Entrepreneurial alertness and self-efficacy: A focus on social values and innovation performance

Orientation: It is widely accepted that the entrepreneurial process has attitudinal and behavioural components, with recent studies indicating that social values (SV) interact with entrepreneurial beliefs and competencies to significantly influence the innovation performance (INNP) of enterprises.

Research purpose: By relying on the prescripts of social cognitive theory (SCT), this study empirically investigated to what extent SV moderate the relationship between entrepreneurial alertness (EA) and self-efficacy to influence higher levels of INNP.

Motivation for the study: Studies indicate there has been a marked decrease in entrepreneurs who believe they offer innovative products, which is of great concern given that the levels of innovation are important for African enterprises.

Research approach, design and method: This cross-sectional study was based on primary survey data (n = 175 enterprises). Instruments were scrutinised for validity and reliability and hypotheses tested using regression analysis.

Main findings: Results showed that EA and entrepreneurial self-efficacy (ESE) explained a significant amount of variance in INNP. In addition, SV positively moderated the relationship between these behavioural variables and INNP.

Practical and managerial implications: It is important to have evidence-based policies that explain entrepreneurial behaviour and INNP of enterprises in African countries eager to move up the value chain to the next phase of economic development.

Contribution or value-add: This article contributes to the understanding of how SV, in an under-researched emerging market context, interact with entrepreneurial behaviour regarding alertness and self-efficacy to increase the levels of INNP.

Keywords: entrepreneurial alertness; entrepreneurial self-efficacy; social values; innovation; South Africa.

Introduction

Researchers recognise that entrepreneurship and innovation are relevant not only for large organisations but also for enterprises under different stages of economic development and in varied cultural contexts (Urban & Wood, 2017). If managers devote considerable resources to the innovation process but are unable to turn them into marketable offerings, resources are wasted and organisational performance suffers. Consequently, entrepreneurship and innovation are positively related to each other, often interacting to address market needs and helping an organisation to perform effectively (Jarrar & Smith, 2014; Zoogah, Peng, & Woldu, 2015).

The importance of the social context to entrepreneurship is evident when considering the rapidly increasing literature supporting the notion of an enabling environment, which includes social values (SV) that are conducive towards entrepreneurship (Davidsson & Wiklund, 1997; GEM, 2017). Social values play a vital role in determining whether or not individuals are behaving entrepreneurially (Kwon & Arenius, 2010), where researchers note that an individual’s decision does not depend on his or her preferences alone but is influenced by what others in society or community choose (Bygrave & Minniti, 2000). Moreover, it is widely accepted that the entrepreneurial process has attitudinal and behavioural components, where recent studies confirm that SV together with entrepreneurial beliefs and competencies may significantly predict the innovation performance (INNP) of enterprises (Kanonuhwa, Rungani, & Chimucheka, 2018; Urban & Wood, 2017; Welter & Smallbone, 2011).
Notwithstanding the importance of SV to entrepreneurial activity, entrepreneurs often function in ambiguous and uncertain social contexts (Peng, 2014), which may increase and constrain their innovativeness (De Jager, Muller, & Roodt, 2013; Smallbone & Welte, 2006). In South Africa, despite policymakers having targeted entrepreneurial activity as an important component of the country’s economic growth objectives, the Total Early-Stage Entrepreneurial Activity (TEA) rate remains among the lowest in the peer group of developing nations (Herrington, Kew, & Mwanga, 2017). Even more concerning is the fact that in the South African context, innovation levels for enterprises have been declining since 2015 – research indicates that there has been a marked decrease in entrepreneurs who believe they offer innovative products, which is of great concern given that business sophistication and levels of innovation are important factors for efficiency-driven countries eager to move up the value chain to the next phase of economic development (GEM, 2017; Herrington et al., 2017). Furthermore, despite increasing work on entrepreneurship, theories of entrepreneurship that have focussed on one-sided determinism, where either environmental or personality variables have been employed to predict entrepreneurship, have failed to capture the complexity of human action that encompasses the interaction of environmental, cognitive and behavioural variables (Bandura, 1986).

Acknowledging these theoretical and practical problems, this article builds on the theoretical foundations of social cognitive theory (SCT) (Bandura, 1986) that favours the concept of interaction, where behaviour, personal factors and environmental influences all operate interactively as determinants of one other (Bandura, 1997, 2001). This article contributes to the management literature by extending current views on alertness and self-efficacy, as these behaviours are often context-specific, and one can expect patterns of these behaviours to vary depending on societal values (Bellò, Mattana, & Loi, 2018). Consequently, the research question of the article is ‘to what extent do social values moderate the relationship between entrepreneurial alertness and self-efficacy to influence higher levels of innovation performance?’

Recent research findings emphasise that although the motivation is implied, or assumed in articles on entrepreneurship, it remains largely under-researched despite its critical importance in predicting and explaining entrepreneurial behaviours (Carsrud & Brännback, 2011; De Noble, Jung, & Ehrlich, 1999; McGee, Peterson, Mueller, & Sequeira, 2009). An important motivational construct is self-efficacy (Bandura, 1986, 1997, 2001), where entrepreneurial self-efficacy (ESE) has been used to study entrepreneurial behaviour, referring to the ‘strengths of a person’s belief that he/she is capable of successfully performing the various roles and tasks of an entrepreneur’ (Chen, Greene, & Crick, 1998, p. 296). Research reports that alert individuals with high levels of ESE possess complex and adaptive mental frameworks about change and their environment, assisting them to see situations from new perspectives (Gaglio & Katz, 2001; Urban & Wood, 2017). Such alertness entails not only being sensitive to information or changes in the environment, but entrepreneurially alert individuals are also able to adjust their initial evaluations as a result of the social context (Urban & Gaffurini, 2017).

It is anticipated that this article will deepen an understanding of how SV, in the South African market context, interact with entrepreneurial behaviour in terms of alertness and ESE, to increase the overall levels of enterprise INNP. Focussing on theoretical and practical problems in Africa is specifically important when considering that firms in developing countries ‘tend to be poorly managed’ (Bruton, Ahlstrom, & Obloj 2008). Researchers observe that despite its potential, entrepreneurial behaviour remains understudied in African countries (Zoogah et al., 2015), often resulting in inappropriate policy actions and insufficient support (Lundström & Stevenson, 2005).

The next section on ‘Theoretical overview’ will review relevant theory and prior research on entrepreneurial alertness (EA) and self-efficacy as they relate to innovation, at which point hypotheses are formulated for statistical testing. The methodology section is discussed next, where issues of sampling and instrument design will be detailed. Results follow, while the last section provides discussions and considers implications for theory and policy.

**Theoretical overview**

**Entrepreneurial alertness**

Although most individuals scan their environment, successful entrepreneurs may be better at discovering opportunities embedded in that environment (Tang, Kacmar, & Busenitz, 2012). Scholars have conceptualised alertness as an ‘attitude of receptiveness to available, but previously overlooked opportunities’ (Kirzner, 1979, p. 14), as well as a ‘propensity to notice and be sensitive to information about objects, incidents, and patterns of behaviour in the environment’ (Tang et al., 2012, p. 78). In addition, individuals are thought to identify and evaluate opportunities because they possess uniquely different forms of knowledge or human capital (Ardichvili et al., 2003); the ability to assess opportunities is a cognitive task based on the knowledge structures that people use to make assessments, judgements or decisions (Baron, 2004; Baron & Ensley, 2006; Corbett, 2007).

According to the SCT, because explanations of behaviour, especially cognitive behaviour, are domain (context)-specific, one can expect patterns of entrepreneurial cognition and opportunity recognition to vary, depending on the person’s purpose (Krueger, 2000). This line of research emphasises that the ability to assess opportunities is a cognitive task that is based on the knowledge structures and scripts that individuals use to make decisions (Krueger, 2007). Moreover, research findings suggest that the interplay between external (SV) and internal factors (alertness) determine as to why
some people, and not others, exploit opportunities (Baron & Ensley, 2006; Corbett, 2007; Haynie, Shepherd, Mosakowski, & Earley, 2010).

Studies report a positive relationship between the EA and various factors such as prior knowledge, information-processing skills, social networks, pattern recognition and entrepreneurial munificence (McCaffrey, 2014; Tang et al., 2012; Urban & Wood, 2017). Entrepreneurial alertness has also been approached from a process perspective (Baron, 2006; Gaglio & Katz, 2001; Tang et al., 2012), where an alertness process is initiated by scanning and searching, then moving onto association and connection in terms of gathering information of different qualities and using that knowledge to build new alternatives, finally ending with evaluation and judgement that involve individuals making assessments and judgements about change and innovation. Recent research confirms the positive impact of EA on opportunity recognition and innovation where an entrepreneur’s prior knowledge acts as a guide and results in increased alertness to new opportunities in the environment (Gaglio & Katz, 2001). Similarly, McCaffrey (2014) finds that EA is triggered by the existence of an incentive in which the entrepreneur can find entrepreneurial opportunities that should harness and translate into better INNP. In the same vein, Tang et al. (2012) reported that EA is linked to innovation, which suggests that EA is an antecedent of innovation. Building on in this research direction for the first hypothesis, it is anticipated that:

H1: There is a positive relationship between EA and INNP.

**Entrepreneurial self-efficacy**

Self-efficacy is based on the principles of SCT that favour the concept of interaction where ‘behaviour, personal factors and environmental influences all operate interactively as determinants of each other’ (Bandura, 1986, p. 14). Two decades of empirical research have generated a great number of studies that demonstrated the positive relationship between self-efficacy and different motivational and behavioural outcomes in clinical, educational and organisational settings (Stajkovic & Luthans, 1998; Urban & Wood, 2017). Self-efficacy refers to individuals’ convictions about their abilities to perform at designated levels and is an important motivational construct that has been reported to influence individual choices, goals, emotional reactions, effort, coping and persistence (Bandura, 1986, 1997, 2001; Boyd & Vozikis, 1994).

The self-efficacy construct has been applied to entrepreneurship where research into the ESE construct shows those with higher ESE as perceiving their environment as more opportunistic, and they tend to believe in their ability to influence the achievement of goals (Chen et al., 1998; De Noble et al., 1999). Entrepreneurial self-efficacy is relatively more general than task self-efficacy, where Chen et al. (1998) noted that ESE is ‘therefore stable yet not immutable, which allows entrepreneurs to modify and enhance their self-efficacy while interacting with their environment’ (p. 301). Entrepreneurial self-efficacy has also been studied in terms of the entrepreneurial process or broad stages as entrepreneurial tasks within a venture creation model. These stages have been labelled as searching, planning, marshalling and implementing (McGee et al., 2009). Entrepreneurial self-efficacy is typically measured across varying entrepreneurial roles and tasks that include the dimensions of marketing, innovation, management, risk-taking and financial control (Chen et al., 1998). The roles and tasks to which ESE correspond extend beyond new-enterprise formation and as such are required of entrepreneurs well beyond the point of founding (De Noble et al., 1999). Research findings have been fairly consistent for ESE in terms of its influence on a firm’s entrepreneurial orientation, where innovativeness plays a key role (Urban & Wood, 2017). Not only does the literature suggest that higher levels of ESE influence start-ups and innovations, but there have been calls for future research to apply ESE effectively so as to understand causal directions (McGee et al., 2009). Following prior research in this regard, the second hypothesis predicts that:

H2: There is a positive relationship between ESE and INNP.

Furthermore, by relying on the SCT framework, a hypothesis is formulated where interactions between alertness and ESE are anticipated. The rationale here is based on the work of Kirzner (1985) who interpreted alertness as a motivational problem, where entrepreneurship is both alertness to new opportunities and the actions following the discovery of an opportunity (McMullen & Shepherd, 2006). Kirzner (1979, 1985) maintains that although an individual cannot consciously trigger alertness, it will not be activated unless the individual is motivated (ESE) to do so. Accordingly, individuals with higher levels of ESE are more likely to be alert to new opportunities, where such alert entrepreneurs are more likely to pursue patterns of opportunities repeatedly (Baron, 2006), which, in turn, increases their levels of ESE. Consequently, it is predicted that:

H3: There is a positive relationship between ESE and EA.

**Social values and behaviour**

In SCT, social structural factors operate through psychological mechanisms of the self-system to produce behavioural effects. The self-system is not merely a conduit for social structure influences, but rather the self is socially constituted, where a human agent operates generatively and proactively, not just reactively to shape the character of his or her social systems (Bandura, 1986, 1997).

Social values can be understood in different ways because cultures and societies are enormously heterogeneous (Hofstede, 1980; Venter & Urban, 2015). Within each culture, there are large variations in personality requiring that any description of culture or values should focus on the ‘prototypic individuals’ in that culture (Hofstede, 1980). Viewing entrepreneurship from a cultural perspective, research shows that local entrepreneurs are socialised in the ways of the indigenous populace and may thus display the broad-based cultural values of the society in which they live (Steensma, Marino, & Weaver, 2000).
The contemporary study of entrepreneurship and the importance of social embeddedness can be traced to the works of Max Weber and Joseph Schumpeter, who argued that the source of entrepreneurial behaviour lies in the social structure of societies and the value structures they produce (Schumpeter, 1934; Weber, 1948). From an entrepreneurial perspective, SV are often referred to as attitudes towards entrepreneurship, which include not only how society values entrepreneurship but also how media attention to entrepreneurship promotes the development of a national entrepreneurial culture (Davidsson & Wiklund, 1997; GEM, 2017; Venter & Urban, 2015).

Moreover, the importance of how entrepreneurship can be stimulated by SV and norms (Earley, 1994) is evident in terms of research findings, which show that successful high-performing entrepreneurial ventures ‘fit’ best with their environments (Luthans, Stajkovic, & Ibrayeva, 2000). Such findings reinforce the notion of embeddedness of entrepreneurship in social and structural relationships (Bygrave & Minniti, 2000). Researchers found that a resident of a country with higher generalised trust and positive SV was more likely to perceive entrepreneurial opportunities than was a resident of a country with lesser generalised trust and SV (Kwon & Arenius, 2010).

Furthermore, scholars have applied the societal legitimisation perspective, which is based on the premise that prevailing values and beliefs among others may make a person more or less inclined towards entrepreneurship, to demonstrate the influence of SV on INNP (Davidsson & Wiklund, 1997). Recognising that SV play a key role in determining whether or not individuals behave entrepreneurially (Kwon & Arenius, 2010), it is argued that such behaviour may be better understood by relying on constructs with consistent and detailed specification, which are embedded in socio-psychology theories of behaviour (Bandura, 1986). Consequently, it is anticipated that:

H4: Favourable perceptions of SV will positively moderate the relationship between EA and ESE so that INNP will be higher.

Figure 1 presents the study model and shows the hypotheses with the predicted relationships between the constructs. Where the selection of variables is by no means exhaustive, where it is acknowledged that the actual process of how INNP takes place in enterprises is far more complex and that no single factor can determine the outcome of this process.

Research methodology

The study was an empirical analysis employing a cross-sectional design and was based on primary survey data. The focus of this article was on manufacturing enterprises in South Africa. South Africa has a well-developed manufacturing industry comparable to those of many developed countries, and in an emerging economy this sector is vital for economic prosperity and job creation (Herrington et al., 2017). By focussing on a single industry sector, a greater homogeneity of context is achieved that addresses the concerns of broad applicability versus perfect suitability for narrower groups in terms of sampling (Davidsson, 2004). Moreover, innovation and competitiveness of a country are principally derived not from the entire economy but mainly from the specific status of a narrow group of industries (Urban & Wood, 2017).

Sampling

The population study was based on sampling frames sourced from the South African National Small Business Chamber (NSBC, 2016) and the Department of Trade and Industry (DTI, 2016). The study took place in the Gauteng region in South Africa that dominates the South African economy, adding 40.8% of the value in the manufacturing sector (Statistics South Africa [SSA], 2014). Enterprises were selected by the common method of defining small and medium enterprises (SMEs) in South Africa by the pre-determined set of thresholds that includes the number of employees, turnover and assets as per each sector or subsector (RSA, 2003). Specifically, regarding the manufacturing sector, the total full-time equivalent (FTE) of paid employees is classified as medium = 200 employees and small = 50 employees (RSA, 2003). Based on the sample selection criteria, the SME sample parameters also served as control variables that included the size and the age of the enterprise. The age of the enterprise (years of operation since the enterprise was created) and the size of the enterprise were included as control variables to control for potential liabilities of newness, which might impact INNP and the growth of enterprises (Wiklund, Patzelt, & Shepherd, 2009).

The unit of analysis was the owner–manager of the SME, as they typically engage in strategic decisions and monitor the performance of their enterprise (Davidsson, 2004). After eliminating SMEs with incomplete firm information, a final database of 1300 SME owner–managers were contacted who met all the selection criteria. These SMEs were requested to complete the online survey. Ethical considerations were controlled by ensuring that the survey presented no risk to the respondents, specifically insofar as full and open information (informed consent) was communicated to the respondents. To ensure that no form of deception or misrepresentation took place in terms of extracting information from the respondents, their privacy and confidentiality was respected throughout...
the data collection process. In particular, the purpose and potential benefits of the survey were explained in the opening statement of the instrument. In addition, the participant’s rights and protections were made explicit and explained before the data collection process commenced. After several requests and reminders, after 2 weeks, a total of 175 respondents served as the final sample (13.5% response rate). This response rate was considered acceptable for online e-mail-solicited surveys of this nature (Sheehan & McMillan, 1999).

The characteristics of the sample revealed that most of the respondents were aged between 35 and 44 years (67%), equally spread between male (52%) and female (47%) participants. Most of the enterprises were less than 15 years old (77%), and relatively evenly distributed regarding small- (51%) and medium-sized enterprises (48%). T-tests found no significant differences (p > 0.10) between early and late respondents regarding age, gender, or the age or size class of enterprise.

Instruments
The survey instrument was developed from past theory and empirical findings, which coincide with the main constructs under investigation. Perceptual measures were selected, as they are widely used in research assessing entrepreneurial behaviours (Krueger, 2007).

Independent variables (IVs): EA was operationalised on the basis of the three conceptual domains as conceived by Tang et al. (2012). These domains are, in turn, reflective constructs based on the respondent perceptions of opportunities regarding (1) scanning and search (four items), (2) association and connection (five items) and (3) evaluation and judgement (five items). Sample items included ‘I have frequent interactions with others to acquire new information’; ‘I see links between seemingly unrelated pieces of information’ and ‘I can distinguish between profitable opportunities and not-so-profitable opportunities’. All items were measured with five-point Likert scales ranging from strongly agree (5) to strongly disagree (1).

Entrepreneurial self-efficacy was operationalised in terms of entrepreneurial roles and tasks that include the dimensions of marketing, innovation, management, risk-taking and financial control. The items for the self-efficacy assessment are adopted from Chen et al.’s (1998) ESE sub-scales (slightly modified) and comprise roles or tasks with respondents indicating the degree of certainty (high = 5, low = 1) in performing these roles or tasks on a five-point Likert-type scale.

Moderating variable (MV): Social values were based on the theory of cultural values, where cultural values affect the perception of an individual through cognitive schema, interpretation and sense-making (Davidsson & Wiklund, 1997; Hofstede, 1980). Social values were operationalised (four items) as social attitudes towards entrepreneurship, including how society values entrepreneurship as a good career choice; if entrepreneurs have a high social status; and how media attention to entrepreneurship is contributing (or not) to the development of a national entrepreneurial culture (GEM, 2017). Questions such as ‘those successful at starting a business have a high level of status and respect’ and ‘you will often see stories in the public media about successful new businesses’ constituted this measure. These items were measured with a five-point Likert scale ranging from strongly agree (5) to strongly disagree (1).

Dependent variable (DV): INNP was operationalised in terms of the extent to which entrepreneurs are introducing products that are new to some or all customers, and that are offered by no or few competitors (GEM, 2017). Subsequently, INNP indicators comprised three items, where respondents were asked to consider their venture performance in relation to customers and competitors on a five-point Likert scale in terms of (1) new products and services introduced in the past 3 years, (2) new processes introduced in the past 3 years and (3) proportion of sales from new products and services accrued in the past 3 years. All items were measured with five-point Likert scales ranging from strongly agree (5) to strongly disagree (1).

Data analysis
Considering the nature of the data collected – all from the same source – the study was susceptible to common-method bias (Podsakoff, Mackenzie, & Podsakoff, 2012). Initially, procedural steps were taken to counteract these risks where questions were required to be answered anonymously, and the questionnaires were returned directly to the researcher, thereby reducing any possibility of social desirability bias on the part of the respondents (Crowne & Marlowe, 1960). Furthermore, the instrument scales were adapted from prior studies and piloted (n = 20) to ensure that the scale items were clear and unambiguous to respondents. Statistically, to minimise common-method bias, all items relating to the constructs were explored in a single principal component analysis (PCA), using Harman’s one-factor test (Podsakoff et al., 2012). Results from the PCA revealed that four components, with eigenvalues greater than 1.0, accounted for 67% of the variance and the largest component accounted for only 14% of the variance. Consequently, no evidence of common method bias was identified in terms of the instruments used.

Ethical considerations
This article followed all ethical standards for research without direct contact with human or animal subjects.

Results
Reliability and validity tests
Firstly, the Kaiser–Meyer–Olkin (KMO) measure was used to verify the sampling adequacy for factor analysis. Results across the constructs provided KMO values between 0.74 and 0.85, and significant Bartlett’s test of sphericity values
(p < 0.001), which proved that correlations between items were sufficiently large for factor analysis. Exploratory factor analysis (EFA) was then used where factors with eigenvalues > 1 were retained, and factor loadings ranged between 0.65 and 0.90. Based on the Scree plot and proportions of variation explained, a four-factor model was obtained from the EFA results regarding the EA, ESE, SV and INNP factors, respectively.

Exploratory factor analysis was followed by confirmatory factor analysis (CFA) with the objective of eliminating items that did not meet pre-defined cut-off criteria (indicator loadings ≥ 0.4; factor reliability [FR] ≥ 0.6; and average variance extracted [AVE] ≥ 0.5) (Cooper & Schindler, 2011). Initially, the fit of each factor (subscale) and its observed items were assessed individually to determine whether there were any weak items with squared factor loadings below 0.20. For the EA construct, three sub-factors emerged as hypothesised, while for ESE only three sub-factors were retained, as the fourth-dimension items (financial control) were scattered and loadings were low with no clear factor discernible. For SV, one clear factor emerged. Similarly, for INNP, one clear factor emerged, representing items related to introducing products that are new to some or all customers and that are offered by no or few competitors. Secondly, each factor or subscale was modelled together with other factors measuring the same theoretical construct to determine if convergent validity has been achieved (first-order CFA model). Results showed model fit estimates for each factor as a good model fit, with AVE ≥0.5, indicating convergent validity among the dimensions. Thirdly, a second-order CFA model was tested in which the first-order factors became the indicators, and finally, CFA was run for the hypothesised model combining all theoretical constructs and their indicators to determine whether discriminant validity had been achieved. The model estimates are presented in Table 1, which shows a chi-square value of 274.74 (p = 0.000) and model fit indices such as the normed χ² (χ²/df = 2.13), GFI = 0.92, AGFI = 0.89, TLI= 0.90 and RMSEA = 0. 06, all indicating an acceptable model fit. Where necessary, improvements in the measurement model were made, based on modification indices that indicated changes and standardised residual values.

Scale reliabilities were tested by calculating Cronbach’s alpha and item-to-total correlations, with satisfactory results obtained (Nunnally, 1978). The summary statistics for each factor regarding the eigenvalue, percentage total variance explained and Cronbach’s alpha is shown in Table 2. Following satisfactory validity and reliability results, the measurement items for each construct as per the hypotheses were pooled to form composite measures and were treated as higher-order constructs going forward.

### Descriptive and correlations

Table 2 shows means, standard deviations and inter-correlations of the study variables. On the varying scale ranges, the results indicate that ESE, EA and SV are all above mid-point average, while the mean scores for INNP show

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**TABLE 1**: Statistics for the hypothesised measurement model (confirmatory factor analysis results).

<table>
<thead>
<tr>
<th>Model Fit</th>
<th>df</th>
<th>χ²</th>
<th>χ²/df</th>
<th>P</th>
<th>GFI</th>
<th>AGFI</th>
<th>TLI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>175</td>
<td>274.74</td>
<td>1.57</td>
<td>0.000</td>
<td>0.92</td>
<td>0.89</td>
<td>0.90</td>
<td>0.06</td>
</tr>
<tr>
<td>Path</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCAN</td>
<td>←--</td>
<td>EA</td>
<td>1.00</td>
<td></td>
<td>0.73</td>
<td>0.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASSOC</td>
<td>←--</td>
<td>EA</td>
<td>0.60</td>
<td>0.08</td>
<td>6.67</td>
<td>0.40</td>
<td>0.19</td>
<td>***</td>
</tr>
<tr>
<td>EVAL</td>
<td>←--</td>
<td>EA</td>
<td>0.14</td>
<td>0.04</td>
<td>3.72</td>
<td>0.21</td>
<td>0.06</td>
<td>***</td>
</tr>
<tr>
<td>MKT</td>
<td>←--</td>
<td>ESE</td>
<td>1.00</td>
<td></td>
<td>0.73</td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INNO</td>
<td>←--</td>
<td>ESE</td>
<td>0.76</td>
<td>0.06</td>
<td>10.12</td>
<td>0.71</td>
<td>0.52</td>
<td>***</td>
</tr>
<tr>
<td>MNGT</td>
<td>←--</td>
<td>ESE</td>
<td>1.00</td>
<td>0.05</td>
<td>11.10</td>
<td>0.72</td>
<td>0.61</td>
<td>***</td>
</tr>
<tr>
<td>SV</td>
<td>←--</td>
<td>SV</td>
<td>1.00</td>
<td></td>
<td>0.80</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INNP</td>
<td>←--</td>
<td>IP</td>
<td>1.16</td>
<td>0.06</td>
<td>13.01</td>
<td>0.74</td>
<td>0.75</td>
<td>***</td>
</tr>
</tbody>
</table>

EA: entrepreneurial alertness; SCAN: scanning and search; ASSOC: association and connection; EVAL: evaluation and judgement; ESE: entrepreneurial self-efficacy; MKT: marketing; INN: innovation; MNGT: management; SV: social values; INNP: innovation performance.

***: Correlation is significant at 0.001 levels (one-tailed).

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**TABLE 2**: Descriptive and correlation matrix.

<table>
<thead>
<tr>
<th>Variable</th>
<th>EA</th>
<th>ESE</th>
<th>SV</th>
<th>INNP</th>
<th>Age</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial alertness</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Entrepreneurial self-efficacy</td>
<td>0.375**</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Social values</td>
<td>0.344**</td>
<td>0.455**</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Innovation performance</td>
<td>0.306**</td>
<td>0.327**</td>
<td>0.337**</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Age (log)</td>
<td>0.009</td>
<td>0.001</td>
<td>0.008</td>
<td>0.004</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Size (log)</td>
<td>0.006</td>
<td>0.006</td>
<td>0.106</td>
<td>0.131*</td>
<td>0.018</td>
<td>1</td>
</tr>
<tr>
<td>Mean</td>
<td>3.43</td>
<td>4.01</td>
<td>3.78</td>
<td>2.41</td>
<td>0.11</td>
<td>0.13</td>
</tr>
<tr>
<td>SD</td>
<td>0.97</td>
<td>1.09</td>
<td>0.88</td>
<td>1.44</td>
<td>0.67</td>
<td>0.86</td>
</tr>
<tr>
<td>Cronbach’s alpha</td>
<td>0.95</td>
<td>0.79</td>
<td>0.72</td>
<td>0.81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: n = 175; Pearson’s two-tailed correlations: *, p < 0.05; **, p < 0.001.

EA, entrepreneurial alertness; ESE, entrepreneurial self-efficacy; SV, social values; INNP: innovation performance.
Hypotheses testing

Hypotheses were tested with hierarchical regression analyses. Results are displayed in Table 3. Model 1 included only the control variable (enterprise size and age), where an insignificant ($p \geq 0.05$) $F$-value of 3.285(0.082) was obtained. In model 2, both the control variables and the IVs were included. Here, a significant $F$-value of 2.865(0.019) indicates that the overall model is useful in determining the impact of the IVs on the DV. The analysis determined that EA was positively associated with INNP ($B = 0.381, t = 2.107, p < 0.05$), while ESE ($B = 0.297, t = 2.869, p < 0.05$). The main effects are all statistically significant and together explain 6.5% of the variance concerning the DV. Hence, H1, H2 and H3 are supported regarding a positive relationship between EA, ESE and INNP.

Regarding model 3, SV, as the moderating factor, was included and the results show a significant $F$-value of 2.688(0.014). This result provides support for H4 where the relationship between EA, ESE and INNP was predicted to be moderated by SV so that the association is positive. It must be noted that by way of inclusion, SV showed only a modest overall model improvement with a non-significant change in $R^2$.

An interesting finding was the positive interaction between alertness and ESE where prior research notes that an important set of entrepreneurial capabilities is the higher levels of ESE, which enable individuals to recognise new business opportunities (Drnovšek, Wincent, & Cardon, 2010).

The findings of this study successfully demonstrate the usefulness of employing SV as a construct to determine the interactions between entrepreneurial behaviour, in terms of alertness and ESE, to increase the overall levels of enterprise INNP. Statistical analyses reveal the relative contributions of each of the predictor variables as well as the moderator variable in explaining higher levels of INNP at enterprises in South Africa.

Integrating the study findings with prior theory and research shows that the results obtained add to the growing collection of findings on the role of alertness and ESE as it relates to INNP. For instance, studies show how ESE is influenced by the way in which entrepreneurs make strategic decisions (Baron, 2006), and that the success of any enterprise is more probable when an individual has higher levels of ESE required to structure, bundle and leverage its resources (McGee et al., 2009). Furthermore, by operationalising ESE in terms of entrepreneurial roles and tasks that include the dimensions of marketing, innovation, management and risk-taking, the study findings are aligned with prior studies that show that entrepreneurs need to continuously improve multiple sub-skills to manage the ever-changing circumstances, as typified in entrepreneurial environments (Welter & Smallbone, 2011).

When compared to prior studies, the significant findings on the relationship between EA and ESE and INNP resonate with similar studies of this nature, which show that highly alert entrepreneurs are better at discovering opportunities embedded in their social context, as their alertness allows them to spot high-potential opportunities that lead to innovations (Tang et al., 2012). These positive findings add to the growing body of literature where researchers such as Gaglio and Katz (2001) report that alert individuals possess complex and adaptive mental frameworks about change and interpret cues from SV in their environment, allowing them to perceive situations from new perspectives or in innovative ways.

**TABLE 3: Results of hierarchical regression as moderated by social values.**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>37.714**</td>
<td>12.638**</td>
<td>13.256**</td>
<td>5.889**</td>
</tr>
<tr>
<td>Age (log)</td>
<td>-0.105 -1.889</td>
<td>-0.105 -1.889</td>
<td>0.164 -1.733</td>
<td>0.198 -1.766</td>
</tr>
<tr>
<td>Size (log)</td>
<td>-0.129 -1.888</td>
<td>0.129 -1.888</td>
<td>0.104 -1.947</td>
<td>0.186 -1.048</td>
</tr>
<tr>
<td>Main effects: Independent variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alertness (EA)</td>
<td>-</td>
<td>0.381 2.107*</td>
<td>0.284 1.901*</td>
<td>0.681 2.787*</td>
</tr>
<tr>
<td>Self-efficacy (ESE)</td>
<td>-</td>
<td>0.297 2.896*</td>
<td>0.297 2.677*</td>
<td>0.343 1.969*</td>
</tr>
<tr>
<td>Moderating variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social values (SV)</td>
<td>-</td>
<td>0.286 1.895*</td>
<td>0.205 0.684</td>
<td></td>
</tr>
<tr>
<td>Interaction terms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EA × SV</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.557 2.869*</td>
</tr>
<tr>
<td>ESE × SV</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.455 1.981*</td>
</tr>
<tr>
<td>Model parameters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.019</td>
<td>0.105</td>
<td>0.158</td>
<td>0.197</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.013</td>
<td>0.065</td>
<td>0.075</td>
<td>0.109</td>
</tr>
<tr>
<td>$F$-value (sig.)</td>
<td>3.285 (0.082)</td>
<td>2.865 (0.019)*</td>
<td>2.688 (0.014)*</td>
<td>27.087 (0.001) **</td>
</tr>
<tr>
<td>$R^2$ change</td>
<td>-</td>
<td>0.052</td>
<td>0.010</td>
<td>0.034</td>
</tr>
<tr>
<td>$F$ change</td>
<td>-</td>
<td>2.312 (0.038)*</td>
<td>1.889 (0.103)</td>
<td>3.061 (0.005) **</td>
</tr>
</tbody>
</table>

Notes: Standardised coefficients are shown: *, $p < 0.05$; **, $p < 0.001$.

EA, entrepreneurial alertness; ESE, entrepreneurial self-efficacy; SV, social values.
Indeed, as a cognitive characteristic, alertness allows the individual to acquire more information related to his or her prior knowledge and utilise, organise, process and interpret it more efficiently than others to discover more opportunities (Gagliò & Katz, 2001; McGee et al., 2009). Therefore, these positive findings extend the current theory because it has now been demonstrated that higher levels of INNP involve a dynamic interplay between alertness and ESE. Such reciprocity between SV, alertness, ESE and innovation highlights the usefulness of employing SCT in terms of explaining the interaction between behaviour, personal factors and environmental influences (Bandura, 1997).

A unique contribution of this article is the focus on the moderating effects of SV on the relationship between alertness and ESE and higher INNP. These results suggest that entrepreneurship may be a self-reinforcing process where the degree of entrepreneurial activities is an outcome of a dynamic process in which SV are as important as legal and economic factors in determining levels of entrepreneurial activity (Bygrave & Minniti, 2000). From this perspective, the importance of recognising the influence of prevailing SV as embedded in regional and local communities is vital for understanding innovation in the African context (Pietersen, 2018). If entrepreneurship is not valued in terms of the SV of a particular country, then not only will it be associated with criminality and corruption, but other forms of economic pursuits will also prove unproductive and ineffective (Venter & Urban, 2015).

The findings also hold implications for practitioners, researchers and policymakers. Because policy is often formulated to act as an enabler for enterprise start-ups, there is a need for a strong body of evidence that demonstrates the effectiveness of policy in supporting SME innovation growth (Wright, Roper, Hart, & Carter, 2015). Evidence-based policies that are fit for purpose is important given the scarce resources of many SMEs in emerging economies, such as South Africa. Consequently, the study results may be very valuable for policy work in evidence-based interventions that are required to improve and enhance entrepreneurial behaviours as they relate to INNP.

In addition, such evidence-based policy may also assist educational institutions to design and offer research-based educational programmes to foster and develop EA and ESE to improve INNP. There is an opportunity for human resource practitioners and curriculum designers to develop skill-building exercises and activities that target EA and ESE, while at the same time considering the SV that entrepreneurs are presently facing.

Limitations of the article relate to the responses, which may have been influenced by respondent perceptual biases and their cognitive limitations. To counter any cognitive and motivational bias, as a precaution, the common method response bias was methodologically controlled by gathering data representing the independent and dependent variables at different time periods and by counterbalancing the question order. Safeguarding respondent anonymity also ensured that social desirability and item ambiguity were avoided to some extent. Regarding its cross-sectional design, the study does not allow for causality inferences to be formulated. Longitudinal studies are required to test whether EA and ESE lead to higher levels of INNP. Further research may look to further explore the hypothesised relationships by looking at the mediating and moderating effects of other individual- and national-level variables not accounted for in the study, such as the effect of creativity and national culture on INNP. Another limitation is the inability to generalise the study findings across SMEs in South Africa, as the focus of the current study was on the South African manufacturing sector. Future research will need to embrace a comparative, cross-country research design to identify whether results are generalisable to SMEs across industry contexts and countries.

**Conclusion**

This article provides fresh insights into the relationship between EA, self-efficacy and INNP while explaining the moderating effects of SV on this relationship. The article has contributed towards increasing the theoretical strength and methodological rigour of research into EA and self-efficacy, by demonstrating how these behaviours vary depending on the SV.

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**Competing interests**

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**Author(s) contributions**

B.U. wrote the article, was responsible for the conceptual design of the article and interpreted the data emanating from the fieldwork.

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**Data availability statement**

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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