

Positive deviance, ecologies of innovation and entrepreneurial networking

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Abstract

Purpose – The purpose of this paper is to examine the mediating role of ecologies of innovation in the relationship between positive deviance (PD) and entrepreneurial networking among small and medium enterprises (SMEs) in Uganda.

Design/methodology/approach – A cross-sectional survey design using quantitative approach was employed in this study. Data were collected with the help of self-administrated questionnaires from 228 SMEs. Systematic sampling technique was used. Multiple regression data were analysed with the help of SPSS software.

Findings – The results indicated that ecologies of innovation partially mediate the relationship between PD and entrepreneurial networking. Besides, PD and entrepreneurial networking are significantly related.

Research limitations/implications – The data were cross-sectional in nature, thus limiting monitoring changes in resources accessed from social networks by entrepreneurs over time.

Practical implications – Managers of SMEs and policy makers should pay more attention to the views of employees with divergent views, ecologies of innovation in creating a conducive environment for creativity and innovation among SMEs.

Originality/value – The study of PD, ecologies of innovation and entrepreneurial networking using complexity theory among SMEs in Uganda is a contribution to literature.

Keywords Positive deviance, Ecologies of innovation, Entrepreneurial networking, Complexity, SMEs

Paper type Research paper

1. Introduction

Successful entrepreneurs recognise the importance of entrepreneurial networking in the process of starting and sustaining businesses (Engel *et al.*, 2017; Krejcie and Morgan, 1970). Entrepreneurial networking provides useful information, social support and tangible resources to small and medium enterprises (SMEs) to achieve their goals, business growth and competitiveness. Entrepreneurial networking has been criticised for focussing mainly



on the static aspects of networks, content, relations, their governance and structures (Galkina, 2013; Pollack *et al.*, 2015). This focus limits the understanding of entrepreneurial networking because it is seen as an objectively given reality that comes into being and changes without the participation of entrepreneurs (Lux *et al.*, 2016; Sarasvathy and Venkataraman, 2011).

Although SMEs need resources from networks to thrive, entrepreneurial networks are becoming more complex to access resources from them due to a dynamic environment. At the same time, entrepreneurial networks enable rapid adaptation to a relentlessly changing environment when SMEs have positive deviant employees who deviate from the norms, and make experiments, which is the life blood of an ecology of innovation (Albanna and Heeks, 2019). Positive deviance (PD) refers to intentional behaviours that significantly depart from the norms of the referent group (organisation) in honourable ways that lead to positive outcomes (Mertens *et al.*, 2016). Previous studies have focussed on destructive deviant behaviours in organisations (Tziner *et al.*, 2006). There are studies that have explored the relationship between PD and entrepreneurial networking (Yildiz and Radtke, 2015). A closer scrutiny of these studies indicates that there is sparse literature examining the mediating role of ecologies of innovation in the relationship between PD and entrepreneurial networking. Ecologies of innovation advance a conducive environment, but also facilitate a self-organising process favourable for creativity and innovativeness among SMEs (Goldstein *et al.*, 2010; Lindhult and Hazy, 2016).

Theoretically, previous studies in entrepreneurship literature tended to examine entrepreneurial networking primarily focussing on cultural differences among entrepreneurs (Klyver and Foley, 2012). Scholars like Chia and Liang (2016) and Stam (2013) focussed on social capital of entrepreneurs in accessing resources from entrepreneurial networks. Engel *et al.* (2017) observed that uncertainty motivates an entrepreneur to join entrepreneurial networks to access resources. Research by Frese *et al.* (2014) has shown that effectuation action is a good predictor of entrepreneurial networking. A study conducted by Khan and Abasyn (2017) found that entrepreneurial strategy influences entrepreneurial networking. In entrepreneurship studies, there is insufficient evidence on the significance of PD and ecologies of innovation in enabling SMEs to access tangible and intangible resources from entrepreneurial networks (Mayanja *et al.*, 2019). Today, we see some entrepreneurs using positive deviant employees and ecologies of innovation to access resources from entrepreneurial networks in a complex environment. In this study, we posit that ecologies of innovation mediate the relationship between PD and entrepreneurial networking among SMEs in Uganda.

2. Literature review

2.1 Theoretical foundation

Complexity systems leadership theory (CSLT) explains the mediating role of ecologies of innovation in the relationship between PD and entrepreneurial networking in the complex environment (Goldstein *et al.*, 2010; Hazy, 2012; Lindhult and Hazy, 2016; McMillan, 2008). Hazy (2012) posits that higher levels of innovation could only be achieved through the emergent ecologies of innovation. Goldstein *et al.* (2010) argue that creating such ecologies of innovation could be made possible by interaction resonance or symbiotic behaviour among the SME employees with divergent views. These further contend that an unfolding series of event alertness tend to stimulate cohesiveness, ties, interactions and networking style among SME owners/managers (Haynie *et al.*, 2009; Shane, 2003). The theory explains PD, ecologies of innovation and entrepreneurial networking among SMEs in developing economies. SMEs identify and exploit opportunities because they do have positive deviants who do things in an unusual way. CSLT as an individual theory can predict mixed multiple possible outcomes from an entrepreneurial network.

2.2 *Positive deviance and entrepreneurial networking*

PD refers to intentional behaviours that significantly depart from the norms of the referent group (organisation) in honourable ways that lead to positive outcomes (Mertens *et al.*, 2016). Positive deviants normally perceive the world differently, break the norms and mobilise resources to pursue their new ideas that make the organisation compete unlike the conservative organisations. PD has become an important issue in organisations and is gaining increasing research attention (Herington and van de Fliert, 2018). However, entrepreneurial networking is understood as an active process of establishing and maintaining relationships, which underlines the dynamic side of their formation undertaken by the focal actor (Galkina, 2013; Johannisson, 2017). Also, entrepreneurial networking is a highly context-specific phenomenon where the setting imposes certain sociocultural patterns of establishing entrepreneurial relations (Burt *et al.*, 2013). In entrepreneurial networking, relationships provide emotional support for entrepreneurial risk taking and this is fruitful for some situations (Cooper, 2017). The relationships may be derived from membership of trade associations, business networks or indeed friendships with business people, which help the entrepreneur in providing the access to information (Lockett *et al.*, 2017).

Kim *et al.* (2016) posit that PD focusses on practice rather than knowledge. Although most problems have complex, interlinked underlying causes, the presence of positive deviants demonstrates that it is possible to find successful solutions since positive deviants are able to access resources from networks to implement their new ideas that may have radical departures from what is expected to be normal (Pascale *et al.*, 2010). Past studies indicate that people who have a high level of networking ability have also some extra positive abilities such as being good at problem solving, deal making, conflict managing and negotiating (Frieder and Basik, 2017). In addition, Horiuchi (2017) asserts that networking ability is also related to an individual's who analyse the capacity to understand and evaluate the actors in a dynamic environment. In developing countries, SMEs do not easily manage positive deviants to access resources because it is hard to separate the business owners from decisions since positive deviants tend to deviate from the set norms and policies. Some business owners/managers fail to manage positive deviants to access resources from social networks because of their perception towards opportunities (Yildiz and Radtke, 2015):

H1. PD has positive and significant relationship with entrepreneurial networking.

2.3 *Positive deviance and ecologies of innovation*

Ecologies of innovation exist within an ecosystem involving and interrelating tangible and intangible elements that are internal and external to the business (Frese and Gielnik, 2014). According to De Moura and Adler (2011), divide the innovation ecosystem into two main categories artificially distinguished, since one usually affects the other: actors and environmental conditions. The first includes individuals and organizations, while the second includes norms, regulations and markets, which, potentially, can influence the ability to create or sustain the impact intended by the organisation. Smith *et al.* (2011) highlight three main components of an innovation ecosystem: process, culture and competencies. For the SMEs to be successful, they should develop an explicit innovation process, build an organisational culture that rewards innovative behaviours and practices, and attract, train and promote employees with the skill sets to perform new roles and responsibilities.

Positive deviant employees of SMEs are likely to enjoy innovations when they are given freedom to dare and try their own ways of completing tasks with minimal control from top management. Employees will endeavour to use their own judgement even when they deviate from the norm; their deviating practices are opportunities for the management to learn when they apply tolerance of failure (Kibirango *et al.*, 2017). The literature on ecologies of innovation suggests that by its very nature, innovation requires a departure from the

organisational accepted norms (Mayanja *et al.*, 2019; Lichtenstein, 2011). This is because innovative thinking involves the creation and development of new ideas that are not held by the majority, and are aimed at benefiting the organisation. Although positive deviants play an important role in creating an enabling environment, sometimes they fail to do so without the support of top management (Yildiz and Radtke, 2015). In most cases, the presence of positive deviants among SME employees is fostered and demonstrated when individuals are able to voice their opposing viewpoints in a meaningful manner, which contributes to ecologies of innovation (Goldstein *et al.*, 2010):

H2. There is a positive and a significant relationship between PD and ecologies of innovation.

2.4 Ecologies of innovation and entrepreneurial networking

Ecologies of innovation are a foundation stone of successful entrepreneurial networking for SMEs all over the world (Thompson, 2017). Innovation is both a path and an end to achieve sustainable competitive advantage in the endless search for growth, increase of profit and customer loyalty; SMEs develop new technologies, products, processes, contents and services. Innovations without entrepreneurial networking may end up being inward looking without a clear understanding of the macro-environment. In this way, Rangus *et al.* (2016) suggest that for SMEs to thrive, they need to focus on networks and network participation.

Zeng *et al.* (2017) posit that ecologies of innovation cannot be created on their own without a brain of leadership with creative abilities; business management capacity gives SMEs the best chance to succeed in the market. The use of hybrid structures, combining bottom-up and top-down business strategies, in contrast to those uniquely hierarchic, open and unstructured, for instance, favours the success of innovative solutions accessed from entrepreneurial networks (Lux *et al.*, 2016). The leadership capabilities and structure in place determine how the business will create an enabling environment for entrepreneurial networking and the kind of resources to be accessed. It is, therefore, hypothesised that:

H3. There is a positive relationship between ecologies of innovation and entrepreneurial networking.

2.5 Positive deviance, ecologies of innovation and entrepreneurial networking

The main focus of this study is to address some unanswered questions: how PD and ecologies of innovation could, in the dynamic environment, predict entrepreneurial networking among SMEs in developing countries. Also, van Dick and Scheffel (2015) found that positive deviants come up with new ways of developing products/service processes and practices when they have an enabling environment that gives them freedom to explore new ways of solving problems. In the view of CSLT, Lindhult and Hazy (2016) established that without following organisation bureaucracy, SMEs are likely to create an enabling environment to accommodate positive deviants who tend to look for resources from networks to implement new ideas they have developed for the business growth and competitiveness. Positive deviants are creative and innovative although it is not easy to manage them in organisations where there is minimum interaction between management and subordinates to develop meaning from the divergent views in order to access resources from networks (Ebbers, 2014).

According to Albanna and Heeks (2019), most challenges faced by businesses are complex, interlinked underlying causes; the presence of positive deviants demonstrates that it is possible to find current and relevant solutions before all the underlying causes are addressed. PD is the connotation that tends to accept the aspect of doing something different or unplanned, even when it causes problems with others. It is noted that major innovations and transformations have, in one way or another relied on radical departures

from what is expected (Herington and van de Fliert, 2018). These claim that diversity is the source of organisational adaptability.

Lindhult and Hazy (2016) revealed that mediation of ecologies of innovation exists between PD and entrepreneurial networking enterprises. This suggests that whenever employees are encouraged to try their own methods of completing tasks, and given the freedom to make use of their ability and own judgement, even when they deviate from the norm, these same employees' level of new institution virtues or prospect identifications tends to intensify. This is, however, possible through tolerance of failure by the leadership; by promoting employees to achieve desired goals; or by designing and putting in place systems to monitor the emerging/evolving multilevel events (Kibirango *et al.*, 2017):

H4. Ecologies of innovation mediate the relationship between PD and entrepreneurial networking.

3. Methods

3.1 Design, population and sample

The study used a cross-sectional survey design and a quantitative approach to address the stated hypotheses. The study population consisted of 93,117 registered SMEs in Kampala district, Uganda (UBOS, 2013). The units of analysis were SMEs, while the units of inquiry were business owners/managers. A total sample of 392 SMEs was generated using the sample selection approach of Krejcie and Morgan (1970). In total, 456 questionnaires were returned out of 784 from respondents of 228 SMEs for a response rate of 58 per cent. The decision to select, distribute and accept a minimum of two respondents per business was based on previous scholars such as Baer and Frese (2003) and Ngoma (2009). By opting for this methodological approach, it is perceived that SME owners/managers and employees can socially network to access tangible and intangible resources. Multistage sampling in the five divisions of Kampala district was used based on SMEs' strata of manufacturing, services and trade. The systematic sampling technique was used to determine the k th number (238) based on the list of businesses that were in existence for more than one year, with more than five employees and whose capital base was more than \$10,000.

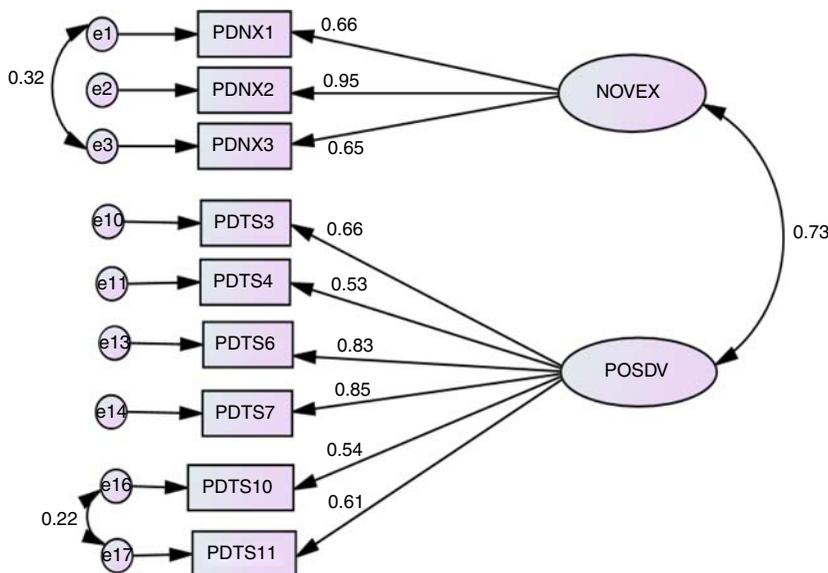
3.2 Data management and analysis

Data were analysed using SPSS version 22, and in line with our objectives, the present study proceeded to apply structural equation modelling (SEM) and analysis of moment structures (AMOS) version 22 to determine the adequacy of model fit to the data. SEM is a statistical technique for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions (Judea, 2000). SEM allows both confirmatory and exploratory modelling, meaning they are suited to both theory testing and theory development. Confirmatory modelling started with hypothesis testing represented in a causal model. The concepts used in the model were operationalised to allow testing of the relationships between the variables in the model. Data were screened to check for missing values, out-of-range values and outliers. In this case, we tested for the extent and pattern of missingness using descriptive statistical analysis (Hair *et al.*, 2010). The study examined the pattern of missingness whether the data were missing completely at random. The Little MCAR test statistical results – $\chi^2 = 58.325$, degree of freedom (df) = 58, Sig. = 0.463. Since the MCAR test significance value was less than $p < 0.05$, it was within the acceptable range for remedial action. Furthermore, descriptive results showed that the missing values were 854 (1.026 per cent), implying that the missing values were less than 5 per cent within the replacement region. Consequently, the missing values were replaced using linear interpolation method (Field, 2009).

Exploratory factor analysis (EFA) was also performed to test for factor loading on each of the study constructs (Hair *et al.*, 2010). The EFA results of the study indicated the factor items loaded well on the constructs (PD, ecologies of innovation and entrepreneurial networking) with communality values above 0.50. The results in Figures 1–3 show that the model fit indices were all above the threshold of 0.95 and the root mean square error of approximation was less than 0.05 cut-off (Kim, 2007), implying the retained items explained well the latent variables. In Figure 1, PD measurement model fit indices: incremental fit index (IFI) = 0.898; Tucker–Lewis index (TLI) = 0.975; comparative fit index (CFI) = 0.986 and root mean square error of approximation (RMSEA) = 0.051. Ecologies of innovation measurement model fit indices; IFI = 0.896; TLI = 0.976; CFI = 0.988 and RMSEA = 0.002. While the entrepreneurial networking measurement model fit indices: IFI = 0.986; TLI = 0.977; CFI = 0.973 and RMSEA = 0.051.

3.3 Measurement of variables, validity and reliability

Positive deviance. PD as shown in Table I was examined by assessing the level of existing tolerance towards individuals who tend to do something different or unplanned, even when it causes doubts with others (Goldstein *et al.*, 2010). The study also examined the behaviour of certain individuals whose uncommon practices enable them to find better solutions to problems than their neighbours who have access to the same resources (Pascale *et al.*, 2011). Confirmatory factor analysis (CFA) finally retained novelty experiments and positive deviant behaviour constructs (Seidman and McCauley, 2008). The Likert scale was one to six. The convergent validity was 0.750 and reliability was 0.920. This means that the instrument was good and hence appropriate for the study.



Notes: $\chi^2=22.840$; degree of freedom (df)=24; probability (P)=0.529; incremental fit index (IFI)=0.898; goodness of fit index (GFI)=0.977; Tucker–Lewis index (TLI)=0.975; comparative fit index (CFI)=0.986; normed fit index (NFI)=0.975; relative fit index (RFI)=0.962; CMIN/df=0.952; root mean square error of approximation (RMSEA)=0.051

Figure 1. CFA: positive deviance

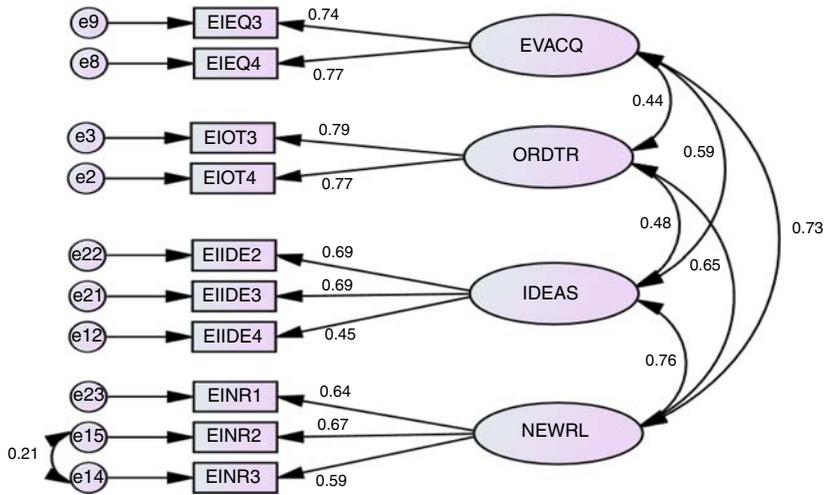


Figure 2.
CFA: ecologies of innovation

Notes: $\chi^2=28.018$; degree of freedom (df)=28; probability (P)=0.463; incremental fit index (IFI)=0.896; goodness of fit index (GFI)=0.976; Tucker–Lewis index (TLI)=0.976; comparative fit index (CFI)=0.988; normed fit index (NFI)=0.956; relative fit index (RFI)=0.930; CMIN/df= 1.001; root mean square error of approximation (RMSEA)=0.002

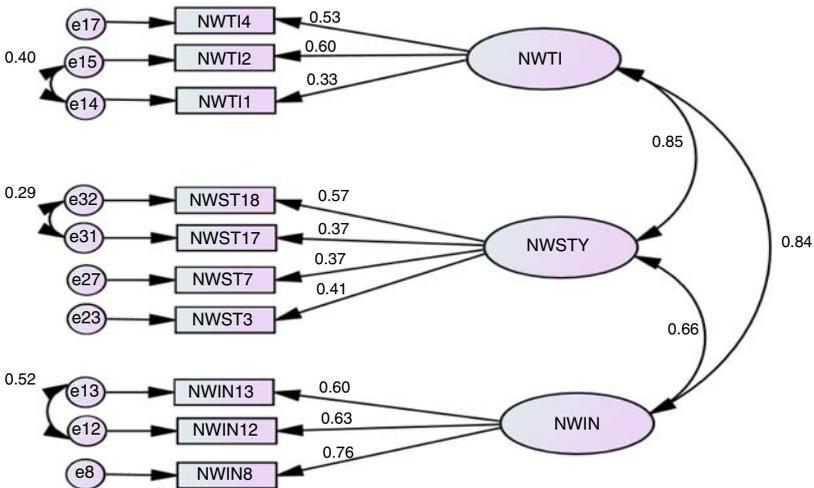


Figure 3.
CFA: entrepreneurial networking

Notes: $\chi^2=33.958$; degree of freedom (df)=29, probability (P)=0.241; incremental fit index (IFI)=0.990; goodness of fit index (GFI)=0.971; Tucker–Lewis index (TLI)=0.953; comparative fit index (CFI)=0.990; normed fit index (NFI)=0.937; relative fit index (RFI)=0.902; CMIN/DF= 1.171; root mean square error of approximation (RMSEA)=0.027

Ecologies of innovation. Ecologies of innovation were examined in this study as a process that is not led by any one individual but emerges through an unfolding series of events at every level of the organisation. This happens to be a mediating variable between constructs such as unfolding series of events, learning, new rules and order of transformation,

	Composite reliability	Average variance extracted (AVE)
<i>Ecologies of innovation</i>		
EVNAQ	0.881	0.787
EIDEAS	0.795	0.663
ENEWR	0.837	0.632
EORDT	0.799	0.570
EDYNA	0.789	0.555
<i>Entrepreneurial networking</i>		
NWIDE	0.819	0.603
NWINT	0.867	0.620
NWSTYL	0.821	0.534
NWTIES	0.794	0.658
<i>Positive deviance</i>		
NOVEXP	0.893	0.626
PDEVNT	0.898	0.595

Table I.
Composite reliability and average variance extracted (Cronbach composite reliability)

considering interactions between ecosystems, sub ecosystems and their environments (De Moura and Adler, 2011). The CFA-retained items were emergency dynamism, event acquaintance, order transformation, ideas and new rules. The convergent validity was 0.833 and reliability 0.912. It signified a high reliability of the instrument in line with the recommendation by Nunnally (1978) and Sarantakos (2013).

Entrepreneurial networking. The presence of strong and weak ties, and a broad network appears to influence the persistence and success of entrepreneurs (Davidsson and Honig, 2003). The CFA-retained interactions, ties, interdependence and networking styles. It measured the relationships between contacts of the responding entrepreneur, resources like information, money, materials, social support and space. There was strong convergent validity of 0.850 and reliability 0.919.

Discriminant validity was established with average value extracted being above 0.50 (Fornell and Larcker, 1981). The observed factor loadings compared with their standard errors revealed evidence of an association between PD and its respective constructs value being above 0.50 (Mohajan, 2018). Previous research supports the reliability and validity of the self-report measures (Lechner *et al.*, 2006). This approach consists of a selection of key information providers by virtue of their position, knowledge and information available (McEvily and Marcus, 2005). Table I shows the discriminant validity and composite reliability.

4. Results and discussion

4.1 Sample characterisation

Data from 228 SMEs (456 respondents) out of the targeted 392 were received representing an average response rate of 56 per cent. The descriptive statistics reveal that the nature of businesses was majority trade 102 (44 per cent), services were 85 (37 per cent), while manufacturing was 41(18 per cent). Most of the businesses had exited more than nine years counting for 36 per cent. Most of business owners/managers were male (62.4 per cent), whereas females were (37.6 per cent). The owners/managers were aged between 30 and 39 years (55 per cent). The number of years individuals had worked with the organisation 3–6 years (44.8 per cent). The highest level was degree at 83.3 per cent. Among the respondents, 91.3 per cent were managers, while 8.7 per cent were business owners. Therefore, the businesses had adequate experience and the respondents were knowledgeable about entrepreneurial networking in Uganda.

4.2 Pearson zero-order correlation

Zero-order correlation analysis was performed to determine the association between PD, ecologies of innovation components and entrepreneurial networking among SMEs. The correlation coefficients in Table II show that the study variables are significantly associated with each other at 0.01 level.

The means (*M*) and standard deviation (*SD*) of the study variables were as follows: PD (*M* = 3.90, *SD* = 0.628), ecologies of innovation (*M* = 4.15, *SD* = 0.403) and entrepreneurial networking (*M* = 4.21, *SD* = 4.63). The corresponding reliability Cronbach's α coefficients were 0.798, 0.768 and 0.769, respectively. In addition, the results reveal a positive association between PD and entrepreneurial networking ($r = 0.578, p \leq 0.001$). The relationship between PD and mediating variable (ecologies of innovation), ($r = 0.442, p \leq 0.001$). There is also a significant positive correlation between ecologies of innovation and entrepreneurial networking ($r = 0.496, p \leq 0.001$).

We constructed a latent structural equation model combining all the study constructs. Figure 3 shows the final model produced using the latent variables. The model fits the data well. $\chi^2 = 49.584$; *df* = 50; probability (*P*) = 0.490; IFI = 1.001; goodness of fit index (GFI) = 0.965; TLI = 1.001; CFI = 1.000; normed fit index = 0.930; relative fit index = 0.907; CMIN/DF = 0.992; RMSEA = 0.000. In estimating the model, all possible paths were allowed. Table III and Figure 5 show the paths that emerged from the analysis.

Further analysis was performed to test study hypotheses that are shown in Table III. The results show that *H1*: PD is a significant predictor of the entrepreneurial networking ($\beta = 0.392, p < 0.05$). This means that a positive change in PD affects entrepreneurial networking positively. *H2*: PD is also a significant predictor of the ecologies of innovation ($\beta = 0.347, p < 0.05$). This means that a positive change in PD contributes to a change in ecologies of innovation. *H3*: the results show that ecologies of innovation is a significant

Table II.
Association among
study constructs

	Mean	SD	1	2	3
Positive deviance-1	3.900	0.628	1.000		
Ecologies of innovation-2	4.152	0.403	0.442**	1.000	
Entrepreneurial networking-3	4.218	0.463	0.578**	0.496**	1.000

Note: **Significant at the 0.01 level (two-tailed)
Source: Primary data

Table III.
Mediation model

Standardised total effects	POSDEV	ECOINN	ENTNT
ECOINN	0.347**	-	-
ENTNT	0.486*	0.272*	-
Standardised direct effects	POSDEV	ECOINN	ENTNT
ECOINN	0.347**	-	-
ENTNT	0.392*	0.272*	-
Standardised indirect effects	POSDEV	ECOINN	ENTNT
ECOINN	-	-	-
ENTNT	0.094*	-	-
Bootstrapped Conf.	Lower Bd.	0.025	-
Std. indirect effect	Upper Bd.	0.202	-
<i>p</i> -value for indirect effect		0.029	
Mediation supported (Yes/No)		Yes	
Type of mediation		Partial	

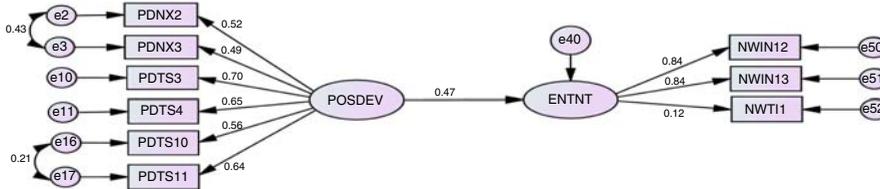
Note: Mediation effect of ecologies of innovation in the relationship between positive deviance and entrepreneurial. *,**Significance level was 99 per cent

predictor of entrepreneurial networking ($\beta = 0.272, p < 0.05$). This means that a positive change in ecologies of innovation affects entrepreneurial networking positively. On account of the findings for the hypotheses, we can conclude that the mediation was possible.

4.3 Mediation effect results

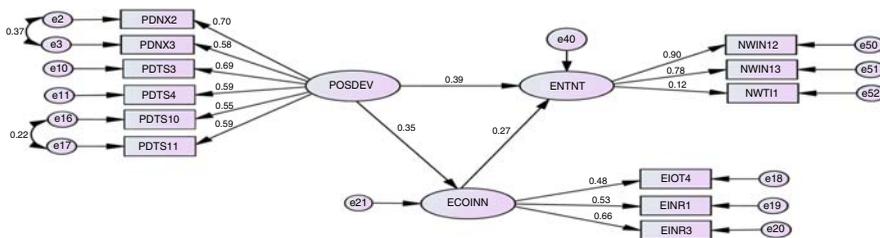
PD→EI→EN mediation model results. From a conceptual perspective, the most common application of mediation is to explain why a relationship between two constructs exists. In this paper, ecologies of innovation explain the relationship between PD and entrepreneurial networking. To understand how mediating effects are shown in the SEM model, we examined the model in terms of direct and indirect effects. SEM is considered for assessing mediation because it offers a reasonable way to control for measurement error, as well as some interesting alternative ways to explore the mediation effect (Baron and Kenny, 1986; Holmbeck, 1997; Hoyle and Kenny, 1999).

The mediation model values in Table III and also Figures 4 and 5 show that all the three variables, namely, PD, ecologies of innovation and entrepreneurial networking, are significantly and positively related ($\text{sig.} < 0.05$). This applies to both the standardised total effects and the standardised direct effects. The direct relationship between PD and entrepreneurial networking without mediation ($\beta = 0.272^*, p < 0.05$). The indirect effect obtained (after bootstrapping with 200 subsamples) from PD to entrepreneurial networking is statistically significant ($\beta = 0.094^*, p < 0.05$). There are results while at the same time, the direct effect is still significant, and the results show that the ecologies of innovation play a partial mediating role in the relationship between PD and the entrepreneurial networking.



Notes: $\chi^2 = 42.744$; degree of freedom (df) = 27; probability (P) = 0.028; incremental fit index (IFI) = 0.972; goodness of fit index (GFI) = 0.963; Tucker–Lewis index (TLI) = 0.963; comparative fit index (CFI) = 0.972; normed fit index (NFI) = 0.929; relative fit index (RFI) = 0.905; CMIN/DF = 1.583; root mean square error of approximation (RMSEA) = 0.051

Figure 4. Unmediated model



Notes: $\chi^2 = 49.584$; degree of freedom (df) = 50; probability (P) = 0.490; incremental fit index (IFI) = 1.001; goodness of fit index (GFI) = 0.965; Tucker–Lewis index (TLI) = 1.001; comparative fit index (CFI) = 1.000; normed fit index (NFI) = 0.930; relative fit index (RFI) = 0.907; CMIN/DF = 0.992; root mean square error of approximation (RMSEA) = 0.000

Figure 5. Mediated model

As such, ecologies of innovation explain the relationship between PD and entrepreneurial networking.

H1: the results are consistent with the hypothesis. The hypothesis shows that PD is associated with entrepreneurial networking. Positive deviants prefer novelty experiments that may influence their decision to access resources from social networks directly to implement their perceived ideas because of their networking style. Positive deviant employees may use their ties and interactions in the network to access resources to support divergent views that may not be very popular to the whole business. Mayanja *et al.* (2019) argue that some positive deviant employees may realise that there is no adequate internal enabling environment for them to access resources due to low employee support and interactions. This means that not all deviant employees can access resources without top management support. This is consistent with works of (Lavine, 2011; Vadera *et al.*, 2013). Positive deviant employees can only succeed to access resources from the social networks directly when they have support of the business owner/management. When employees are empowered by top management to make decisions from their high interaction and feedback, they are likely to access resources. CSLT (Hazy and Uhl-Bien, 2015) supports this finding because SME employees in developing economies like Uganda are likely to access resources from entrepreneurial networks when top management is flexible, resonant and understands how complex systems work in dynamic environments to remain competitive.

H2: the results indicate that, there is positive significant correlation between PD and ecologies of innovation. This suggests that emerging new ideas and opinions from divergent employees within the same environment may warrant employees' creativity or innovativeness. The findings further reveal that knowledge which emerges from divergent views due to their background, skills, opinions, perspectives, surprises and different views can be associated with enhanced interactions or encouragements from management. This is supported by Yildiz and Radtke (2015). The ability to facilitate learning within the organisations can as well be another platform for increasing rational thinking and creativity. Kibirango *et al.* (2017) posit that positive deviant employees are likely to be creative and innovative when the organisation has flexible structures and policies. Positive deviants may try their own ways of completing tasks even when they deviate from the norm and set policies with top management support (Goldstein *et al.*, 2010; McMillan, 2008). This may be a challenge among SMEs in developing countries because it is hard to separate the business owner from the direct control of the structures. However, positive deviant employees can create an enabling environment when the business owner/manager has close interactions with his/her employees and has resonant leadership skills as opposed to being a manager who strictly follows set policies. SMEs should develop structures to support positive deviant staff to test their innovative ideas (Kibirango *et al.*, 2017; Mayanja *et al.*, 2019). This study contributes to a theoretical link between PD and innovation literature. Positive deviant behaviours tend to diverge from organisational norms, are voluntary, and the intent is beneficial to the employees and the organisation (Mertens *et al.*, 2016).

H3: the relationship between ecologies of innovation and entrepreneurial networking was positive and statistically significant above and beyond the effects of control variables. When SME management create ecologies of innovation, employees are able to interact among themselves and identify opportunities that can be exploited through entrepreneurial networking by accessing the required resources and social support. In a business, wherever and whenever ecologies of innovation are enhanced, entrepreneurial networking among employees intensifies substantially as well. In this study, Lindhult and Hazy (2016) support that ecologies of innovation, like in complexity science, include employees' interdependence and their respective stakeholders, who operate in a co-evolution environment with relevant policies, structures and governance to facilitate emerging ideas from their network through interactions.

Where SME management apply emergency of dynamism, tolerance of failure and encourage employees to achieve the desired goals, they access resources from networks. Innovation occurs more effectively where there is exchange of knowledge among employees. Whenever an enabling environment is enhanced, entrepreneurial networking is likely to be more effective. The importance of diversity among employees helps in developing new ideas and relationships that help in dynamic networking for business support (Frese and Gielnik, 2014). CSLT supports this study; the SME owner/manager who acts as a leader tends to influence other employees, called followers, when he/she offers a set of choices, tasks and resources – together constituting a programme of action within the collective that is adopted by the followers. When this occurs, the individual actions of the followers and the owner/manager become inter-correlated. They begin to act as a system. By adopting a programme, each follower chooses among the programmes espoused by the SME owner/manager to access resources that enhance business competitiveness.

H4: this hypothesis was significant because ecologies of innovation partially mediate the relationship between PD and entrepreneurial networking among SMEs. Positive deviant employees may access resources from social networks on their own using their unique skills to pursue new ideas they believe in without necessarily going through top management. They can also influence top management to create an enabling environment that promotes individuals with divergent views to interact and come up with new ways of doing things that increase competitiveness. The management may permit a network of interactions, different interacting policies and tolerance of failure for employee creativity and innovativeness. This is supported by Herington. It is not so much about finding the right compositions of elements, but stimulating their relations and interactions in non-linear and non-hierarchical ways. It is not about defining the system and its boundaries, but about facilitating the self-organisation of its actors and emergence of the system out of multiple interactions (Jucevičius and Grumadaitė, 2014; Mayanja *et al.*, 2019). This implies that radical departure from the norm undertakings to solve prevailing challenges of SMEs without management/leadership support may not have an eco-evolution environment to allow positive deviants to express their views that depart from the norms.

The mediated model provides support for the hypothesis that ecologies of innovation mediate the relationships between PD and entrepreneurial networking. Overall, the model explains about 40 per cent of the variance in entrepreneurial networking. Thus, the results of this study have provided the reason why the relationship between PD and entrepreneurial networking exists. In particular, the significant mediation effects of ecologies of innovation explain how the inputs of PD translate into outputs, i.e. entrepreneurial networking. As such, ecologies of innovation explain the relationship between PD and entrepreneurial networking among SMEs (Luthans and Youssef-Morgan, 2017).

The study findings are consistent with previous studies showing that proper management of positive deviants complements institutional practices and procedures with a focus on things that are different and on the outer edge (Lindhult and Hazy, 2016; Pascale *et al.*, 2011). If PD is well facilitated by dynamic management, they turn out to be champions of ecologies of innovation (Kaletka *et al.*, 2017). The results supporting the CSLT standpoint (Goldstein *et al.*, 2010; Lindhult and Hazy, 2016) show that most of the collaborations do not come out of the blue, but are linked to ongoing networks and are sparked by employees with divergent views who interact to attach meaning to new ideas. Employee interactions offer the opportunity for unique insights within the complexity field broadly; human beings as individuals are at the nexus of emergences at the social level. Emergent properties and patterns must be recognised, navigated and in some way encouraged by individuals if they are to take advantage of coordinated action to access resources from entrepreneurial networks to overcome liabilities of smallness.

5. Summary and conclusion

Understanding the power of ecologies of innovation as a mediator between PD and entrepreneurial networking provides value and guidance to SME owners/managers on the process and mechanism of stimulating and nurturing entrepreneurial networking among SMEs in Uganda and beyond. The findings indicate that the importance of the PD through emergency dynamism, new ideas and order transformation can be a conduit through which positive deviants can entrepreneurially network to access resources more effectively. It is through such innovative support by the SME owners/managers that employees would develop the zeal of learning how to deal with the prevailing new challenges creatively and to stimulate spontaneous new idea generation. Conclusively, the findings suggest that ecologies of innovation is a mediator in the relationship between PD and entrepreneurial networking among SMEs by exerting both direct and indirect effects on entrepreneurial networking. This confirms the importance of ecologies of innovation in creating a conducive environment for accessing tangible and intangible resources, especially in developing countries. An SME business owner/manager should support positive deviants, and create a conducive environment for employees to interact in supporting innovative ideas and access resources from entrepreneurial networks.

6. Study implications

6.1 Theoretical implications

This study makes a significant contribution by domesticating CSLT in the study of entrepreneurial networking among SMEs in developing economies. The results of this study confirm that employees with divergent views and novelty experiments contribute to ecologies of innovation, which is crucial for employees to come up with innovative ways of improving products/services and processes for SME competitiveness. Therefore, it is important for owners/managers of SMEs to recognise that positive deviant employees and ecologies of innovation contribute to the access of tangible and intangible resources from entrepreneurial networks for business competitiveness in a dynamic environment. Therefore, in the case of replication of the study, there is a need to consider the same theoretical framework. Thus, the study has contributed to the ongoing debate in the field of entrepreneurship. This therefore widens the literature on PD, ecologies of innovation and entrepreneurial networking among SMEs in Uganda using CSLT.

6.2 Policy implications

From a policy perspective, SME owners should pay attention on ecologies of innovation measures. These include providing employees freedom to try their own ways of doing things and encourage employees to make use of their ability and own judgement even when they deviate from the norm. The owners/managers should come up with flexible flat structures and policies that promote employees' interaction enablement, mutual collaborations among employees and adaptability to a dynamic environment.

6.3 Managerial implications

Positive deviant employees are likely to make errors in the process of deviating from norms. The management should focus on the process of learning from the mistakes and how to improve on the new generated ideas without punishing the employee since it kills initiatives. The organisation systems should accommodate information sharing and error management, developing new ways of doing things and accessing resources from social networks (Moore *et al.*, 2014). Business owners/managers should endeavour to create an enabling environment, create platforms for employees to interact and adapt to a changing environment to generate innovative ideas.

7. Limitations of the study

The study was cross-sectional; it is possible that the views held by individuals may change over the years. In addition, future research could carry out the study using a longitudinal design. In spite of the limitations, policy makers in Uganda and perhaps in other developing nations dealing with SMEs, academicians, business owners, managers and even general readers interested in the field of PD, ecologies of innovation and entrepreneurial networking development might find this study useful.

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