



# Entrepreneurial alertness and new venture performance: Facilitating roles of networking capability

International Small Business Journal:

Researching Entrepreneurship

2018, Vol. 36(5) 453–472

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DOI: 10.1177/0266242617747667

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## Abstract

An ability to act upon an entrepreneurial opportunity is a major driver of new venture success. However, scholarly knowledge is limited on how and when entrepreneur alertness to entrepreneurial opportunities drives new venture success. This article addresses this gap arguing that variations in new venture performance are a function of levels of entrepreneurial alertness and networking capabilities. Using primary data gathered from 203 new ventures operating in a sub-Saharan African economy, Ghana, we find that increases in the levels of entrepreneurial alertness are related to increases in new venture performance. Additionally, we find that, under conditions of increased use of social and business networking capabilities, the potency of entrepreneurial alertness as a driver of new venture success is amplified. Theoretical, managerial and policy implications of these findings are discussed.

## Keywords

developing economy, entrepreneurial alertness, networking capability, new venture performance

## Introduction

The last three decades have witnessed a steady increase in scholarly enquiry into the role of entrepreneurial alertness in the entrepreneurial opportunity process (Begley and Boyd, 1987; Kaish and

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Gilad, 1991; Kirzner, 1999; Minniti, 2004; Tang et al., 2012). In entrepreneurial opportunity research, alertness has been identified as an important entrepreneurial characteristic defined as an 'ability to notice, without search, opportunities that have hitherto been overlooked' by others (Kirzner, 1979: 48). It is suggested that entrepreneurial alertness reflects an entrepreneur's ability to recognise an opportunity ahead of others (Gaglio and Katz, 2001; Tang et al., 2012). A major point of convergence being that alert entrepreneurs have greater capability to recognise possible opportunities for profit than do others (Tang et al., 2012).

Despite previous scholarly efforts to enhance an understanding of the entrepreneurial alertness concept, the literature has three notable gaps. First, theoretical specification of how entrepreneurial alertness influences performance lacks completeness. Although conceptual distinction between opportunity recognition and exploitation has been specified clearly (Dimov, 2011; Dutta and Crossan, 2006), research linking entrepreneurial alertness to performance has not explicitly distinguished between opportunity recognition and exploitation. However, for entrepreneurial alertness, that is an ability to recognise an opportunity ahead of others, to have a material impact on performance, an entrepreneurial action needs to be enacted (McMullen and Shepherd, 2006). Entrepreneurial action captures an entrepreneur's ability to act to exploit a recognised opportunity (Hébert and Link, 1988). Thus, an underlying problem with the existing literature in establishing a causal link between entrepreneurial alertness and performance is a lack of theorisation of the entrepreneurial action mechanism connecting entrepreneurial alertness to performance. Second, while Tang et al.'s (2012) study links alertness to firm innovation in an effort to establish the nomological validity of the alertness construct, we are not aware of other studies which empirically link entrepreneurial alertness to new venture performance. Third, studies examining entrepreneurial alertness and its consequences from a developing economy perspective are also lacking. We argue that context is important in entrepreneurship theory development (Zahra, 2007); hence, it is important to examine the relationship from a less developed economy perspective to broaden scholarly outlook regarding the alertness concept.

This article, therefore, makes three contributions to the entrepreneurship literature. First, this article cross-fertilises the entrepreneurial alertness literature with scholarly research on entrepreneurial action (Hallen and Eisenhardt, 2012; Vissa, 2011) to explain how entrepreneurial alertness is related to new venture performance. According to McMullen and Shepherd (2006), entrepreneurs must act on an identified opportunity worth pursuing to create and grow a successful new venture. Variations however may occur in the ability to act upon an opportunity (McMullen and Shepherd, 2006). Thus, we reason that a greater degree of alertness, predicated upon the ability to act upon an opportunity ahead of others, is likely to enhance new venture performance (Kirzner, 1999).

Second, the literature on entrepreneurial opportunity suggests that creating and growing a new venture is a social process entailing efforts by entrepreneurs to use their networks to mobilise and deploy resources to exploit an identified opportunity (Ebbers, 2014). As such, the ability of an alert entrepreneur to exploit an opportunity to create and grow a successful new venture is likely to be contingent upon networking actions. Despite this potential conditioning roles of networking actions of entrepreneurs (Hallen and Eisenhardt, 2012), previous research has focused on structural and relational entrepreneurial networks (Kwon and Arenius, 2010; Stam and Elfring, 2008), neglecting how entrepreneurs utilise networking activities to exploit entrepreneurial opportunities. This article contributes to the literature by drawing on resource-based theory to argue that access to network resources per se is not sufficient to drive performance; rather, performance is more likely to occur as a function of the capability to mobilise and deploy network resources to exploit entrepreneurial opportunities (Lavie, 2006).

Third, the proposed relationships are examined from a developing economy market perspective, in the sense that formal supporting institutions are underdeveloped in less developed markets (London and Hart, 2004), to the extent that networking becomes a potent source of entrepreneurial opportunity (Stam et al., 2014). In economies such as those in sub-Saharan Africa, exploitation of an entrepreneurial opportunity is surrounded by uncertainties, institutional weaknesses and credible chances of failure (Amankwah-Amoah et al., 2016; Radipere and Van Scheers, 2005). In such a context, Stam et al. (2014) suggest that informal governance mechanisms in networks can help provide entrepreneurs with structural supports to mitigate weak formal institutional supports. Reflecting this point, Radipere and Van Scheers (2005) demonstrate that networking skill is a strong determinant of venture success in South Africa. Hence, we suggest that networking capabilities are vital to aid alert entrepreneurs, in less developed societies, to exploit opportunities to create and grow new ventures.

## **Theoretical background and hypotheses**

### *Entrepreneurial alertness and new venture performance*

Scholarly enquiry has long argued that alertness constitutes an individual's the cognitive capacity to process prior knowledge and experiences, recognise patterns in an environment, process information and engage in social interactions (Ardichvili et al., 2003; Baron, 2006; Gaglio and Katz, 2001). For example, Kaish and Gilad (1991) argue that alert individuals have unique preparedness and readiness to discover an opportunity ahead of their peers. In the entrepreneurship literature, researchers have explored the notion of entrepreneurial alertness and its potential consequences (Minniti, 2004). Tang et al. (2012) provide a formal conceptualisation of alertness within the context of entrepreneurship, arguing that it has three behavioural components: (1) a proclivity to scan and search for new information, (2) an ability to connect disparate information and (3) an inclination to evaluate whether a new piece of information represents an opportunity. Alert scanning and searching refers to constant skimming of the environment and probing new information and changes and shifts overlooked by others. This dimension is consistent with the contention that opportunity cognition involves having a pre-existing knowledge, preparedness and sensitivity to new opportunities (Alvarez and Busenitz, 2001; Mitchell et al., 2002). Alert association and connection involves an ability to pull together disparate pieces of information and a propensity to build such information into coherent alternatives. This dimension addresses how individuals cognitively respond to, and process, new information cues. The evaluation and judgment dimension captures processes of noticing change, shifts in an environment and deciding upon whether the dynamics present a business opportunity (McMullen and Shepherd, 2006; Tang et al., 2012).

It is argued that entrepreneurs with a high degree of alertness have a propensity to search for changes in the business environment aiming to spot and exploit a business opportunity (Gaglio and Katz, 2001). According to Kirzner (1999), alertness has the potential to add substantial value to a business because it helps entrepreneurs to be aware of changes, shifts, opportunities and overlooked possibilities. It provides a capacity to use creative-cognition to spot and interpret information in varied knowledge domains related to the development of new opportunities (Kaish and Gilad, 1991).

Despite the potential performance consequences of entrepreneurial alertness, most scholarly analyses focus upon explaining the characteristics of alert entrepreneurs and the conceptual domain of the construct. This has limited knowledge regarding how entrepreneurial alertness influences the performance of new ventures. For example, in an effort to establish nomological validity of the

entrepreneurial alertness concept, Tang et al. (2012) draw insights from the organisational innovation literature to contend that '*alert entrepreneurs are likely to discover something new, and to increase innovations of their firms*' (p. 87). Recent studies have also linked entrepreneurial alertness to variety of organisational outcome variables (Amato et al., 2016; Roundy et al., 2017; Uy et al., 2015). Focusing on performance, Roundy et al. (2017) argue that entrepreneurial alertness is influential because alert entrepreneurs make rapid and nimble decisions and are, therefore, more likely to earn first-mover advantages.

Despite scholarly efforts to expand knowledge on the performance consequences of entrepreneurial alertness, theoretical specification of the relationship remains incomplete. One manner in which to advance knowledge on the performance consequences of entrepreneurial alertness is to draw upon insights from analyses of the entrepreneurial opportunity process. While multiple conceptualisations of entrepreneurial opportunity exists (see, for example, Ardichvili et al., 2003; Dutta and Crossan, 2005; Lee and Venkataraman, 2006), a major strand focuses upon cognitive activities involving the process of recognising and, subsequently, exploiting an opportunity (Lumpkin and Lichtenstein, 2005). It is argued that opportunities can be created (Gartner et al., 2003; Wood and McKinley, 2010) and/or objectively discovered by entrepreneurs (Alvarez and Barney, 2010). From a discovery standpoint, it is argued that entrepreneurs may recognise an opportunity in the market space but then performance, in the form of new venture success, can only emerge when the entrepreneur is ahead of peers (Shane and Venkataraman, 2000). From this theoretical perspective, McMullen and Shepherd (2006) argue that alertness becomes an entrepreneurial behaviour when alert individuals act upon identified opportunities. McMullen and Shepherd (2006) draw on Hébert and Link (1988) to suggest that entrepreneurial alertness is likely to have a material impact on entrepreneurial performance, provided entrepreneurs act to exploit identified opportunities ahead of others.

Entrepreneurial action entails a propensity to seize a new product-market opportunity by launching a new venture. This fundamental act may involve '*the act of launching a new venture, either by a start-up firm, through an existing firm, or via internal corporate venturing*' (Lumpkin and Dess, 1996: 136). This reasoning is consistent with Kirzner's (1979) contention that entrepreneurship is fundamentally about the processes of identifying new opportunities, and the entrepreneurial actions that follow. While several theoretical platforms could be used to explain how alertness influences performance, for example, cognition, we argue that the resource-based theory offers a stronger explanation for how alertness drives new venture performance. This theory asserts that resources constitute assets that are available to, and useful for, entrepreneurs to detect and respond to market opportunities (Wade and Hulland, 2004). It is assumed that such resources are heterogeneously distributed among entrepreneurs and may be unique and idiosyncratic to an individual entrepreneur (Helfat and Peteraf, 2015). A core tenet is that entrepreneurial resources per se do not influence performance (Zahra et al., 2006); rather, variance in performance is determined by deliberate efforts to create, extend and modify entrepreneurial resources (Teece, 2012).

On this note, we conceptualise entrepreneurial alertness as a cognitive resource that affords the entrepreneur a cognitive capacity to identify opportunities ahead of others (Helfat and Peteraf, 2015; Messersmith and Wales, 2013). However, ownership of a cognitive resource by an entrepreneur might not in itself secure an entrepreneur new venture success; its performance effect is likely to be determined by an entrepreneur's ability to exploit an opportunity recognised ahead of others (Teece, 2012). Accordingly, it can be expected that an increase in entrepreneurial alertness is likely to lead to new venture success on the basis of the fact that alert entrepreneurs are likely to take action to exploit existing and evolving new business opportunities ahead of others (Shane and Venkataraman, 2000). Consistent with the resource-based theory, highly alert entrepreneurs are

able to take advantage of growing market segments ahead of their competitors because they have greater ability to monitor market changes and trends; subsequently, they are able to respond quickly ahead of rivals (Ardichvili et al., 2003; Baron, 2006; Gaglio and Katz, 2001). By acting to exploit a new market value proposition from an identified opportunity, an alert entrepreneur is then able to launch a successful new venture ahead of other entrepreneurs (Baron, 2006; Short et al., 2010). Thus, we argue as follows:

*H1.* The greater the level of entrepreneurial alertness, the higher the likelihood that a new venture created would be successful.

### *The role of networking capabilities*

Launching and growing a new venture is a social process involving efforts by entrepreneurs to use their networks and connections to mobilise and deploy resources to exploit an opportunity (Ebbers, 2014). Despite the implications for new venture success and the potential to shed new light upon when opportunity exploitation influences new venture success, research on entrepreneurial networking activities has focused largely on structural and relational networks in which entrepreneurs are involved (Newbert et al., 2013; Stuart and Sorenson, 2007) and their outcomes (Jack, 2005). A contention being that structural holes, network diversity and relational ties help entrepreneurs gain access to diverse network-based resources to launch ventures (Granovetter, 2005; Sheng et al., 2011; Stam et al., 2014). There is an implicit assumption that all entrepreneurs are equally capable of utilising network resources to achieve desired performance outcomes (Stuart and Sorenson, 2007).

However, the social network literature (Ebbers, 2014; Fang et al., 2014; Hoang and Antoncic, 2003) suggests that access to network resources per se might not have a substantial effect on new venture performance. Rather, performance is likely to be an outcome of the ability to use networks to mobilise resources to exploit entrepreneurial opportunities ahead of others. This implies that entrepreneurs might differ in their ability to use resources embedded in networks to exploit entrepreneurial opportunities (Stuart and Sorenson, 2007). Yet, previous research has focused on explaining how entrepreneurs use their networking activities to facilitate the benefits generated from entrepreneurial actions. In this article, we integrate the resource-based theory and networking capability perspective to address this gap in the entrepreneurship literature. We examine the question of whether the effect of entrepreneurial alertness on performance is contingent upon levels of social and business networking capabilities.

Social networking capability refers to an entrepreneur's ability to mobilise resources available within a social network structure (Fang et al., 2014). This definition is consistent with the scholarly discussion on how entrepreneurs create and utilise resources embedded in network relations (Hallen and Eisenhardt, 2012; Vissa, 2011). As such, the current study views social networking as an entrepreneurial networking capability that enables entrepreneurs to leverage their connections to local community leaders and local social peers to assemble and combine disparate resources and information to a desired end.

Additionally, social networking provides the conduits through which private information may flow to entrepreneurs. To the extent that the performance outcomes of entrepreneurial opportunity exploitation by an alert entrepreneur hinges upon how useful market information is utilised in the exploitation process (Ebbers, 2014). Entrepreneurship involves high degrees of uncertainty and risk-taking; for this reason, information is a crucial resource that can be used to mitigate uncertainty (Acquaah, 2007). This argument is based on the understanding that social networks can boost the boundaries of rationality that an entrepreneur can use when deciding upon an

opportunity. As boundaries of rationality are extended, new venture ideas and opportunities plus potential sources of competitive advantages are better screened and assessed providing an enhanced effect of opportunity exploitation on new venture performance.

As networking with social peers exposes an entrepreneur to new and diverse business ideas, world views and a wider frame of reference for exploiting new business opportunities (Aldrich and Zimmer, 1986), it is likely that during the process of exploiting an opportunity, the entrepreneur would rely on diverse information to make a decision. In less developed societies such as those in sub-Saharan Africa, quality information on entrepreneurial opportunities is hard to obtain as such information is informally held by key non-market actors such as local chiefs and kings; but, these societies also have widespread collectivistic culture and kinship linkages (Acquaah, 2007). In the process of exploiting an opportunity, an entrepreneur can draw on affections embedded in kinship ties, for example, for knowledge on important sources of market success. The affections built in such social networks can also be used by an entrepreneur to build informal governing mechanisms to prevent opportunistic behaviour of exchange partners to enhance success of a venture. Thus, we hypothesise as follows:

*H2.* The effect of entrepreneurial alertness on new venture performance is strengthened when levels of social networking capability increases in magnitude.

Beyond social networks, entrepreneurs also develop and utilise resources in their business networks. Business networking refers to the formal or informal relationships among parties involved in a business transaction, for example, suppliers and buyers (Yiu et al., 2007). We draw upon on extant literature on managerial ties (Luo et al., 2008; Sheng et al., 2011) to define entrepreneurial business networking capability as ‘an entrepreneur’s ability to establish relationships with key customers, suppliers and competitors in an industry’. The literature indicates the importance of business network ties in entrepreneurship; they provide access to market resources (Luo et al., 2008; Yiu et al., 2007), crucial market information not openly available (Sheng et al., 2011) while Yiu et al. (2005) suggest entrepreneurs benefit from network ties as a ‘multidivisional structure that reduces transaction costs and provides economies of scale and scope’ (p. 185).

In developing economies such as those in sub-Saharan Africa, underdeveloped factor markets hamper an entrepreneur’s ability to acquire resources efficiently (Deng, 2009); hence, business networking can help overcome institutional barriers and enable entrepreneurs to connect to banks, suppliers, distributors, buyers and customers (Liao and Welsch, 2003; Sheng et al., 2011). In such a context, business networks help fill institutional voids and facilitate the resource exchanges required for launching and growing successful new ventures (Khanna and Palepu, 1997). Thus, business networking provides alert entrepreneurs with local business knowledge essential for exploiting entrepreneurial opportunities in a local market. There are some insights regarding how business networking may enhance the performance of entrepreneurial activities (Khanna and Rivkin, 2001). We argue that the resources (reduced transaction costs) arising from business networks, the reduction in institutional barriers and the decreased entrepreneurial uncertainties and risks brought about by having strong ties to business leaders might improve the chances of exploiting an opportunity for a successful new venture.

As such, business networks provide entrepreneurs with information about current and future opportunities and industry trends, thus enriching the quality of market information available to new entrepreneurs to exploit a new business opportunity (Boso et al., 2013). A reliance on high-quality market information may aid an entrepreneur launch a new venture with more informed insights into market trends. Similarly, business network ties offer access to advice, resources and

problem-solving skills. Entrepreneurs can use network resources to implement an entrepreneurial opportunity with reduced investment of time and effort. Therefore, we suggest as follows:

*H3.* The effect of entrepreneurial alertness on new venture performance is strengthened when levels of business networking capability increases in magnitude.

## Method

### *Sample and data collection*

We developed the study's sampling frame from Ghana's company register database and the Ghana Business Directory. A sample of 930 new ventures (450 from a total of 19,050 in Ghana's company register database and 480 from a total of 2550 in the Ghana Business Directory) was randomly selected to elicit participation in the study. The respondents were entrepreneurs (i.e. founders or owners who have participated in the start-up process for their venture). The sample includes ventures that were founded in 2003 or later, were privately owned and had fewer than 250 employees as of 2013. Scholars have not yet reached a consensus regarding what constitutes a new venture (Cardon and Kirk, 2015). However, the first six years of a new venture's existence is critical for the firm's survival (Shrader et al., 2000). In the current study, ventures up to 10 years of age were selected; this enabled us to capture firms at various stages of development, including those at early, growing and stabilisation stages (Cardon and Kirk, 2015).

We collected data in two phases. In the first, all 930 firms were contacted; a local branch of an research firm with trained researchers administered the questionnaires. Respondents were approached personally to complete a questionnaire. To examine informant competency, each respondent was asked to report on a 5-point Likert scale (1 = 'strongly disagree' and 5 = 'strongly agree') their (1) knowledge of the issues under examination, (2) accuracy of the information provided and (3) confidence in the answers to the questions. We obtained 288 useable responses from the first study, representing a 30.96% response rate. Mean scores of 4.48 (standard deviation (SD) = .56) for knowledge of issues, 4.45 (SD = .52) for accuracy of responses and 4.65 (SD = .55) for confidence in answers were recorded.

Three years later, the entrepreneurs from the 288 firms that participated in the first study were approached to capture firm performance. The follow-up survey was conducted given that cross-sectional studies can suffer from common method bias (Podsakoff et al., 2003). Therefore, we followed recent scholarly studies (Boso et al., 2013; Wiklund and Shepherd, 2011) to collect performance data from the selected firms with a three-year time lag, helping enhance confidence in our causal claims (Wiklund and Shepherd, 2011). Accordingly, using the same interviewers, a second hand-delivered questionnaire was administered three years after the first survey was completed: 203 firms (70.48%) provided complete responses to the Time 2 performance questions. We relied on the 203 matched questionnaires across Time 1 and Time 2 for our analyses.

The participating ventures were relatively young and small firms. On average, the firms had been in business for six years, which validates our focus on predicting new venture success. The average number of full-time employees was 28 and the average annual turnover was US\$342,150, suggesting that the firms are small business ventures. The firms are growth-oriented, as demonstrated by their high average percentage annual sales growth of 15.62% and profit growth of 13.21%. The average age of the entrepreneurs who responded to the survey was 48 years. The participating firms represented the manufacturing sector because this sector has been focused on by the Ghanaian government (Institute of Statistical, Social and Economic Research (ISSER),

2007). To assess non-response bias, we compared early and late respondents and found no significant difference in the study constructs.

### *Measure of constructs*

*Entrepreneurial alertness.* Entrepreneurial alertness was measured on a 13-item three-factor scale developed by Tang et al. (2012). Participants used a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) to rate the extent to which each item described the lead entrepreneur(s) in the firm: 'I am always actively looking for new information' (Scanning and search), 'I see links between seemingly unrelated pieces of information' (Association and connection) and 'I have an extraordinary ability to smell profitable opportunities' (Evaluation and judgment). The alpha coefficient of the general alertness factor is .87.

*Social networking capability.* The social networking capability measures were taken from Shane and Cable (2002) to assess social networking activities including the ability to utilise social contacts and connections to executives in external governmental and industry bodies (Luo, 2003). Three items were used to measure the construct ( $\alpha = .88$ ) on a Likert scale ranging from 1 = 'strongly disagree' to 5 = 'strongly agree'.

*Business networking capability.* Business networking capability measures were taken from Yiu et al. (2007) and Lau and Bruton (2011) to measure the ability to interact with major market actors including suppliers, customers, distributors and competitors (Boso et al., 2013). Each item was measured on a 5-point rating scale: 1 = 'not at all' and 5 = 'to a large extent'. An acceptable reliability value was obtained for this scale ( $\alpha = .94$ ).

*New venture performance.* To measure new venture performance, we used self-reported performance indicators for three reasons. First, objective financial data are not publicly available from new ventures as such businesses tend to treat objective financial data as confidential and are often reluctant to divulge it, especially in a weak institutional environment where trust can be very low (Li et al., 2005). Second, the literature suggests that subjective performance measures have been widely used in past research (Wiklund and Shepherd, 2005). Third, subjective performance measures were used to avoid the problems associated with objective performance measures in emerging economies, including non-standard financial reporting, inflation and devaluation of local currencies, and widespread use of informal means of exchanging value. Furthermore, it has been indicated that managerial self-reporting has a strong correlation with internally objective performance indicators (Dess and Robinson, 1984). Consequently, we measured the new venture performance construct with seven items adapted from previous studies (Boso et al., 2013; Luk et al., 2008; Sheng et al., 2011). The respondents were asked to evaluate a number of financial indicators (profitability, margin, sales growth) relative to their major competitors on a 5-point scale with anchors 1 = 'much worse than competitors' and 5 = 'much better than competitors'. Cronbach's Alpha value for the combined mean was  $\alpha = .89$ , indicating high reliability (Hair et al., 2006).

*Control variables.* A number of control variables were included in the analysis to account for exigencies that may influence the outcome variable. These include firm size, firm age, founder age, education, prior knowledge and environmental dynamism. Firm age was measured as the number of years the firms have been operating since formation. To prevent skewness, firm size was measured as the natural logarithm of the firm's number of employees (Sheng et al., 2011). Founder's age was

measured as the number of years, and the entrepreneur's educational attainment was dummy coded: 1 = 'high school', 2 = 'HND', 3 = 'bachelor's degree', 4 = 'master's degree', and 5 = 'doctoral degree'. The environment variable was measured with multi-item indicators that assessed entrepreneurial perceptions of the dynamism of the business' external environment (Jaworski and Kohli, 1993). Details of specific items used to measure the constructs, including their respective factor loadings and t-values, are available in Table 1.

### *Validity and reliability assessment*

We followed Cote and Buckley (1988) to statistically test for potential common method bias in our data by estimating three competing method models (Table 2). Specifically, Model 1 involved estimation of the trait-only model, in which all indicators were loaded on a single latent factor, while Model 2 was a method-only model, in which each indicator was loaded on its respective latent factor. Finally, in Model 3, a method and trait model involving inclusion of a common factor linking all the indicators in Model 2 was estimated. When the three models were compared, it was revealed that Model 2 and Model 3 are superior to Model 1, and that Model 3 is not differentially better than Model 2. These results demonstrate that common method bias is not a concern in our data. On the basis of this, we conclude that common method bias was not a major problem.

Subsequently, we used the maximum likelihood estimation technique and covariance matrix to examine the psychometric properties of all the multi-item scales in confirmatory factor analysis (CFA). We used the LISREL 8.5 software package for the analyses. The CFA was designed to detect any problematic indicators in our constructs. Table 1 displays the final list of items, their sources, their respective standardised factor loadings and t-values, and results of reliability and validity assessments. The results indicate that item loadings are in their hypothesised direction and are positive and significant, confirming the convergent validity of our measure. Furthermore, the results reveal that Cronbach's Alpha reliability, composite reliability and discriminant validity of the measures are acceptable: values obtained were larger than the recommended minimum cut-off values of .70, .60 and .50, respectively (Bagozzi and Yi, 2012). Moreover, the convergent validity of the scales was affirmed because each factor loading exceeds the suggested cut-off value of .40 and is significant at  $p < .001$ . Additionally, estimates for average variance extracted (AVE) are higher than .50 and larger than the squared correlation between each pair of constructs (Bagozzi and Yi, 1988).

The fit of the measurement model is assessed using a number of fit statistics. The chi-square ( $\chi^2$ ) is the most basic test; however, due to its sensitivity to sample size, the ratio of the chi-square to degrees of freedom was also used to estimate the model fit. Although there is no agreement regarding a ratio constituting acceptable 'fit', a value of below 2.0 is suggested (Bollen, 1989). The overall fit of the CFA measurement model (controlling for method bias) is acceptable:  $\chi^2/df = 1804.150/1475$ ,  $\Delta\chi^2/\Delta df = 1.22$ , Root Mean Square Error of Approximation (RMSEA) = .05, Non-Normed Fit Index (NNFI) = .93, comparative fit index (CFI) = .94 and Standardised Root Mean Square Residual (SRMSR) = .05. These criteria provide support for the robustness of the measurement items used.

### *Structural model estimation*

Moderated hierarchical regression analysis was utilised as the main statistical procedure for examining the relationship between entrepreneurial alertness and performance, as well as the proposed moderating effects of networking capability. Hierarchical regression is an appropriate technique for examining contextual research models (Cohen et al., 2003) and is well established as a model

**Table 1.** Constructs, measurement items and reliability and validity tests.

Item description	Loadings (t-values) a
Alertness scanning and search (Tang et al., 2012): $\alpha = .96$ , CR = .88, AVE = .72.	.77 (fixed)
I have frequent interactions with others to acquire new information.	.92 (18.76)
I always keep an eye out for new business ideas when looking for information.	.90 (16.50)
I read news, magazines, or trade publications regularly to acquire new information.	.88 (13.11)
I browse the Internet every day.	.83 (12.37)
I am an avid information seeker.	.78 (10.59)
I am always actively looking for new information.	.75 (9.98)
Alertness association and connection (Tang et al., 2012): $\alpha = .81$ , CR = .76, AVE = .71.	
I see links between seemingly unrelated pieces of information.	.94 (fixed)
I am good at 'connecting dots'.	.97 (26.81)
I often see connections between previously unconnected domains of information.	.85 (19.78)
Alertness evaluation and judgment (Tang et al., 2012): $\alpha = .86$ , CR = .79, AVE = .64.	
I have a gut feeling for potential opportunities.	.88 (fixed)
I can distinguish between profitable opportunities and not-so-profitable opportunities.	.84 (18.18)
I have a knack for telling high-value opportunities apart from low-value opportunities.	.83 (17.78)
When facing multiple opportunities, I am able to select the good ones.	.79 (14.89)
Social networking capability (Shane and Cable, 2002): $\alpha = .94$ , CR = .89, AVE = .69.	
I can obtain information about my industry from my network of contacts faster than competitors can obtain the same information.	.81 (fixed)
I have a professional relationship with someone influential in my industry.	.87 (14.58)
I have engaged with someone influential in my industry in informal social activity (e.g. playing tennis).	.86 (13.86)
Business networking capability (Lau and Bruton, 2011; Yiu et al., 2007): $\alpha = .88$ , CR = .82, AVE = .67.	
Customers	.74 (fixed)
Suppliers	.88 (12.17)
Competitors	.80 (10.67)
Environment dynamism (Jaworski and Kohli, 1993): $\alpha = .95$ , CR = .94, AVE = .73.	
Demand for industry products or services is declining (reverse coded).	.70 (fixed)
Products become obsolete quickly in target markets (reverse coded).	.78 (8.38)
New venture performance (Boso et al., 2013; Luk et al., 2008; Sheng et al., 2011): $\alpha = .89$ , CR = .87, AVE = .67.	
Profitability	.89 (fixed)
Profit margins	.92 (18.33)
Return on investment	.85 (17.29)
Market share	.88 (16.30)
Return on asset	.79 (9.22)
Profitability growth	.93 (17.29)
Sales growth	.82 (15.22)

CR: composite reliability; AVE: average variance extracted.

estimator in entrepreneurship studies (Anderson and Eshima, 2013). Under the hierarchical regression method, the variables, including the interaction variables, are entered sequentially to examine

**Table 2.** Descriptive statistics and correlations.

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1 Firm size	27.67	.64									
2 Founder's age	49.28	13.34	-.01								
3 Education	2.26	1.13	.09*	.07							
4 Venture age	5.75	2.42	.10*	-.03	.10*						
5 Environment dynamism	3.67	1.38	.07	-.02	.11*	.12*	<b>(.85)</b>				
6 Social networking	3.43	1.03	.08	.00	.08	.06	.10*	<b>(.83)</b>			
7 Business networking	3.40	.93	-.17**	-.19**	.06	.13**	.14**	.16**	<b>(.81)</b>		
8 Entrepreneurial alertness	3.65	1.41	.09*	.13**	.18**	.09*	.01	.04	.03	<b>(.84)</b>	
9 New venture performance	3.93	1.33	-.14**	.11*	.19**	.18**	.19**	.05	.18**	.22**	<b>(.81)</b>

SD: standard deviation.

N = 203; Square roots of average variance extracted are reported in the diagonal.

\* $p < .05$ ; \*\* $p < .01$  (two-tailed test).

whether the next higher-order interaction(s) account for a statistically significant difference in the total explained variance (Wiklund and Shepherd, 2005). All variables involved in interaction analysis were mean-centred prior to model estimation. The variance inflation factors (VIF) for all regressions in the study's model were calculated to account for multicollinearity. The VIF value is 2.09, which is lower than the threshold value of 10, indicating that multicollinearity is not an issue in our analysis (Aiken and West, 1991). The mean-centre values were then used to plot the interactions following procedures used in previous studies (e.g. Dawson and Richter, 2006).

## Findings

Table 2 provides the means, SDs and bivariate correlations between the constructs used. New venture performance correlates significantly and positively with entrepreneurial alertness, as well as with business networking capabilities; but not significantly with social networking. An explanation for this insignificant correlation is that the true value of the relationship may be masked by some of the other variables included in this study. As the findings show, social networking is related significantly to new venture performance in the regression analysis in Table 3 (see Model 3). Although not directly hypothesised, Model 2 indicates that the two moderators tested in this study contribute to the variation in new venture performance, as reflected in the positive coefficients for social networking ( $\beta = .17, p < .01$ ) and business networking ( $\beta = .19, p < .01$ ). In other words, the two networking capability variables are performing dual roles in our study: they are direct drivers of, as well as boundary conditioners of, the effect of alertness on new venture performance.

Hypothesis 1 proposes that entrepreneurial alertness is positively related to new venture performance. As shown in Model 2 of Table 3, the relationship between entrepreneurial alertness and new venture performance is positive and significant ( $\beta = .18, p < .01$ ), providing support for Hypothesis 1. Hypothesis 2 argues that social networking capability strengthens the relationship between entrepreneurial alertness and new venture performance, such that the relationship is expected to be stronger for firms with greater, as opposed to less, social networking capability. As shown in Model 4 of Table 3, the interaction term for entrepreneurial alertness and social networking capability (i.e. EA  $\times$  SN) is significant and positive ( $\beta = .35, p < .01$ ). Therefore, the results

**Table 3.** Results of moderated regression analyses.

Independent variables	Dependent variable: new venture performance (N = 203)				
	Model 1	Model 2	Model 3	Model 4	Model 5
<b>Control paths</b>					
Firm age (years)	-.13**	-.07*	-.08*	-.05	-.03
Firm size (employees)	.05	.04	.07*	.08*	.06*
Founder's age	.12**	.13**	.12**	.09*	.02
Founder's education	.11**	.05	.09*	.13**	.15***
Environmental dynamism	-.05	-.09*	-.12**	-.06*	-.04
<b>Direct effect paths</b>					
H1: Entrepreneurial alertness (EA)		.18***	.23***	.26***	.13**
Social networking ties (SN)			.17***	.29***	.15***
Business networking (BN)			.19***	.18***	.22***
<b>Two-way interaction effect paths</b>					
H2: EA × SN				.35***	.36***
H3: EA × BN				.49***	.45***
<b>Three-way interaction effect path</b>					
EA × SN × BN					.67***
<b>Model fit statistics</b>					
F-value	3.4***	3.8***	3.9***	5.9***	6.4***
R <sup>2</sup>	.10	.15	.23	.28	.37
ΔR <sup>2</sup>	–	.05*	.08***	.05***	.09***
Largest VIF	1.24	1.47	1.65	2.09	1.07

VIF: variance inflation factors.

Critical t-values are 2.325, 1.645 and 1.282, respectively (one-tailed test as all hypotheses are one-directional).

\*\*\* $p < .01$ ; \*\* $p < .05$ ; and \* $p < .10$ .

support Hypothesis 2. In Hypothesis 3, we argue that new venture performance is maximised when entrepreneurial alertness and business networking capability are both high. In support of Hypothesis 3, the product term involving entrepreneurial alertness and business networking (i.e. EA × BN) is positive and significant for new venture performance ( $\beta = .49, p < .01$ ). This supports the view that aligning high levels of entrepreneurial alertness and business networking capability is associated with greater new venture performance (Figure 1).

Following the procedure recommended by Cohen et al. (2003), plots of the interactions at  $\pm 1$  SD of the mean values were created to facilitate interpretation. As Figure 2 shows, entrepreneurs with high levels of alertness and a greater degree of social networking capability, generate a higher performance relative to counterparts with low alertness and less social networking capability. Furthermore, linear comparisons of the slopes of the two conditions suggest that the two slopes are statistically different; however, the relatively flat slope of low levels of social networking capability indicates that the relationship between entrepreneurial alertness and performance does not materially change among entrepreneurs with low levels of social networking as the level of entrepreneurial alertness increases. Similarly, Figure 3 shows that greater degrees of business networking capability facilitate the effect of alertness on new venture performance. Again, a linear comparison of the slopes of the two lines shows that they are statistically different; however, the relatively flat slope for the low business networking condition suggests that the entrepreneurial alertness–performance relationship does not materially change in the presence of low levels of business networking capability.

Model 5 estimates the effect of a three-way interaction between entrepreneurial alertness, social networking and business networking on new venture performance. The coefficient of the three-way

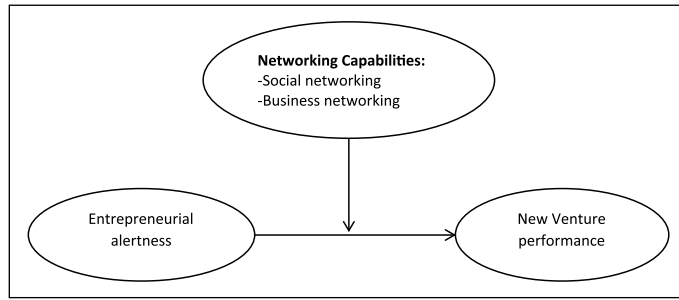


Figure 1. Conceptual model.

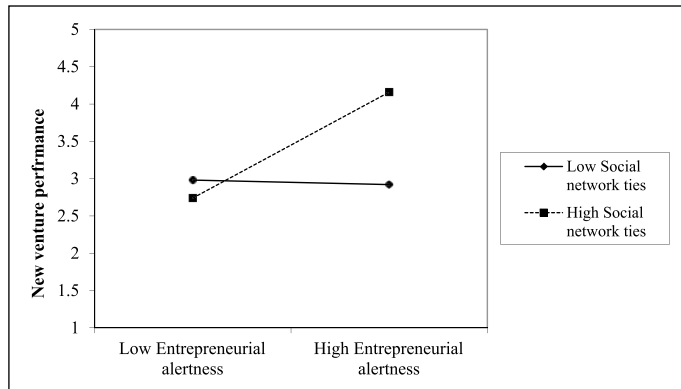
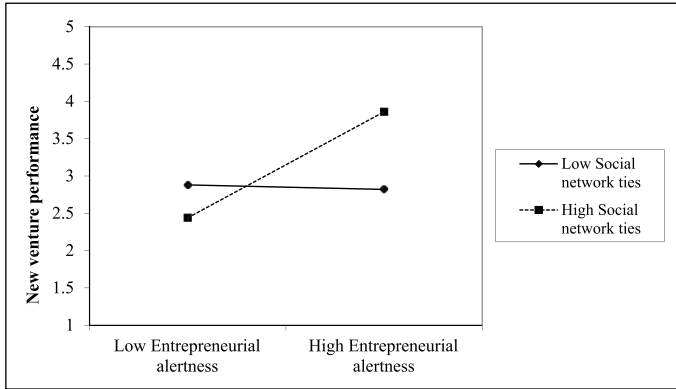


Figure 2. Interaction effect of entrepreneurial alertness with social networking capability on performance.

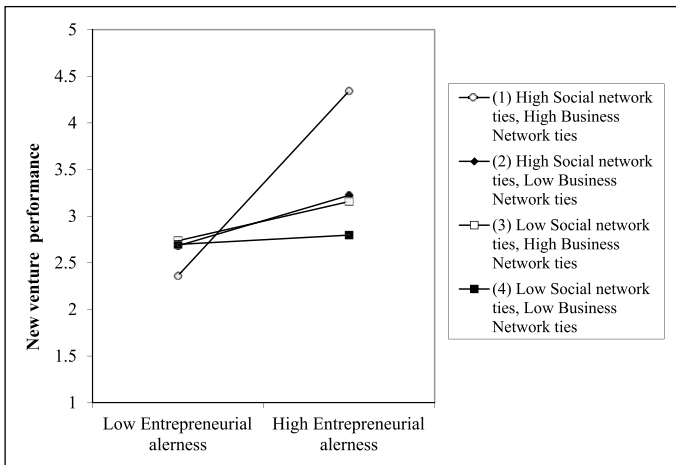
interaction term is significant ( $\beta = .67, p < .01$ ), and the significant change in  $R^2$  indicates a significant improvement in model fit from Model 4 to Model 5, suggesting that the three-way interaction term provides an additional explanation of the variation in new venture performance. Because of the difficulty in interpreting a three-way interaction solely from the coefficient value, Figure 4 plots the three-way interaction, again following the procedure outlined by Cohen et al. (2003). The results indicate that new venture performance increases significantly at increasing levels of entrepreneurial alertness, business networking capability and social networking capability. In contrast, under conditions of low entrepreneurial alertness, less social networking and low business networking, new venture performance is significantly reduced.

### Discussion and implications

This article examines the effect of entrepreneurial alertness on new venture performance, and the moderating effects of networking capabilities (i.e. social and business ties). The analysis shows that variability in entrepreneurial alertness explains significant changes in new venture performance. Findings further indicate that increases in entrepreneurial alertness and greater degrees of social and business networking capabilities, are associated with increases in new venture performance. In sum, the analysis finds that, when an alert entrepreneur acts to exploit an entrepreneurial opportunity and make efforts to use social and business networking activities to mobilise resources to exploit the opportunity, the resulting newly established entrepreneurial venture



**Figure 3.** Interaction effect of entrepreneurial alertness with business networking on performance.



**Figure 4.** Interaction effect of entrepreneurial alertness, business and social networking capabilities on performance.

is likely to generate higher performance. These findings enable us make three contributions to the entrepreneurship literature.

**Theoretical contributions**

First, while previous research indicates that alertness is an important determinant of entrepreneurial opportunity recognition (Baron, 2006; Gaglio and Katz, 2001; Short et al., 2010), theoretical specification and empirical examination of how alertness drives new venture performance remain incomplete. This article addresses this gap in the entrepreneurship literature, by integrating on the resource-based theory and research on entrepreneurial learning to conceptualise alertness as an entrepreneurial resource that may enable an entrepreneur to recognise an entrepreneurial opportunity. We argue that how alertness, as a cognitive entrepreneurial resource, influences new venture performance is predicated on the propensity of the entrepreneur to act to exploit an opportunity (McMullen and Shepherd, 2006; Newbert et al., 2011; Vissa, 2011). The capability to act to exploit an opportunity will vary among entrepreneurs (McMullen and Shepherd, 2006); axiomatically, some will be faster

to act to launch and grow a new venture. For this reason, we expected that variability in alertness, based on an entrepreneur's ability to act to exploit an entrepreneurial opportunity, is related to changes in new venture performance. Our findings show that entrepreneurial alertness has a material effect on new venture performance. Within the developing economy context of Ghana, weak institutional support in governing in business exchanges is challenging (Peng and Luo, 2000). Thus, entrepreneurs with a greater capability to recognise and subsequently act to seize new business opportunities are more likely to launch and grow successful new businesses in a developing economy context.

Second, the entrepreneurship literature indicates that the opportunity process is a social phenomenon capturing efforts by entrepreneurs to use their networks to mobilise and deploy resources to seize upon an opportunity (Fang et al., 2015; Newbert et al., 2013). However, previous research has not fully examined how entrepreneurial networking activity facilitates, or weakens, the new venture performance consequences of opportunity exploitation. This article contributes to this debate by integrating the resource-based theory and networking capability perspective to examine the moderating effects of social and business networking capabilities on the entrepreneurial alertness–new venture performance relationship. We argue that although acting to exploit an opportunity may enable entrepreneurs launch and grow a successful new venture, such an entrepreneurial effort may be more or less influential on new venture performance depending upon networking efforts (Fang et al., 2014; Hallen and Eisenhardt, 2012). Our findings indicate that the effect of entrepreneurial alertness on new venture performance is strengthened when networking efforts, captured in the capability to mobilise resources from social and business networks, are high. This finding is particularly important for entrepreneurs in less developed societies, who are often exposed to weak institutional environments with greater degrees of market uncertainty and volatility. In developing societies, such as Ghana, weaknesses in formal institutions undermine the ability of entrepreneurs to protect their business interests from dysfunctional marketplaces. In such a context, studies have argued that informal sanctioning mechanisms embedded in networks provide entrepreneurs with structural supports to mitigate weak formal institutional supports in the entrepreneurial opportunity process (Stam et al., 2014). This argument finds support in our study: an ability to exploit an entrepreneurial opportunity to launch a successful new venture in Ghana is strengthened when an entrepreneur has a stronger capability to use social and business networks to mobilise and deploy vital resources.

### *Managerial and policy implications*

Beyond its theoretical contribution, this analysis also provides strong implications for entrepreneurs and policymakers tasked with developing entrepreneurship policy in developing societies. In terms of implications for the entrepreneur, this study can guide new ventures in societies such as Ghana to improve their performance through the use of entrepreneurial alertness and managerial networking. In particular, the results show that high levels of alertness to an opportunity are important drivers of new venture success in the Ghanaian setting. The level of entrepreneurial alertness is generally low among entrepreneurs in the sub-Saharan African market (mean value of 3.61 on a scale of 1 to 7). It appears that entrepreneurs in Ghana pursue entrepreneurial opportunities while harvesting interests in short-term efficiency gains. This insight is particularly relevant for two types of real-life situations. First, owners of new ventures are advised to pay particular attention to hiring business leaders who score high on entrepreneurial alertness. Second, questions from the (Tang et al., 2012) entrepreneurial alertness scale adapted to the Ghanaian context (see Table 1) can help owners investigate the level of a candidate's entrepreneurial alertness in a pre-job offer assessment to increase the level of entrepreneurial mind-set among its workforce.

The idea that alertness to new business opportunities is directly related to success of new ventures, when networking activities of entrepreneurs are high, should be of particular interest to policymakers in sub-Saharan African societies such as Ghana. Two important policy lessons can be

drawn from the findings of this study. First, it seems entrepreneurs in Ghana generally have low entrepreneurial alertness levels, which means that they are less likely to identify new entrepreneurial opportunities. This calls for a need to intensify entrepreneurship education to highlight the value of searching, connecting and evaluating information on entrepreneurial opportunities that could be exploited. One way this can occur is to make entrepreneurship a central component of educational curricula, so that the entrepreneurial opportunity exploitation mind-set could be developed from an early age. Second, it has been demonstrated that entrepreneurship thrives in societies that have formal institutions, functioning effectively to govern economic exchanges. Unfortunately, institutions in sub-Saharan societies are too weak to be able to perform their governance duties. Entrepreneurs fill this gap by relying on network ties for informal governance mechanisms to protect their business interests. Given that informal governance mechanisms embedded in networks have been shown to be effective in aiding entrepreneurs develop and grow new ventures, entrepreneurship policymakers may need to devise means to incorporate those informal governance tools into formal business exchange codes of practice.

### **Limitations and future research**

The results reported in this study are limited in several ways, providing opportunities for future research. First, the study's reliance on perceptual measures of new venture performance presents a challenge. While this is a valid approach within the developing economy setting of this study, where access to reliable objective secondary data on new venture performance is non-existent, the fruitfulness of the insights gained from studying the behaviour of new ventures outweighs this limitation. Indeed, it has been argued that a founder-respondent's perception of an entrepreneurial venture's success or failure relative to rivals has a stronger motivational influence on managerial choices (Dess and Robinson, 1984). For example, Powell (1992) argues that an 'entrepreneur's perception of performance can be regarded as an important independent variable in and of itself' (p. 125). If available, future studies may, therefore, use an objective data to assess new venture performance.

Second, the study was conducted in the empirical context of new ventures in Ghana; so the findings must be evaluated in the context of this society. However, Ghana shares many characteristics with other emerging economies and therefore offers a rich context in which to test the impact of entrepreneurial alertness theories from a developing economy perspective. It is important to also acknowledge that, despite many similarities, developing countries possess their own unique cultural characteristics that allow for additional insights and theory development. For example, information is currently scarce on how national cultural factors – such as the future orientation, performance orientation or risk-aversion levels of the population – may act to shape the level and outcomes of entrepreneurial alertness activities. Consequently, research attention should be directed at exploring the impact of cultural factors on the success of entrepreneurial alertness across a range of developing economy societies, to incorporate into alertness theory additional variables that vary at the national level. Additionally, future studies might examine the entrepreneurial alertness and networking capability interaction in developing and developed economy settings to determine the value of networking activities under different resource availability conditions.

Third, this study focused on new ventures that have been in business for an average of six years. However, since old and larger companies may have varied degree of resource stock, the extent to which younger and more matured firms rely on networking activities for resources may vary. On this note, it could be argued that of the extent to which alertness impacts on performance may vary across younger firms and more matured entrepreneurial ventures in terms of degree of network-based resource utilisation. These are questions that future research could attempt to answer.

Fourth, this study has assumed that entrepreneurial action is a mechanism linking entrepreneurial alertness to performance. Yet, a formal empirical test of this mechanism (i.e. alertness to opportunity

→ entrepreneurial action → new venture performance) is not undertaken in this study because of data limitations. Again, the study has argued that the performance effect of entrepreneurial alertness is dependent upon the entrepreneur's ability to act on network resources to exploit recognised opportunities. However, the study does not formally test for different types of network resources. It would, therefore, be useful if future research takes steps to obtain data on specific entrepreneurial actions and different types of networking resources and model their effects on new venture performance.

Finally, the current study indicates that entrepreneurs in emerging economy contexts should be more alert to opportunities and that they should develop stronger networking capabilities. However, the development of such cognitive capabilities and their corresponding network resources may take substantial amounts of time and investment. The future may want to test how time and cost may further condition the effect of networking capabilities on the alertness–performance relationship.

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### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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