

THE EFFECT OF ONLINE SOCIAL INTERACTION ON ENTREPRENEURIAL OPPORTUNITY EVALUATION: A MEDIATION APPROACH

Abena Engmann *

* School of Business Leadership, University of South Africa, Gauteng, South Africa
Contact details: P. O. Box 392, UNISA, 0003, South Africa



Abstract

How to cite this paper: Engmann, A. (2021). The effect of online social interaction on entrepreneurial opportunity evaluation: A mediation approach [Special issue]. *Journal of Governance & Regulation*, 10(4), 235–247.
<https://doi.org/10.22495/jgrv10i4siart4>

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ISSN Print: 2220-9352
ISSN Online: 2306-6784

Received: 15.06.2021
Accepted: 21.10.2021

JEL Classification: D80, D81, D83, D85, O30
DOI: 10.22495/jgrv10i4siart4

Increasingly, people communicate and build networks using online social interaction. According to Packard and Bylund (2017), the advances in technology have influenced communication and processes in organizations leading to improved marketing communication and the introduction of innovations. There is also evidence of the growing use of social media among entrepreneurs (Nambisan, Wright, & Feldman, 2019; Olanrewaju, Hossain, Whiteside, & Mercieca, 2020). Despite this, little is known on how the adoption of online social interaction affects entrepreneurial opportunity evaluation. Thus, there is a need to access how this medium can be used to promote entrepreneurial activities. This empirical study used a mixed-method approach to find out if resource availability mediates the relationship between online social interaction and opportunity evaluation. It used a survey and in-depth interviews to collect data from young entrepreneurs in Ghana. A sample of 383 and 13 entrepreneurs was selected through simple random sampling technique and snowballing technique for quantitative and qualitative components respectively. SPSS was used to evaluate the quantitative data and analyzed with STATA. Nvivo was used for the qualitative data analysis. The study found that online social interaction via social media was not just a source for needed resources to help entrepreneurs in better evaluation of entrepreneurial opportunities but also used as a resource itself. This study is vital as it provides entrepreneurs with knowledge on where to obtain the resources needed to be able to evaluate potential opportunities.

Keywords: Online Social Interaction, Mediation, Social Capital, Opportunity Evaluation, Social Media, Resource Availability

Authors' individual contribution: The Author is responsible for all the contributions to the paper according to CRediT (Contributor Roles Taxonomy) standards.

Declaration of conflicting interests: The Author declares that there is no conflict of interest.

Acknowledgements: This research was funded with a bursary received from the University of South Africa.

1. INTRODUCTION

Entrepreneurship centres on the creation or discovery of opportunities that would yield incomes (Shane & Venkataraman, 2000). There is a large body of literature on entrepreneurship that explains

the entrepreneurial process of identification, interpretation, evaluation, and exploitation (Baron & Ensley, 2006; Cornelissen & Clarke, 2010; Autio, Dahlander, & Frederiksen, 2013; Grégoire, Barr, & Shepherd, 2010; Tang, Kacmar, & Busenitz, 2012). These studies concentrated on how individual

attributes and their cognitive abilities recognize potential opportunities and interpret them as being potential opportunities either for themselves (1st person opportunities) or for someone else (3rd person opportunities). However, identified opportunities need to go through evaluations and modifications (Dimov, 2007; Shepherd, 2015) before eventually being exploited. Opportunity evaluation is vital in the entrepreneurship process because an individual sets up a venture only if the identified opportunity is worth pursuing (Wood & McKelvie, 2015). The process of opportunity evaluation can be considered as the bridge between opportunity recognition and exploitation.

Opportunity evaluation, however, has been less studied than other components of the entrepreneurial process (Wood & McKelvie, 2015). Some studies that have been done on factors influencing the opportunity evaluation process include that on uncertainty by McKelvie, Haynie, and Gustavsson (2011) and Marks and Batev (2021), idiosyncratic dispositions by Valliere (2013) and emotions researched by Foo (2011). Others include prior knowledge (Haynie, Shepherd, & McMullen, 2009), values (Shepherd, Patzelt, & Baron, 2013), role identity (Mathias & Williams, 2017), and the impact of feedback received from family (Mbaraonye, Hanna, & Titus, 2021). It is however possible that social interaction can affect all the factors enumerated above. We know for instance that social interaction using social media can reduce uncertainty through access to a large amount of information (Keh, Foo, & Lim, 2002).

In opportunity evaluation, there is a variety of other individuals involved in the process who are also expected to give a positive evaluation. The socially embedded attribute shows that potential entrepreneurs do not think or act alone but are engaged in an active process of information exchange with a community. An entrepreneur's community is usually referred to as social networks. Aside from the provision of resources, social networks have varied influences on entrepreneurial opportunity evaluation and action through the provision of various kinds of information (Autio et al., 2013). Social interaction creates the opportunity for individuals to create networks. One way of interaction is through social media. There is globally growing evidence of an increase in online social interactions (Poushter, 2016; Song, 2015) and the use of social media by entrepreneurs (Fischer & Reuber, 2011). In this era of new digital technologies, organizations are relying all the time more on contributions from people outside the organization, who are either isolated and dispersed or are in communities to innovate (Dobusch & Kapeller, 2018). There is growing evidence on the use of social media among entrepreneurs (Fischer & Reuber, 2011; Dey, Sarma, Sarpong, Kumari, & Punjaisri, 2017; Zafar, Shafiq, Kousar, Yousaf, & Hasir, 2017; Nambisan et al., 2019; Olanrewaju et al., 2020).

Engmann and Ngwakwe (2021) used a moderation approach to contribute to the opportunity evaluation literature by investigating if the use of online social interaction during the opportunity evaluation process is dependent on the decision-making logic the entrepreneur uses. They found that the use of online social interaction is not dependent on

whether the entrepreneur uses causation or effectuation. Their study also indicated the use of online social interaction helps entrepreneurs to build networks and obtain resources required to evaluate opportunities. Building on Engmann and Ngwakwe's (2021) findings, this study sought to use a mediation approach to investigate if the process of opportunity evaluation is impacted by online social interaction via social media with resource availability playing a mediating role.

This paper is organized as follows. Following this introduction, Section 2 of the paper presents the literature review, which comprises the theoretical foundation of the study and empirical review as well as sets the hypothesis of the study. This is followed by Section 3 presenting methodology and analysis, and then Section 4 providing the results. Section 5 discusses the results of the study and Section 6 draws the conclusion, limitations, and recommendations for future research.

2. LITERATURE REVIEW

2.1. Theoretical foundation of the study

2.1.1. Social capital theory

Social capital is derived from social networks. Social capital, a neo-classical theory, is an investment in social relations with expected return (Lin, 2001). It is a social asset consisting of the actors' associations and resources in a network, accessed through individuals engaging in interactions and networking. Social capital is entrenched in social networks and social relations, purposively accessed by individuals. These networks are largely formed offline but with the growth in the use of the Internet, these networks are also being formed online via social media. Individuals invest in social relations to enhance expected returns for their actions. The theory of social capital has however not been without controversies. Even though some scholars perceive social capital from the societal-group stage or the relational stage, they all agree to the interpretation that, it is the interaction of actors that makes the maintenance and replication of social capital possible (Lin, 1999, 2001). This theory explains how entrepreneurs have access to resources that they would need throughout the entrepreneurial process which otherwise would not have been accessible to them. Social capital theory is the ability of individuals to extract resources from their networks through social interaction (McKeever, Anderson, & Jack, 2014). This aids them in taking vital decisions.

2.1.2. Resource-based view (RBV)

In considering whether a potential opportunity should be pursued or not, firms would evaluate the resources, i.e., both tangible and intangible, that they have available to them to be able to profitably exploit the potential opportunity. The fundamentals of the study of entrepreneurship are identifying and exploiting valuable opportunities (Shane & Venkataraman, 2000) and hence the resource-based view (RBV) can be applied in explaining how entrepreneurs would evaluate potential opportunities.

The RBV of the firm assumes that firms that possess resources that are heterogeneous and are not perfectly mobile across firms in an industry are able to identify how to gain sustained competitive advantage (Barney, 1991). It is used to explain differences in the firm's performance over time (Hoopes, Madsen, & Walker, 2003) which are not attributed to differences in the industry condition but the firm (Peteraf, 1993). The RBV studies the link between a company's internal characteristics, i.e., resources and abilities and its performance against its competitors within the same industry. Barney (1991) classified the resources into three categories, i.e., physical capital resources (e.g., plant and equipment, location), human capital resources (e.g., training, experience), and organizational capital resources (e.g., internal structures and systems). These resources of the firm are seen as heterogeneous and immobile across firms in an industry and affect the firm's strategic progress although not all resources are strategically relevant at a point in time. Relevant resources must be valuable, rare, imperfectly imitable, and cannot have substitutes that are equally strategically relevant (Barney, 1991).

A resource is of value when it enables a company to identify or implement strategies that exploit opportunities efficiently and effectively or neutralize threats. A resource is rare when it is not possessed by many firms and imperfectly imitable resources have no strategically equivalent resource, i.e., cannot be substituted (Barney, 1991).

However, Peteraf (1993) stresses the point that for resources to be immobile they must be specialized to the firm's specific needs and that the conditions of resources are not completely independent but are related. According to Peteraf (1993), external opportunities need to be matched to the firm's internal resources in order to have a sustained competitive advantage

2.2. Empirical review

Ideas go through a dynamic non-linear process of refinement as entrepreneurs engage in information seeking and value exchange with other social actors (Dimov, 2007; Braun, Ferreira, Schmidt, & Sydow, 2017) and thus opportunities are the results of the successful combination of various actions towards pursuing a goal or motive (Conger, McMullen, Bergman, & York, 2018). Not only are social actors engaged to help shape opportunities but to let the entrepreneur gain legitimacy (Conger et al., 2018; Dimov, 2007). An opportunity is the outcome of the continuous development and modification of an idea (Dimov, 2007; Davidsson & Honig, 2003). Before an opportunity emerges, it must have been an idea and only becomes an opportunity after it has been ascertained that it has commercial viability and the ability to generate profits. Dimov (2007) describes opportunity development as a social learning process that affects the entrepreneur's knowledge during the development of the idea into the opportunity.

Entrepreneurs start out by assessing their capacities. In other words, an entrepreneur has to evaluate if he has all the necessary resources available because, although an individual may recognize himself or herself as having strong abilities to pursue entrepreneurship, these abilities

may not be enough to ensure the creation of a successful venture (Esfandiar, Sharifi-Tehrani, Pratt, & Altinay, 2019). It is the entrepreneur's assessment, by exploring the various combinations of available resources that would most likely succeed in generating the desired innovation (Leyden, Link, & Siegel, 2014). Yet nascent entrepreneurs are usually resource-constrained (Yu, Hao, Ahlstrom, Si, & Liang, 2014; Rasmussen, Mosey, & Wright, 2015) and lack the required competencies to be able to make valuable decisions such as evaluating an opportunity. The evaluation procedure is affected by the ability of the entrepreneur to combine effectively and efficiently existing resources profitably and by how much new resources can be related to existing ones (Haynie et al., 2009). Generally, opportunities are seen as more attractive when they are related to the individual's human capital, i.e., knowledge, skills, and abilities implying that specific human capital is vital in opportunity evaluation (Haynie et al., 2009). However needed human capital can be acquired from networks (Yu et al., 2014) bringing to the fore the possibility of evaluating ideas and opportunities differently. They may stand to benefit from collective abilities (Esfandiar et al., 2019). Knowing that these abilities of others exist may influence entrepreneurial intentionality (Esfandiar et al., 2019) and hence the evaluation of potential opportunities. The bigger the network, the bigger the knowledge base leading to varied interpretations that the idea can be subjected to. Braun et al. (2017) suggest that the focus of entrepreneurship should go beyond the individual (the leader), entrepreneurial teams and move in the direction of entrepreneurial organizations embedded in networks of inter-organizational relationships to exploit innovation and creativity.

A substantial amount of research has been done on social interaction and its advantages in other fields such as health (Fiorillo & Sabatini, 2011) and the advantages that it has. The level and quality of social interaction have proven to determine the level of benefits a person derives from it including access to information and improvement to individuals' health. In their study, Xu and Saxton (2019) found that the social networking process and information search is complicated for first-time mothers and that being able to link up with other mothers both in-person and online, at any time provided exceptional support that most thought they could not have obtained from any other source. The challenges of a first-time mother can be related to a nascent entrepreneur as they also give birth to new opportunities to pursue.

Advances in technology have significantly influenced processes in organizations including communication (Packard & Bylund, 2017). It is widely known that these advances in communication technology have improved marketing communication and with it an avenue for the more rapid introduction of innovations unto the market, thereby generating profits quicker (Packard & Bylund, 2017). It would, however, be interesting to know how communication technology has affected other processes in organizations such as opportunity evaluation.

Identification of opportunities is seen as an individual cognitive process with social resources occasionally playing a supporting role (Shepherd,

2015). For instance, Amazon's new strategy of doing deliveries at night was done after realizing that most people are not at home in the daytime and this was most likely decided on after receiving feedback from society. However, what is missing is information on how Amazon's new idea changed that is how this feedback from stakeholders led to the idea undergoing several changes before finally being implemented.

With the increase in the usage of both the Internet and social media worldwide, it is important to know how this medium can be used to promote entrepreneurial activities and in turn promote economic development. It is also imperative to recognize that entrepreneurs having access to resources needed online and can change the way opportunities are evaluated. Again it is not only immediately available resources that play a role in opportunity evaluation but better evaluation processes can also be identified and their use encouraged by young entrepreneurs.

It must be noted that there are trust issues in the use of information sourced from social media. We trust knowledge and resources because it was recommended by someone we know but although social media has the ability to give recommendations, trust is more disposed to the things we share in common with a partner, for instance, a farmer may trust more if the knowledge comes from other farmers than if it was given by a research center and this may not create diversity in innovation (Hitchen, Nylund, Ferras, & Mussons, 2017). Park et al. (2017) indicated that the use of social media did not help entrepreneurs in identifying or creating opportunities mainly since there were issues of trusting whatever information was received via social media.

Networking is an entrepreneurial action and is beneficial for the formation and transformation of entrepreneurial ideas (Engel, Kaandorp, & Elfring, 2017). Research in other fields such as education has proven that well-designed online discussion results in increased interaction thereby improving academic performance (Zheng & Warschauer, 2015). Austin, Devin, and Sullivan (2012) in their paper pointed out that innovators deliberately engage in social interaction seeking out not only opportunities but also to encounter them. Sometimes seemingly, "normal" interactions between the entrepreneur and others have the potential of creating extreme outcomes (Crawford, McKelvey, & Lichtenstein, 2014). The power of such interactions may be so significant (Tasselli, Kilduff, & Menges, 2015) and cause individuals to make an update to evaluations they have previously made (Greenberg, 2021). Arnaboldi Azzone, and Sidorova (2017) found in their empirical study that actors interested in interacting with outsiders sped up the decision-making cycle.

2.3. The effect of online social interaction on opportunity evaluation mediated by resource availability

As mentioned in the RBV, human capital is one of the resources that a firm possesses which can help it gain sustained competitive advantage. Human capital has also been shown to be of distinct importance to entrepreneurship. Although some entrepreneurs have similar education and experience, the knowledge and skills they possess are different. Skills are required to function

effectively. However, an entrepreneur may not possess all the skills, knowledge, and abilities to pursue a potential opportunity and may thus rely on others to be able to do so. This is referred to as social capital. Baron and Markman (2003) differentiate social skills from social capital, indicating that entrepreneurs can get to know of an opportunity through social capital, but once such access is reached, entrepreneur's social skills influence the outcomes they experience. In effect, the skills and resources that the entrepreneur does not have can be obtained from social capital and could influence their evaluation of identified opportunities. This study seeks to determine whether the relationship between online social interaction and opportunity evaluation is influenced by resource availability. The researcher thus hypothesizes that:

H1: Online social interaction has an indirect effect on opportunity evaluation through resource availability.

3. METHOD AND ANALYSIS

3.1. Study design and target population

This study aimed to examine if resource availability mediates the relationship between online social interaction and the process of opportunity evaluation and to have a better understanding of the type of resources available. Although, to do this both quantitative cross-sectional survey design and qualitative in-depth interview were employed in data gathering to help achieve the study objective, a longitudinal study could also have been undertaken to measure the effect of online social interaction over a period. The total population from which the sample was chosen was 918 nascent entrepreneurs in Ghana who have operated for less than 5 years and have been registered at Social Enterprise Ghana (SEG) and the National Entrepreneurship and Innovation Programme (NEIP).

3.2. Sample size calculation

Using the population of 918, the minimum sample size of 275 was determined using the Yamane formula $n = N / (1 + N(e)^2)$ for the quantitative component of the study. The margin of error (0.05) for the confidence interval of 95%. A total of 383 responses were analyzed.

For the qualitative component, the sample size was determined by the data saturation, which was assumed to occur after interviewing 20 key informants. However, after conducting interviews with 13 key informants, the same information was being repeated by different participants. At this point, data saturation was achieved and information from 13 key informants was used for the qualitative analysis.

3.3. Sampling technique

Participants for the quantitative study were selected using simple random sampling, to ensure an equal chance of selection thereby also avoiding any researcher selection bias. The use of a simple random sampling technique requires the availability of a sampling frame. As such, a list of young nascent entrepreneurs was obtained from the SEG and

the NEIP to form the sampling frame from which study respondents were randomly selected using a computer-assisted program.

With regards to the qualitative component of the study, key informants were selected using the snowballing approach. With the snowball sampling approach, the researcher initially contacted a small group of people who were appropriate to the study and who then helped the researcher to establish contacts with others (Bryman, 2012). This was to ensure that participants selected were able to provide information that best informs the research questions and reflects the impact of online social interaction on opportunity evaluation.

3.4. Study variables

The definition and measurement of the study variables opportunity evaluation, the outcome variable and social interaction, one of the independent variables, were adapted from Engmann and Ngwakwe (2021).

Resource availability (RA)

Resource availability is the second independent variable and has been classified by Barney (1991) into three categories. These are physical capital resources (e.g., plant and equipment, location), human capital resources (e.g., training, experience, judgment, intelligence), and organizational capital resources (e.g., internal structures and systems). These resources of the firm are seen as heterogeneous and immobile across firms in an industry and affect the firm's strategic progress although not all resources are strategically relevant at a particular point in time. Six Likert-scale questions were used to assess resource availability. The scores are rated from 1 to 5, with 1 being the lowest score (Not at all) and 5 being the highest (Always). The overall average score was estimated as the measure. The scale from Hughes, Eggers, Kraus, and Hughes (2015) guided the item development for this construct.

Extraneous factors

Other factors such as competition, technical capacities, and offline social interaction are identified to have an influence on the mediation of resource availability on the interaction between social interaction and opportunity evaluation. These variables influence the interaction and as such will influence the effect of resource availability. Therefore, these factors were controlled for in data analysis such that the actual effect of resource availability can be determined.

3.5. Data collection tool

The data collection tool for the gathering of quantitative data was a questionnaire with close-ended questions and responses based on a 5-point unipolar Likert scale. After the development of the questionnaire, a pre-test of the tool was undertaken to understand the relevance of the questions and how questions asked can help answer study objectives. After the initial pre-test of the study tool and the feedback incorporated, the revised questionnaire was sent to six entrepreneurial and scale development experts for their input. Another pre-test of the tool was done to ensure that the questionnaire was valid and reliable.

For qualitative data, interviews were conducted with a semi-structured interview guide where the questions and order of presentation were determined but the questions were opened-ended. This was to allow the gathering of as much information as possible regarding online interactive activities of entrepreneurs, opportunity evaluation, and resource availability context.

3.6. Data collection process

The data collection process is described below.

Survey administration

The location of respondents was widespread across the country and thus questionnaires were administered to respondents via telephone by research assistants who had been trained for the in-depth understanding of the study. Using Computer-Assisted Personal Interviewing (CAPI) on mobile phone devices data collection was done over four weeks to minimize data entry errors and immediately saved on dropbox in real-time.

In-depth interview

An interview guide was designed and used to collect qualitative data from 13 of the young nascent entrepreneurs in Ghana. The in-depth interview was conducted by the researcher through telephone with permission obtained from participants to audio record the interview. Audios were later transcribed for analysis.

3.7. Data analysis

The quantitative data was evaluated with SPSS and then transferred to STATA for analysis. To establish the trend and distribution of the study variables, descriptive statistical analysis was done. This included the computation of means, standard deviations, and percentages. Exploratory factor analysis was carried out to confirm unidimensional scales. The Cronbach's alpha coefficient was performed to assess the internal consistency or reliability of the adapted tools for measuring the constructs of opportunity evaluation and online social interaction. Further, statistical analysis including the structural equation model was carried out. The structural equation model is a combination of factor analysis and multiple regression analysis to access the structural relationship between variables.

The data gathered using the interview guide were audio-recorded and transcribed using Microsoft word. The thematic analysis approach was used to analyze the transcriptions. Firstly, thorough reading and re-reading enabled the identification of codes from the transcripts. These codes were used to develop a codebook, which in turn was then used to sort and categorize all data. The transcripts were imported into NVivo software version 11 and the codebook was used as nodes. The imported transcripts were studied line-by-line and relevant quotes were selected for coding under appropriate nodes. The themes and sub-themes that were developed from this process led to the formation of tentative linkages between concepts and data. The narrative was then written using all the information gathered through the analysis and supported by illustrative quotes from the respondents. This strategy aided in the explanation of the relationship between online social interaction and opportunity evaluation.

4. RESULTS

4.1. Background characteristics of entrepreneurs

4.1.1. Survey participants

A total of 383 participants responded to the questionnaire administered to them through the telephone. Eighty (80) percent of the participants were males. The average age of all the participants was 33.83 ± 7.03 (SD) years. More than 50% of the respondents had a first-degree while about 10% had post-graduate degrees and less than 1% had no formal education. Most of the entrepreneurs were in the service industry and agricultural business, with only about 5% in education and health. Approximately 95% of respondents were on social media with WhatsApp users being most popular followed by Facebook. Out of this 95% of social media users, 30% were on Twitter.

4.1.2. In-depth interview participants

Key informant interviews were conducted among 13 entrepreneurs. Qualitative data collection stopped at this point because saturation had been reached. Saturation is a point where the interviewer notices that there is no new information being gathered in relation to the research question (Lowe, Norris, Farris, & Babbage, 2018). In this study, there were 6 males and 7 females from various sectors of the economy such as agricultural technologies and agricultural processing, entertainment, real estate, fashion, event management, and planning. All these entrepreneurs used at least 3 social media applications with the most used being Facebook, Instagram, Twitter, and LinkedIn. They all had higher education. The summary of the demographics of respondents is shown in Table 1.

Table 1. Background characteristics of qualitative respondents

	<i>Gender</i>	<i>Sector</i>	<i>Social media</i>	<i>Educational qualification</i>
Male	6			
Female	7			
Energy		1		
Information technology		1		
Agricultural technologies/processing		3		
Education		1		
Entertainment/event management		2		
Fashion/creative arts		3		
Real estate		1		
Food		1		
Facebook			11	
Twitter			9	
Instagram			10	
LinkedIn			5	
WhatsApp			5	
YouTube			1	
1st degree				12
Master's degree				1

4.2. Opportunity evaluation

In their research, Engmann and Ngwakwe (2021) find that an overwhelming majority (84.3%) of respondents indicated that searching for new ideas for a product was a very enjoyable or extremely enjoyable activity to undertake. In terms of motivation to improve on their existing product, 58.22% of the participants were extremely motivated to do so while about one-third (33.16%) were very motivated to improve on their product. Further, 48.56% of the participants indicated that the product they initially imagined is not significantly different from their current product. However, a little of a third (34.36%) had a completely different product from what they initially presumed. The results also as indicated in Table 2 revealed that participants have made changes and slight adjustments to their business model. For instance, a little over 40% of the participants (41.49%) had made major changes while only 17.49% have made extreme major changes to their business model. The result further revealed that some participants have adjusted their business model and not a complete change of the business model. The adjustment is considered to affect the areas of business such as price and product design. In this regard, 34.99% of the participants have made slight adjustments. In terms of seeking the view of participants on the process of opportunity development, the majority (52.22%)

indicated that the process of opportunity development is increasing over the period.

Data was collected to assess the level of changes made by entrepreneurs as a result of feedback from both investors and customers; more than 60% had made significant changes while a little over 30% had made minor changes.

Measuring the influence of factors influencing the initial business models of entrepreneurs, Engmann and Ngwakwe (2021) revealed that 50% indicated the influence of speaking with potential customers as 70% while speaking to potential investors was 40%. The influence of interacting with family and friends, the use of social media, and desk research were at 60% by 50% of the participants. The highest influence on the business model was customer feedback at 80%, social media influence was at 70% by 50% of the participants.

4.3. Online social interaction

Concerning online social interaction, Engmann and Ngwakwe (2021) found that a majority of the respondents (63.9%) were really excited to use online social interaction to scan for new opportunities and to use it as the medium for exchanging information with others. A third of the participants use online social interaction to obtain a significant amount of vital information about the needs of their customers and current

trends. A little over 70% of participants indicated that their online contacts were vital to the success of their business.

4.4. Resource availability (RA)

In evaluating both the participants' ability to obtain financial resources through social interaction and having financial resources obtained from online social interaction, both questions had more than half of the participants saying they did not at all or rarely did. The responses for being able to obtain it represented 81.8% and responses for having it available was 71.4%. This was in contrast to the ability

to obtain information and having substantial access to information. A fourth of the participants (45.4%) are able to almost always or always obtain information via online social interaction and 1 out of every 3 (34.4%) has access to information at their discretion due to online social interaction. A quarter of the participants (25%) are almost always or almost always able to obtain human capital from online social interaction and about 2 out of every 10 participants (22.5%) almost always or always have substantial human capital obtained via online social interaction at their discretion for supporting strategic initiatives. Summarized details can be found in Table 2.

Table 2. Responses to resource availability

Resource availability	Mean ± SD	Not at all	Rarely	Sometimes	Almost always	Always
		n (%)	n (%)	n (%)	n (%)	n (%)
I am able to obtain financial resources on short notice to support new strategic initiatives from online social interaction.	1.64 ± 0.97	225 (61.98)	72 (19.83)	39 (10.74)	24 (6.61)	3 (0.83)
I have substantial financial resources at my discretion for funding strategic initiatives obtained via online social interaction.	1.81 ± 1.04	203 (55.92)	56 (15.43)	76 (20.94)	25 (6.89)	3 (0.83)
I am able to obtain information on short notice to support new strategic initiatives from online social interaction.	3.25 ± 1.21	58 (15.98)	30 (8.26)	110 (30.3)	128 (35.26)	37 (10.19)
I have substantial access to information obtained via online social interaction at my discretion for making decisions on strategic initiatives.	3.04 ± 1.14	55 (15.15)	33 (9.09)	150 (41.32)	93 (25.62)	32 (8.82)
I am able to obtain human capital on short notice to support new strategic initiatives from online social interaction.	2.37 ± 1.34	152 (41.87)	37 (10.19)	80 (22.04)	75 (20.66)	19 (5.23)
I have substantial human capital obtained via online social interaction at my discretion for supporting strategic initiatives.	2.28 ± 1.31	161 (44.35)	37 (10.19)	83 (22.87)	66 (18.18)	16 (4.41)

4.5. Control factors

Most participants' (83%) market assessment of the strong competition in their markets was high/very high. The extent to which participants' customers constantly looked for new products was high/very high was more than half (68%). For 7 out of 10 (70%) participants, in order to stay in the markets, they needed to often update technology

in order to remain competitive. Half of the participants (50.8%) investment in research and development was high/very high. Eight (8) out of 10 participants were highly/very highly engaged in in-person interaction to solve problems (79%), exchange information with and learn from others (84.6%) and exchange ideas to analyze and solve problems in person (81.9%). Table 3 gives a summary of the findings.

Table 3. Responses to control factors

Control factors	Not at all	Very little	Somewhat	High	Very high
	n (%)	n (%)	n (%)	n (%)	n (%)
Our market is characterized by strong competition.	10 (2.61)	26 (6.79)	29 (7.57)	116 (30.29)	202 (52.74)
Customers constantly look for new product/service.	36 (9.4)	41 (10.7)	45 (11.75)	141 (36.81)	120 (31.33)
Products and services become old very fast in our market.	103 (26.89)	91 (23.76)	58 (15.14)	93 (24.28)	38 (9.92)
In our market, you must often update technology in order to stay in the market.	38 (9.92)	38 (9.92)	38 (9.92)	143 (37.34)	126 (32.9)
The technology that our business is based on is not subject to large changes.	87 (22.72)	109 (28.46)	66 (17.23)	86 (22.45)	35 (9.14)
We invest heavily in R&D.	60 (15.67)	67 (17.49)	61 (15.93)	135 (35.25)	60 (15.67)
I almost always solve problems constructively.	5 (1.31)	23 (6.01)	51 (13.32)	159 (41.51)	145 (37.86)
I exchange information with others and learn from others in person.	9 (2.35)	18 (4.7)	31 (8.09)	163 (42.56)	162 (42.3)
I exchange ideas with others to analyze and solve problems in person.	9 (2.35)	21 (5.48)	39 (10.18)	160 (41.78)	154 (40.21)

Table 4. Mean and standard deviation for control factors

Variable	Mean	Standard deviation
<i>Competition</i>		
Our market is characterized by strong competition.	4.24	1.03
Customers constantly look for new product/service.	3.70	1.27
Products and services become old very fast in our market.	2.67	1.36
Overall	3.53	0.91
<i>Technology distinctiveness</i>		
In our market, you must often update technology in order to stay in the market.	3.73	1.29
The technology that our business is based on, is not subject to large changes.	2.67	1.30
We invest heavily in R&D.	3.18	1.32
Overall	3.19	0.81
<i>Offline social interaction</i>		
I almost always solve problems constructively with others in person.	4.09	0.93
I exchange information with others and learn from others in person.	4.18	0.93
I exchange ideas with others to analyze and solve problems.	4.12	0.96
Overall	4.13	0.83

4.6. Mediation analysis

A mediation analysis was done to assess if the effect of online social interaction is mediated by resource availability. In assessing the mediational effect of resources, the model showed a significant effect of resource availability on the relationship between social interaction and entrepreneurs’ opportunity evaluation with an average causal mediation effect of 0.35 (p < 0.001). The total effect of social interaction on opportunity evaluation was 0.54.

These effects were statistically significant at p < 0.05. After controlling for *competition*, *technology distinctiveness*, and *offline social interaction*, although the effects were reduced, they were still statistically significant. From the models without controls, the mediation effect explains 55.4% of the total variation in the opportunity evaluation while that of the one with controls explains 24.5% of the total variation in the opportunity evaluation. This is shown in Table 5 below and in Figures 1 and 2.

Table 5. The effect of online social interaction on entrepreneurs’ opportunity evaluation using resource availability as a mediator

	Without controls			With controls*		
	β	95% CI	p-value	β	95% CI	p-value
<i>Direct effect</i>						
RA	0.35	0.24-0.46	< 0.001	0.34	0.23-0.45	< 0.001
SI	0.32	0.22-0.41	< 0.001	0.25	0.15-0.35	< 0.001
<i>Indirect effect</i>						
SI	0.22	0.15-0.29	< 0.001	0.21	0.14-0.29	< 0.001
<i>Total effect</i>						
RA	0.35	0.24-0.46	< 0.001	0.34	0.23-0.45	< 0.001
SI	0.54	0.46-0.61	< 0.001	0.46	0.38-0.54	< 0.001
R-squared		55.38%			24.45%	
AIC		2372.73			4998.09	
BIC		2399.99			5056.51	
Log likelihood		-1179.36			-2484.05	
LR test of model vs. saturated		$X^2 = 0.00, p\text{-value} < 0.001$			$X^2 = 5.89, p\text{-value} = 0.117$	

Notes: β : coefficient of structural equation model, CI: confidence interval, * adjusting for control variables (competition, technological capabilities, and offline social interaction).

Figure 1. Mediation analysis of the effect of online social interaction on opportunity evaluation using resource availability as a mediator

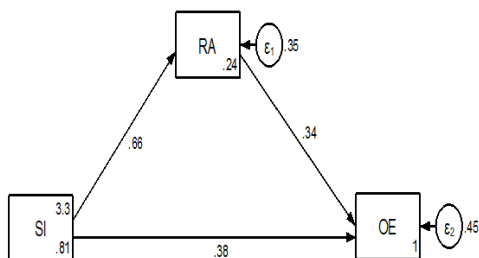
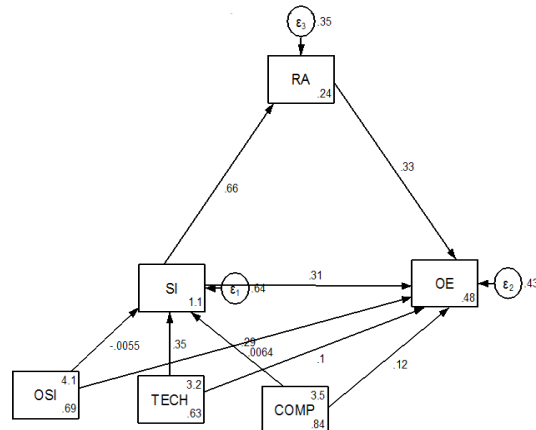


Figure 2. Mediation analysis of the effect of online social interaction on opportunity evaluation using resource availability as a mediator with control factors



The qualitative part of the study was to gain an in-depth understanding of the results of the quantitative analysis. The qualitative results reveal that the use of social media provides entrepreneurs, the ability to gain access to required potential resources, as demonstrated by respondents who reported having obtained a variety of resources from online social interaction. These resources include information, financial resources, and human capital.

"... it also creates an opportunity for people to also interact with us whereas in the other forms it is just a one-way conversation like if I place an advert in the newspaper, it takes a while to get feedback from a potential customer. However, with social media any potential customer is able to send you questions at that very moment you place the advert and you have the opportunity to respond, and you don't have this opportunity with other services. The print media is not real-time but social media is in real-time and it forms part of the backbone of our communications" (Respondent E).

"So the information that we get from social media is to inform our designs, we will see how people see us and how they are consuming coffee around the world from Australia to the USA, to Ghana to South Africa, we borrow a lot of ideas to see from people's Instagram post about coffee shops they have visited and we see how it is designed and how they are serving the coffee. So, from the design point of view, utilization of social media is high, from a market point of view it is high, and sales are rated high..." (Respondent JT).

"You know I cannot do these alone and I have used people and social media to raise funds and resources and when most people see that what you are doing is authentic, then they are likely to follow up. So, social media has played a great role" (Respondent G).

"... because people got to know what I was doing, anytime there is something similar to what I was doing, then they share with me and I apply for and we got some grants and other support. This is because I posted what we were doing on social media, someone saw it and saw an opportunity to work with me. So, aside from that too, there have been direct fields which have risen as a result of my use of social media" (Respondent S).

"Not financial resources but human capital and everyone that I have ever hired were from online" (Respondent R).

"The people that I have I got them online. I did the advert online and they applied online" (Respondent J).

"Yes. We got software from someone online but it was useless and we couldn't even use it" (Respondent S).

Apart from the specific questions that were asked regarding the availability of financial, human, and information resources from online social interaction, some entrepreneurs also found other valuable resources for their business, including resources such as raw materials. Some others, however, do not see or use it as a marketing tool for their business. These points are highlighted by the narratives below.

"It's just someone who sold fabrics to me and that I got online. So, she decided to sell the fabrics to me in one yard as others will not do that. So, she

proposed and I bought the idea and I bought fabrics from her" (Respondent M).

"The only thing that I picked from social media was the photography and how it should look..." (Respondent E).

"Yes, definitely, and like I said the reason why we created it was to have a linkage with our public. So, we know what we are doing is climate change eco-friendly related stuff and at the end, we will need to get social media telling the public what we have and how things are happening" (Respondent EM).

Thus, both quantitative and qualitative data collected from entrepreneurs in Ghana and analyzed reveals that entrepreneurs' use of social interaction in evaluating their opportunities is mediated by the resources available to them on the various social media platform.

In addition to the resources available to entrepreneurs using online social interaction, the use of social interaction by entrepreneurs has played a key role and is pivotal in the business of entrepreneurs that were interviewed. For instance, qualitative data analysis revealed that during the initial stages of setting up their various businesses, social media was used to create awareness of their existence and to reach out to their customers. In other words, it was utilized as an advertising tool.

"I think social media has given us good opportunities that we wouldn't have gotten either. Social media has been very instrumental in the business and for instance when we started, if not for social media then we were to go out to all the people that we targeted to sell the ideas to but from the onset one of the places that we put stuff on was social media... So, we indicated that these are the foodstuffs we have and the prices and so hit us up by WhatsApp" (Respondent JA).

"What we did most with social media was advertising and informing the public about a new venture in town and friends were of help and they posted it on their WhatsApp and social media pages as well. Which made people interested in the amazing pictures they saw and they wanted to have a feel of something different actually" (Respondent K).

Further, social media was built into their initial business model and therefore dictated the pace of their business while others used online interaction via social media as a data collection tool in order to obtain information needed to build their initial business model. For some of the participants, before the launch of their product, their thought processes and decision-making were influenced by social media while others built networks through online social interaction.

5. DISCUSSION OF RESULTS

The results indicate that online social interaction does influence opportunity evaluation either directly or indirectly by mediating the evaluation process by making resources available to the entrepreneur. Aside from financial resources, entrepreneurs had access to human capital providing competencies or skills currently not possessed by the entrepreneur), physical assets, financial resources, exposure to a large amount of vital information (De Carolis, Litzky, & Eddleston, 2009; Semrau & Werner, 2014; Sullivan & Ford, 2014; Bucktowar, Kocak, & Padachi,

2015; Song, 2015). Social media provides the opportunity to create new combinations of information, which is an important resource, and individuals who actively interact online have access to more information. The proper transformation of said information as required helps in decision-making (Park, Sung, & Im, 2017) as indicated by the results. Other resources obtained include raw materials needed for the production of the goods, although some entrepreneurs found resources that were not of the quality that they needed them to be. These findings expand the literature on resource availability.

The findings of this study add to the literature on social capital and social networks by specifying that social capital can be obtained from social networks built through online social interaction. Skills and resources that are not possessed by the entrepreneur can be obtained from social capital and could influence their evaluation of identified opportunities. Social media gives rise to a new type of interaction, provides the opportunity to interact with potential stakeholders, and triggers other outcomes with significance for entrepreneurs.

This research also contributes to the resource-based view (RBV) theory. The RBV of the firm assumes that firms that possess resources that are heterogeneous and not perfectly mobile across firms in an industry are able to identify sources of sustained competitive advantage (Barney, 1991). Barney (1991) classified the resources into three groups: physical capital, human capital resources, and organizational capital resources. These resources of the firm are seen as heterogeneous and immobile across firms in an industry, affecting the firm's strategic progress, although not all resources are strategically relevant at a particular point in time. According to Peteraf (1993), external opportunities need to be matched to firm's internal resources in order to have a sustained competitive advantage. These resources required by the firm for sustained competitive advantage can be obtained from the online network.

In interactionist theory, motivation is the extent to which an individual is willing to interact with others, and interactional is what someone consciously does to have an impact on another's behavior. The results indicate high use of social media via WhatsApp and Facebook. These are highly interactive platforms and scored the highest. Online social interaction, as already indicated, had a positive effect both directly and indirectly on opportunity evaluation. The empirical results show that entrepreneurs were motivated to use social media as shown by the number of social media platforms that each of them used and were subsequently affected by it in their decision-making in both initial and current business models. It also showed that after feedback has been received from online social interactions, there were changes made to the opportunity to a substantial extent. This is confirmed by both the direct and indirect impact of online social interaction on opportunity evaluation.

It must, however, be noted that some entrepreneurs did not use social media to obtain required resources for their business or in building their business models because they did not trust the source, just like as established by Park et al. (2017), or did not think that they could obtain what they needed from there.

6. CONCLUSION

Religious beliefs (Valliere, 2008), emotions (Foo, 2011), gender (Gupta, Goktan, & Gunay, 2014), and role identity (Mathias & Williams, 2017) have all been studied and known to have an impact or influence opportunity evaluation. To the best of the researcher's knowledge, however, there is no study yet to measure the effects of online social interaction through social media on opportunity evaluation. The aim of the research, therefore, was to contribute to the literature on opportunity evaluation, specifically to evaluate the effect of online social interaction on the process using resource availability as a mediator.

Evaluating an opportunity can be challenging, especially for young entrepreneurs who do not have access to the resources required to pursue that opportunity. Social networks, social capital, and their role have featured prominently in entrepreneurial literature (Baron & Kenny, 1986; Lin, 1999, 2001; Hite & Hesterly, 2001; Davidsson & Honig, 2003; Crick & Spence, 2005; Hite, 2005; Tweet, 2006; Vasilchenko & Morrish, 2011; Wang, Liang, Mahto, Deng, & Zhang, 2020). There is growing evidence globally of an increase in online social interactions (Poushter, Bishop, & Chwe, 2018; Song, 2015) and social media has been seen as a useful tool in aiding entrepreneurs (Fischer & Reuber, 2011; Park et al., 2017) but it is often seen as a marketing tool. According to Hitchen et al. (2017), there is a need for entrepreneurs to be able to discover key resources quickly, and in so doing their opportunity identification can be hastened by the use of social media. A crossing of ideas and knowledge from various sectors and technologies generates exceptionally rich opportunities, like for an instance the crossing between food and pharmaceuticals (Hitchen et al., 2017). One tool for inflow and outflow of knowledge is social media and our results have proved that social media does provide access to required resources.

Entrepreneurs who were interviewed indicated that they have built a network as a result of social media and obtained a variety of resources through that medium. The access to resources will help in evaluating entrepreneurial opportunities differently. This result is corroborated by the findings of Dobusch and Kapeller (2018) who indicate that in this era of new digital technologies, organizations are relying all the time more and more on contributions from people outside the organization, who are either isolated and dispersed or are in communities, to innovate. The study also shows that social media is more than just an advertising tool but social media is a place where networks can be formed and entrepreneurs provided with access to human resources they would not otherwise have had. This is especially important for entrepreneurs in Africa, where there is a vast number of entrepreneurial opportunities to pursue but the lack of resources impedes the opportunity evaluation process. With the increase in the use of social media, African entrepreneurs have the opportunity to build networks across the globe, thereby expanding their access to vital resources. According to Hitchen et al. (2017), there is a need for entrepreneurs to be able to locate key resources swiftly and opportunity identification can be accelerated by the use of social

media. Spanning ideas and knowledge of diverse sectors and technologies produces tremendously fertile spaces for innovations, such as combining food and pharmaceuticals. Social media makes such interactions possible. Trainers of entrepreneurs should consider training young entrepreneurs to use online social interaction as a strategic tool to obtain resources, as start-ups especially in Africa have strong resource constraints.

The study had limitations. The study was a cross-sectional study where data collection was in one geographical location. With Ghana being a developing economy, the findings of the study could only be generalized to cover other developing countries since these economies have similar economic and political settings. Another limitation is that participants in this study would have offline interactions, which cannot be controlled as to how much these offline relationships would influence the opportunity evaluation process. The researcher, therefore, controlled for this in the model to be able to measure the effect online only.

However, it must be noted that Silva, Corrêa, Vale, and Giglio (2020) in their study have indicated

that both offline and online social capital is important and that each of them operates distinctively from each other. Since this is a cross-sectional study, tracking or mapping the changes to the opportunity over time was not possible. A longitudinal study would have been more appropriate to determine how dramatically a particular opportunity changes due to feedback received as a result of online social interaction or whether the changes follow a particular pattern. Although the study found that Facebook was the most popular social media tool used for interaction, it was not able to measure the individual impacts that each of the social media applications had on opportunity evaluation.

To confirm the findings of the study, it is recommended conducting future studies in other countries to confirm the positive effect of online social interaction on the opportunity evaluation process. It is recommended conducting longitudinal studies to track the nature of the change of an identified opportunity due to the different resources that have been obtained by the entrepreneur as a result of online social interaction.

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