
Spearman's Rho	Crowd Creation	Correlation Coefficient	1.000	.644**
		Sig. (2-tailed)	.	.000
		N	150	150
	Product Quality	Correlation Coefficient	.644**	1.000
		Sig. (2-tailed)	.000	.
		N	150	150

Source: Research Data August 2021 and SPSS output version 23.0

Table 4.3 illustrates the test for the two previously postulated bivariate hypothetical statements. The results show that for:

Ho_4: *There is no significant relationship between* crowd creation and service quality of agricultural business in Rivers State.

The correlation coefficient (r) shows that there is a significant and positive relationship crowd creation and service quality of agricultural business in Rivers State. The rho value 0.644 indicates this relationship and it is significant at p 0.000<0.05. The correlation coefficient represents a high correlation indicating a strong relationship. Therefore, based on empirical findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between crowd creation and service quality of agricultural business in Rivers State.

5. DISCUSSION OF FINDINGS

This study using descriptive and inferential statistical methods investigated the relationship between crowdsourcing and entrepreneurial performance of agricultural business in Rivers State. The findings revealed that a significant relationship

exist between crowdsourcing and entrepreneurial performance of agricultural business in Rivers State, using the Spearman Rank Order Coefficient tool and at a 95% confidence interval. The findings of this study confirmed that crowdsourcing has an effect on entrepreneurial performance of agricultural business in Rivers State.

5.1Conclusion and Recommendations

Based on the discussion and conclusion above, the following recommendations are hereby made:

i. Management of agricultural business should make use of crowdsourcing to make it easier for the company to perform well.
ii. Management of agricultural business should develop a process of finding out the needs of customers so that they can improve performance, satisfy customers, and therefore retain them.

REFERENCES

1. *Afuah, A. & Tucci, C. L. (2012). Crowdsourcing as a solution to distant search. Academy of management review, 37(3), 355-375. http://doi:10.5465/amr.2010.0146*
2. *Akande, S. O. (1999). A study of agricultural research system of Nigeria. Nigeria Institute of Social and Economic Research (NISER) Monograph, Series No. 6.*
3. *Allen, B. J.; Chandrasekaran, D. & Basuroy, S. (2018). Design crowdsourcing: The impact on new product performance of sourcing design solutions from the "Crowd". Journal of Marketing, 82(2), 106-123. http://doi:10.1509/jm.15.0481*
4. *Alonso, O. & Mizzaro, S. (2012). Using crowdsourcing for TREC relevance assessment. Information Processing and Management, 48(6), 1053–1066.*
5. *Blohm, I.; Riedl, C.; Füller, J. &Leimeister, J. M. (2016). Rate or trade? Identifying winning ideas in open idea sourcing. Information Systems Research, 27(1), 27-48.*
6. *Brabham, D. C. (2008). Crowdsourcing as a model for problem solving: An introduction and cases. Convergence, 14(1), 75–90. https://doi. org/ 10. 1177/ 13548 56507 084420*
7. *Burmann, C. (2010). A call for user-generated branding. Journal of Brand Management, 18(1), 1-4.*
8. *Cabiddu, F.; Castriotta, M.; Di Guardo, M. C. & Floreddu, P. (2013). Open innovation and crowdsourcing communities' design: A cross case analysis. Designing Organizational Systems, 1, 143-155.*
9. *Chandler, D. & Kapelner, A. (2013). Breaking monotony with meaning: motivation in crowdsourcing markets. Journal of Economic Behavior & Organization, 90, 123–133.*
10. *Chesbrough, H. (2003). Open innovation: The new imperative for creating and profiting from technology. Harvard Business School Publication Corp.*
11. *Chesbrough, H. (2011). Foreword. In Sloane, S (Ed.), A guide to open innovation and crowdsourcing: Advice from leading experts. Kogan Page Limited.*
12. *Dahan, E. & Hauser, J. R. (2002). The virtual customer. Journal of Product Innovation Management, 19(5), 332–353.*
13. *Durward, D.; Blohm, I. & Leimeister, J. M. (2016). Crowd work. Business & Information Systems Engineering, 58(4), 281–286.*
14. *Ebner, W., Leimeister, J.M. & Krcmar, H. (2009). Community engineering for innovations: the ideas competition as a method to nurture a virtual community for innovations, Research and Development Management, 39(4), 342–356. https://doi. org/ 10. 1111/j. 1467- 9310. 2009. 00564.x*
15. *Girotra, K.; Terwiesch, C. & Ulrich, K. T. (2010). Idea generation and the quality of the best idea. Management science, 56(4), 591–605.*
16. *Hossain, M. (2012). Performance and potential of open innovation intermediaries. Procedia-Social and Behavioral Sciences, 58, 754–764.*
17. *Hossain, M.& Kauranen, I. (2015). Crowdsourcing: a systematic literature review. Strategic Outsourcing: An International Journal, 8(1), 2–22.*
18. *Howe, J. (2008). Crowdsourcing: How the power of the crowd is driving the future of business. Random House.*
19. *Jeppesen, L. B. & Lakhani, K. R. (2010). Marginality and problem-solving effectiveness in broadcast search. Organization science, 21(5), 1016-1033.*
20. *King, A. & Lakhani, K. R. (2013). Using open innovation to identify the best ideas. MIT Sloan management review, 55(1), 41-48.*
21. *Lampel, J.; Jha, P. P. & Bhalla, A. (2012). Test-driving the future: How design competitions are changing innovation. The Academy of Management Perspectives, 26(2), 71-85.*
22. *Leicht, N.; Blohm, I. & Leimeister, J. M. (2017). Leveraging the power of the crowd for software testing, IEEE Software, 34(2), 62–69.*
23. *Leimeister, J. M., Huber, M., Bretschneider, U. & Krcmar, H. (2009). Leveraging crowdsourcing: activation-supporting components for IT-based ideas competition. Journal of Management Information Systems, 26(1), 197–224. https://doi. org/10. 2753/ MIS07 42- 12222 60108*
24. *Magnusson, P. R. (2009). Exploring the contributions of involving ordinary users in ideation of technology-based services. Journal of Product Innovation Management, 26(5), 578-593.*

25. *Magnusson, P. R.; Wästlund, E. & Netz, J. (2016). Exploring users' appropriateness as a proxy for experts when screening new product/service ideas, Journal of Product Innovation Management, 33(1), 4–18. https://doi:10.1111/jpim.12251*
26. *Mina, A.; Bascavusoglu-Moreau, E. & Hughes, A. (2014). Open service innovation and the firm's search for external knowledge. Research Policy, 43(5), 853-866. http://doi:10.1016/j.respol.2013.07.004*
27. *Möller, K.; Rajala, A. & Svahn, S. (2005). Strategic business nets: Their types and management. Journal of Business Research, 58(9), 1274-1284.*
28. *Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. Journal of Business Venturing, 29(1), 1-16. http://doi:10.1016/j.jbusvent.2013.06.005*
29. *Piller, F. T. & Walcher, D. (2006). Toolkits for idea competitions: a novel method to integrate users in new product development. R&D Management, 36(3), 307-318.*
30. *Piyathasanan, B.; Mathies, C.; Patterson, P. G. & de Ruyter, K. (2018). Continued value creation in crowdsourcing from creative process engagement. Journal of Services Marketing, 32(1), 19-33. http://doi:10.1108/JSM-02-2017-0044*
31. *Poetz, M. K. & Schreier, M. (2012). The value of crowdsourcing: can users really compete with professionals in generating new product ideas? Journal of Product Innovation Management, 29(2), 245–256. http://doi:10.1111/j.1540-5885.2011.00893.x*
32. *Rosen, P. A. (2011). Crowdsourcing lessons for organizations. Journal of Decision Systems, 20(3), 309–324.*
33. *Roth, Y.; Pétavy, F. & Céré, J. (2015). The state of crowdsourcing in 2015. eYeka Analyst Report. https://en.eyeka.com/resources/reports.*
34. *Simula, H.; Töllinen, A. & Karjaluoto, H. (2012). Facilitating innovations and value cocreation in industrial B2B firms by combining digital marketing, social media and crowdsourcing. Proceedings of the 2012 Academy of Marketing Science Annual Conference, May 16–19, New Orleans, USA*
35. *Sørensen, F.; Sundbo, J. & Mattsson, J. (2013). Organisational conditions for service encounter-based innovation. Research Policy, 42(8), 1446–1456. http://doi:10.1016/j.respol.2013.04.003*
36. *Soukhoroukova, A., Spann, M.&Skiera, B. (2012). Sourcing, filtering, and evaluating new product ideas: An empirical exploration of the performance of idea markets, Journal of Product Innovation Management, 29(1), 100–112.*
37. *Stieger, D.; Matzler, K.; Chatterjee, S. & Ladstaetter-Fussenegger, F. (2012). Democratizing strategy: How crowdsourcing can be used for strategy dialogues. California Management Review, 54(4), 44–68.*
38. *Terwiesch, C. & Ulrich, K. T. (2009). Innovation tournaments: Creating and selecting exceptional opportunities. Harvard Business Press.*
39. *Tran, A.; ul Hasan, S. & Park, J. (2012). Crowd participation pattern in the phases of a product development process that utilizes crowdsourcing. Industrial Engineering & Management Systems, 11(3), 266-275.*
40. *Von Hippel, E. (2005). Democratizing innovation: The evolving phenomenon of user innovation, Journal für Betriebswirtschaft, 55(1), 63–78. https://doi.org/ 10.1007/s11301-004-0002-8*
41. *Whitla, P. (2009) Crowdsourcing and its application in marketing activities. Contemporary Management Research, 5, 15-28. https://doi.org/10.7903/cmr.1145*
42. *Zahra, S. A. & Nambisan, S. (2012). Entrepreneurship and strategic thinking in business ecosystems. Business Horizons, 55(3), 219-229. https://doi:10.1016/j.bushor.2011.12.004.*
43. *Zogaj, S.; Bretschneider, U. & Leimeister, J. M. (2014). Managing crowdsourced software testing: A case study-based insight on the challenges of a crowdsourcing intermediary. Journal of Business Economics, 84(3), 375-405.*